Instituto de Medicina Molecular Lisboa

Scientific Report 2016

Lisbon, March 2017

MM Lisboa

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Structure and Organization

Research and development in the Biomedical Sciences plays a central role in generating knowledge and in the application of this knowledge to improving the quality of life.

The mission of the Instituto de Medicina Molecular (iMM Lisboa) is to foster basic, clinical and translational biomedical research with the aim of contributing to a better understanding of disease mechanisms, developing novel predictive tests, improving diagnostics tools and developing new therapeutic approaches.

Located on the campus of the Faculdade de Medicina da Universidade de Lisboa (FMUL), iMM Lisboa is a Laboratory Associated to the National Ministry of Science and Higher Education. iMM Lisboa is mainly supported by national public funds and European Union funds. The research expenditure includes additional funds obtained from peer reviewed competitive grants, private donations and industrial partnerships.

Created in December 2002, iMM Lisboa results from the association of five former research units form the FMUL: The Biology and Molecular Pathology Center, the Lisbon Neurosciences Center, the Microcirculation and Vascular Pathobiology Center, the Gastroenterology Center and the Nutrition and Metabolism Center. The institute is a Private, Non-profit Association.

iMM Lisboa Associate Members

Universidade de Lisboa;
Faculdade de Medicina da Universidade de Lisboa;
Hospital de Santa Maria;
Associação para a Investigação e o Desenvolvimento da Faculdade de Medicina;
Fundação Oriente.

Board of Trustees

The Board of Trustees is composed by representatives of associated members and meets at least once per year to analyse the scientific and finance report and to approve the plan of activities and budget for the next year.

Board of Directors

M. Carmo-Fonseca	**Maria M. Mota**	**Bruno Silva-Santos**
MD, PhD – President	PhD – Executive Director	PhD – Vice-President

Administration Board

The Administration Board is composed by the Directors, the Research Program Coordinators, and the Directors of the FMUL and Santa Maria Hospital. It meets at least twice a year to define scientific strategies and actions, administrative organization plans and budgetary priorities.

Council of Scientists

The Council of Scientists is composed by all Group Leaders. It meets at least once per year to discuss the scientific strategies and plan of actions proposed by the Board of Directors. This council elects two representatives to participate in the meetings of the Board of Trustees.

Scientific Advisory Board

Undertake periodic evaluations to the iMM Lisboa specific programs and include international experts of scientific fields.

Carlos Caldas

MD, PhD – Cambridge Cancer Center, United Kingdom

Philippe Sansonetti

MD, PhD – Pasteur Institute, France

Gustave Moonen

MD, PhD – Université de Liége, Belgium

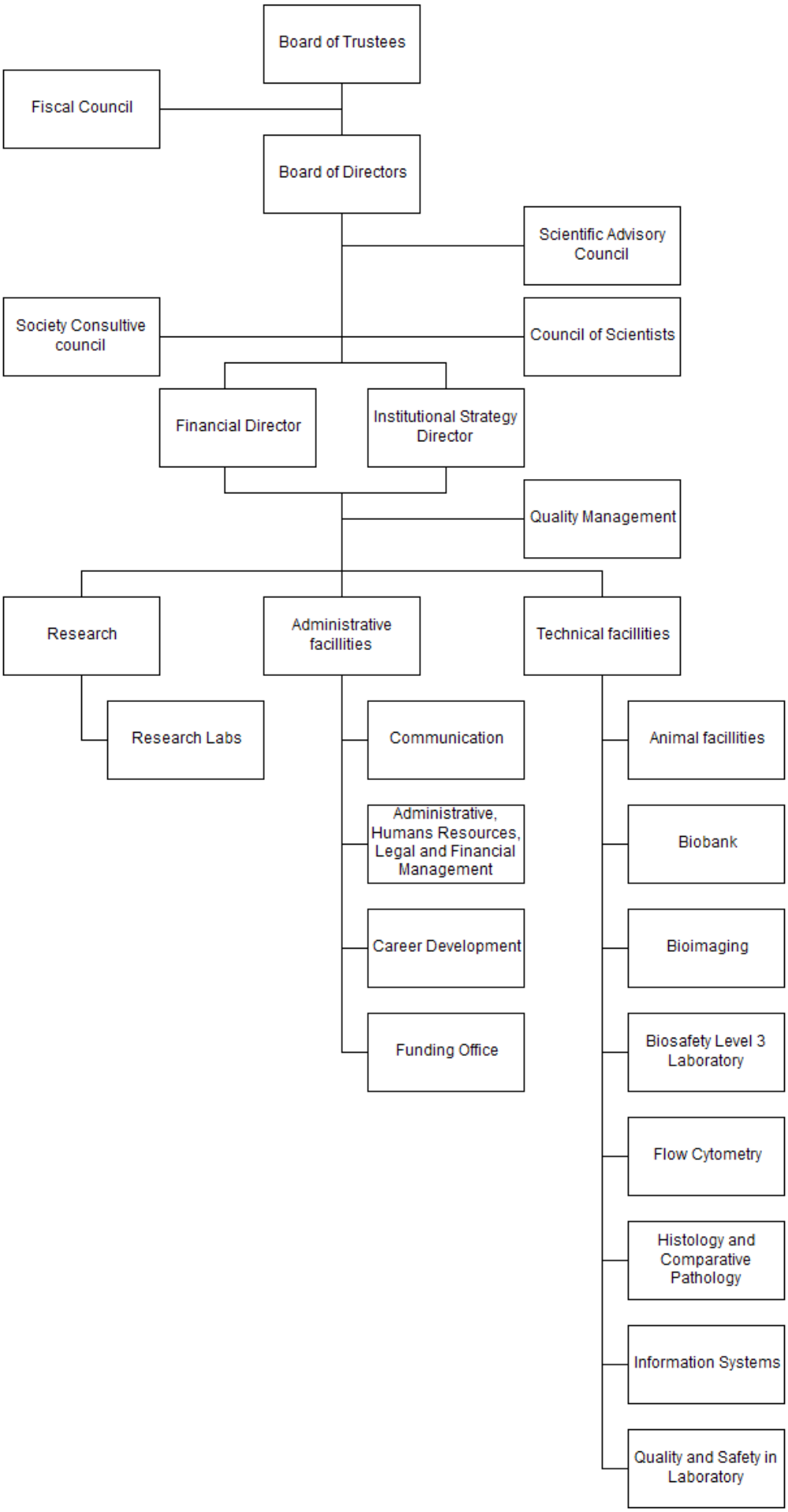
Caetano Reis e Sousa

PhD – Francis Crick Institute, London, United Kingdom

Paul Peter Tak

MD, PhD – University of Amsterdam, Netherlands

Organigram


Board of Trustees
Fiscal Council
Board of Directors
Scientific Advisory Council
Society Consultive council
Council of Scientists
Financial Director
Institutional Strategy Director
Quality Management
Research
Administrative facillities
Technical facillities
Research Labs
Communication
Administrative, Humans Resources, Legal and Financial Management
Career Development
Funding Office
Animal facillities
Biobank
Bioimaging
Biosafety Level 3 Laboratory
Flow Cytometry
Histology and Comparative Pathology
Information Systems
Quality and Safety in Laboratory

Evaluation Reports 2016

2013 Evaluation of FCT Research and Development Labs

Period of Evaluation:

2008 – 2012: Scientific and technological activities (performance indicators);

2015 – 2020: Research strategies and planned work for the next six years (2015-2020), consolidated as a strategic programme.

Evaluation Panel:

Panel 3: Health and Life Sciences.

Final Classification: Excellent.

Panel's overall comments (Stage 2):

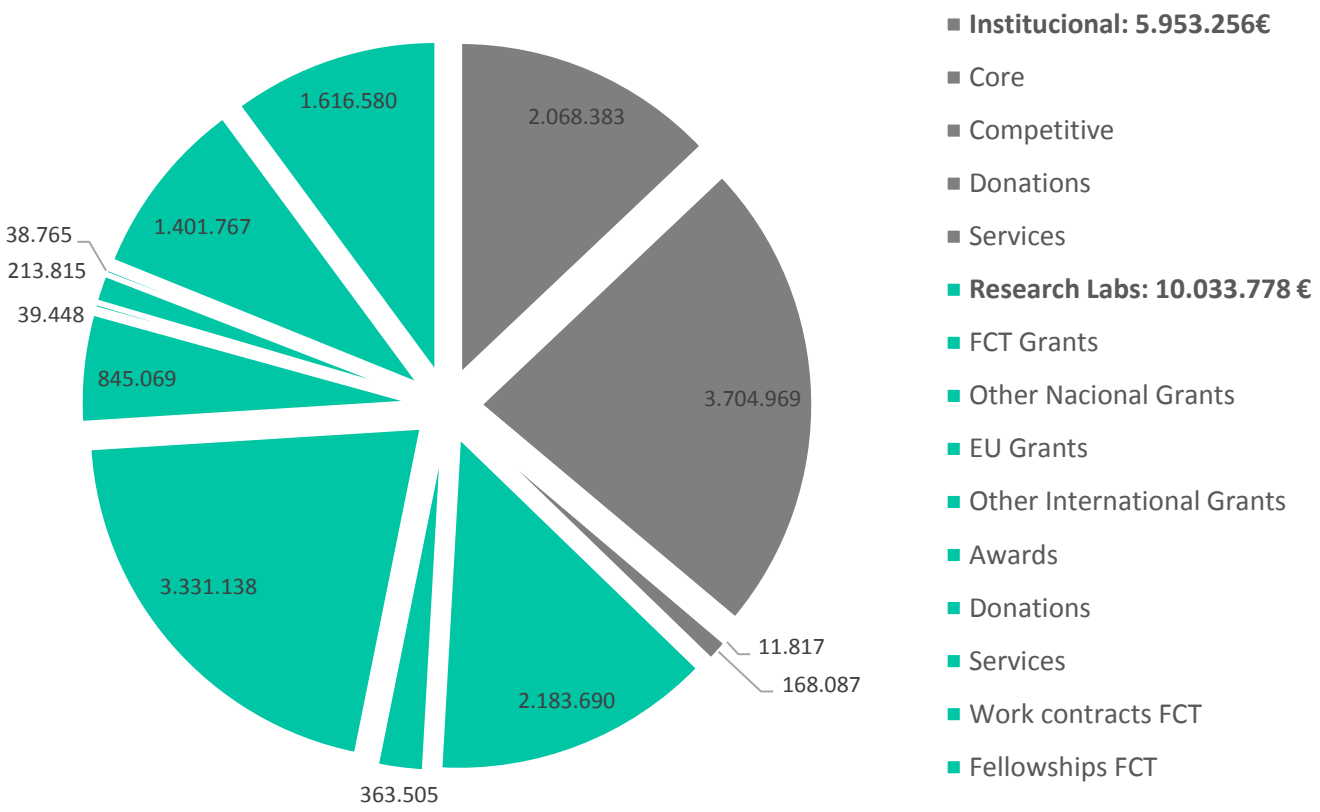
The site visit confirmed to a large extent the conclusions of the initial assessment that the unit has an excellent overall standing. It pointed out to some insufficiencies in the scientific output of a significant fraction of the integrated members listed in the initial application, and in the intensity of technology transfer that were openly discussed with both the unit leaders and the active group of students and postdocs. The site visit team recommended (i) a redefinition of the role of the less productive integrated members in research, teaching or management tasks that should lead to a reduction in the number of integrated members and independent groups; (ii) increased efforts in securing substantial financial resources through contracts with industry. It was satisfied with the clarification of the novel management and governance processes that have been established and praised Prof Maria Carmo-Fonseca, the Principal Investigator of the proposal and the Executive Director of iMM Lisboa since 2002, to have promoted Dr. Maria Mota as the unit Director. Prof Maria Carmo-Fonseca now serves as iMM Lisboa President in an oversight role with veto power on strategic decisions, and a focus on international development. Dra. Maria Mota is supported on her role as Executive Director by two Vice Directors, Dr. Henrique Veiga-Fernandes and Bruno Silva-Santos, and an experienced Finance Director, Mrs. Margarida Pinto-Gago. In order to achieve this in a transition period of reorganization of its staff dedicated to research and a context of potential shortage of public funding, the new iMM Lisboa

Board of Directors will require strong financial and managerial support from the University of Lisbon and the Faculty of Medicine. The Panel considered that the proposed strategic programme provides a solid basis for the future development of the unit in the next period, and that the budget requested was adequate, but recommended that the full executive power should be endowed to the coordinator during her term for its implementation, while the former director and President takes charge of international cooperation.

Research Funding

Expenditure in 2016 by Funding Source

Total Expenditure: **15.987.034€**



2016 Expenditure

			(EUROS)
INSTITUTIONAL	Core	2.068.383	
	Competitive	3.704.969	
	Donations	11.817	
	Services	168.087	**5.953.256**
RESEARCH LABS	FCT Grants	2.183.690	

	Other Nacional Grants	363.505	
	EU Grants	3.331.138	
	Other International Grants	845.069	
	Awards	39.448	
	Donations	213.815	
	Services	38.765	
	Work contracts FCT	1.401.767	
	Fellowships FCT	1.616.580	**10.033.778**
TOTAL			**15.987.034**

Number of Ongoing Research Grants in 2016

213 Research Grants:

Public National FCT: **76**

Public Other National: **8**

Public Other International: **5**

Public European Commission: **25**

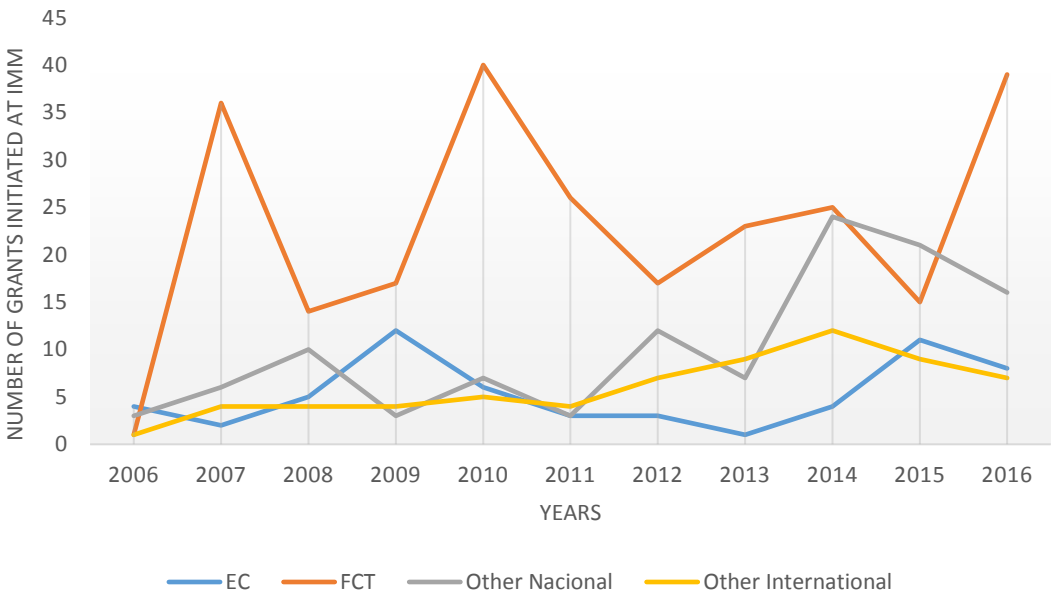
Private National: **71**

Of which with the industry – **53**

Private International: **28**

Of which with the industry – **10**

Number of Research Grants Initiated at iMM from 2003 to 2016



Research Funding Initiated in 2016

Research Grants (70):

FCT: **39**

European Commission: 8

Other National: 16

Other International: 7

Projects

AGENCY	RESEARCHER	iMM BUDGET
Comissão Europeia	Edgar Gomes	789.658,70
Comissão Europeia	Maria Mota	893.500,00
Comissão Europeia	Ana Sebastião	525.437,50
Comissão Europeia	João Seixas	160.635,60
Comissão Europeia	Edgar Gomes	150.000,00
Comissão Europeia	Maria Mota	150.000,00
Comissão Europeia	Cláudio Franco	1.618.750,00
Comissão Europeia	Vanessa Morais	1.300.000,00
Comissão Diretiva do Programa Operacional Regional de Lisboa e pela Fundação para a Ciência e a Tecnologia	Maria Carmo Fonseca	1.199.140,10
EMBO	Vanessa Morais	150.000,00
EMBO	Claus Azzalin	150.000,00
Fundação para a Ciência e a Tecnologia	António Mendes	197.648,00
Fundação para a Ciência e a Tecnologia	Joana Coelho	195.035,00
Fundação para a Ciência e a Tecnologia	Luísa Figueiredo	165.079,00
Fundação para a Ciência e a Tecnologia	Filomena Carvalho	185.048,00
Fundação para a Ciência e a Tecnologia	Ana Sebastião	189.900,00
Fundação para a Ciência e a Tecnologia	Nuno Santos	197.920,96
Fundação para a Ciência e a Tecnologia	João Rodrigues	94.106,00
Fundação para a Ciência e a Tecnologia	Leonor Saúde	186.228,00
Fundação para a Ciência e a Tecnologia	Maria Mota	200.000,00
Fundação para a Ciência e a Tecnologia	José Melo Cristino	179.000,00
Fundação para a Ciência e a Tecnologia	Vanessa Oliveira Martins	162.488,00
Fundação para a Ciência e a Tecnologia	Vera Neves	140.090,00
Fundação para a Ciência e a Tecnologia	Ana Verdelho	199.588,00
Fundação para a Ciência e a Tecnologia	Maria Carmo Fonseca	200.000,00
Fundação para a Ciência e a Tecnologia	Pedro Simas	199.998,00
Fundação para a Ciência e a Tecnologia	Maria Carmo Fonseca	98.888,00
Fundação para a Ciência e a Tecnologia	Bruno Jesus	188.175,00
Fundação para a Ciência e a Tecnologia	Simão Rocha	157.880,00
Fundação para a Ciência e a Tecnologia	Gonçalo Bernardes	20.001,00
Fundação para a Ciência e a Tecnologia	Ana Salomé Veiga	143.133,00
Fundação para a Ciência e a Tecnologia	Luísa Vaqueiro Lopes	51.000,00
Fundação para a Ciência e a Tecnologia	Diana Gaspar	187.151,00
Fundação para a Ciência e a Tecnologia	Anita Raquel Gomes	172.334,00

Fundação para a Ciência e a Tecnologia	Sérgio Almeida	199.944,00
Fundação para a Ciência e a Tecnologia	Bruno Silva Santos	166.389,00
Fundação para a Ciência e a Tecnologia	Luísa Figueiredo	186.946,00
Fundação para a Ciência e a Tecnologia	Henrique Veiga Fernandes	200.000,00
Fundação para a Ciência e a Tecnologia	João Eurico Fonseca	22.000,00
Fundação para a Ciência e a Tecnologia	Sílvia Almeida	199.971,00
Fundação para a Ciência e a Tecnologia	Vera Neves	12.000,00
Fundação para a Ciência e a Tecnologia	Vera Neves	19.800,00
Fundação para a Ciência e a Tecnologia	Mamede Alves Carvalho	48.791,00
Fundação para a Ciência e a Tecnologia	Nuno Morais	70.408,00
Fundação para a Ciência e a Tecnologia	João Carriço	61.572,00
Fundação para a Ciência e a Tecnologia	Ana Sebastião	19.800,00
Fundação para a Ciência e a Tecnologia	João Barata	199.778,00
Fundação para a Ciência e a Tecnologia	Gonçalo Bernardes	142.300,00
Fundação para a Ciência e a Tecnologia	Ana Sebastião	25.000,00
INFARMED	Julie Ribot	90.000,00
INFARMED	Catarina Fonseca	80.000,00
Institut Mérieux	Maria Mota	100.000,00
SWISS NATIONAL FOUNDATION	Claus Azzalin	200.000,00

Protocols, Donations & Awards

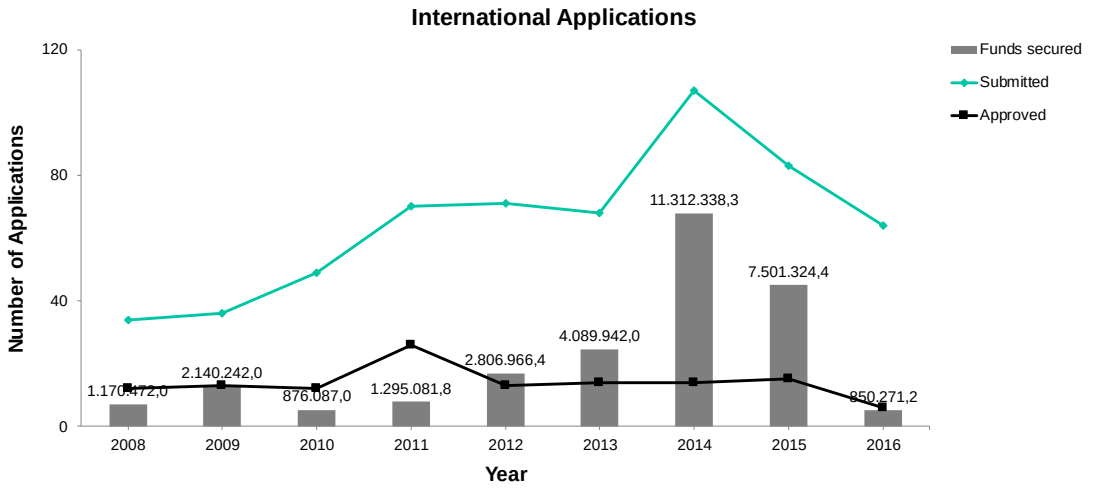
AGENCY	RESEARCHER	iMM BUDGET
Associação Laço	Sérgio Dias	38.500,00
Celgene	Maria Carmo Fonseca	2.000,00
Celgene	Luís Costa	6.700,00
Elsevier	Vanessa Morais	7.500,00
EMBO	Luísa Figueiredo	9.200,00
Fundação Astrazeneca	Nuno Morais	5.000,00
Fundação Millennium BCP	Cláudia Faria	90.000,00
Gilead	Helena Cabaço	30.000,00
Grupo de Estudos de Cancro Digestivo	Marta Sofia Martins	1.250,00
José Alberto Vasconcelos Tavares Moreira	Luís Costa	10.000,00
Liga Portuguesa Contra o Cancro	Luís Costa	15.000,00
Novartis Farma, S.A.; Roche Farmacêutica Química	Paulo Filipe	30.400,00
PATH	Miguel Prudêncio	27.427,00
Sociedade Portuguesa de Oftalmologia	João Eurico Fonseca	5.000,00
Sociedade Portuguesa Reumatologia	João Eurico Fonseca	3.000,00
Sociedade Portuguesa Reumatologia	João Eurico Fonseca	3.250,00
Sociedade Portuguesa Reumatologia	João Eurico Fonseca	10.000,00

Special Project

AGENCY	RESEARCHER	iMM BUDGET

Fundação para a Ciência e a Tecnologia	iMM	2.910.484,00

iMM Applications and Secured Competitive Funding



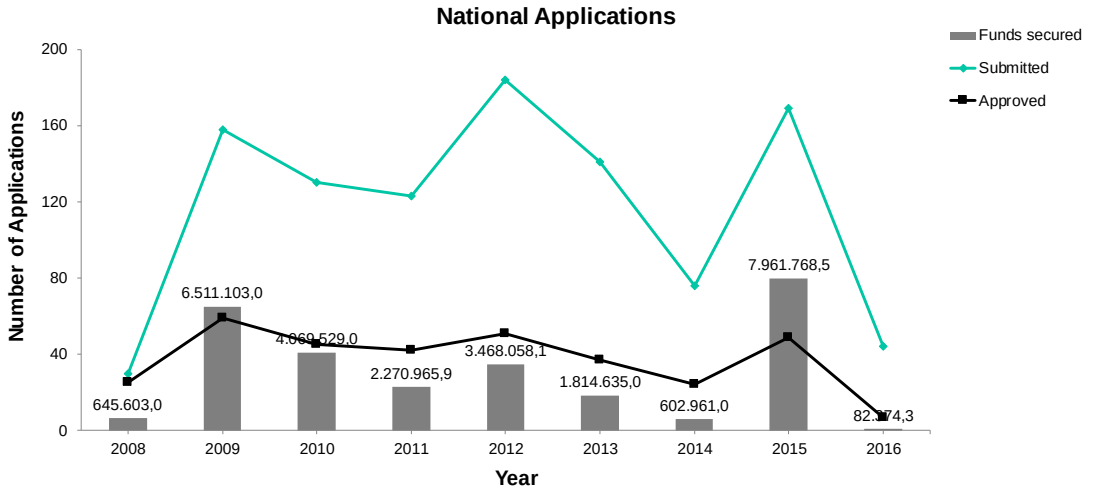


Figure 1. Submitted and approved applications, as well as total funds secured by iMM (in €) in international and national competitive funding schemes since 2008. The number of submitted applications corresponds to those effectively communicated to the Funding Office. Secured funds per year correspond to the sum of the iMM budget of the approved applications

submitted in the corresponding year (irrespectively to the project starting date). The number of approved applications for 2016 corresponds to those with known results as of February 2017.

Funding Sources of iMM Applications

In 2016, iMM researchers and staff have submitted grants to the following funding schemes:

INTERNATIONAL			
PRIVATE FUNDS	PUBLIC FUNDS		
AFM-Téléthon	Horizon 2020	Excellent Science	European Research Council - Consolidator Grant
Brain & Behavior Research Foundation			European Research Council - Advanced Grant
BrightFocus Foundation			Horizon 2020 – Future and Emerging Technologies
Citizens United for Research in Epilepsy (CURE)			Marie-Sklodowska-Curie Actions Individual Fellowships
Care for Rare Program			Marie-Sklodowska-Curie Actions Innovative Training Networks (ITN)
Dr. Josef Steiner Cancer Research Foundation			Marie-Sklodowska-Curie Actions Research and Innovation Staff Exchange (RISE)
Eli Lilly and Company – LIFA program		Industrial Leadership	Information and Communication Technologies
Howard Hughes Medical Institute		Societal Challenges	Health, demographic change and wellbeing
Institut Merieux			Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy
Michael J Fox Foundation	ERA-NETs		EuroNanoMed
Myotubular Trust			CVD
New York Stem Cell Foundation			Infect ERA

Pfizer Awards	National Institutes of Health - Research Project Grant Program
Susan G Komen Foundation	European and Developing Countries Clinical Trials Partnership
Swiss Bridge Foundation	European Cooperation in Science and Technology - COST
	Department of Defense (U.S. Army Medical Research)
	Human Frontier Science Program
	European Molecular Biology Organization (EMBO)

NATIONAL		
PRIVATE FUNDS	**PUBLIC FUNDS**	
BIAL Foundation	PORLisboa2020 Portugal 2020	01/SAICT/2016 - Infraestruturas de Investigação
Bluepharma Group | University of Coimbra-Bluepharma Innovation Award		02/SAICT/2016 - Projetos IC&DT em copromoçao
Crioestaminal | Associação Viver a Ciência		10/SI/2016 - Programas Mobilizadores
Fundação Amélia de Mello - Bolsa D. Manuel de Mello		17/SI/2015 - Proteção de direitos da propriedade industrial
Fundação Luso-Americana para o Desenvolvimento	Fundação para a Ciência e a Tecnologia – Bilateral Cooperation	
Janssen-Cilag Farmacêutica, Lda. - Prémio Janssen Inovação		
Liga Portuguesa Contra o Cancro		
L'Oréal Portugal | Comissão Nacional da UNESCO | Fundação para a Ciência e a Tecnologia - Medalhas de Honra L'Oréal Portugal para as Mulheres na Ciência		
Maratona da Saúde | FCT		
Prémios Científicos Universidade de Lisboa / Caixa Geral de Depósitos		
Prémio Rui Osório de Castro/Millennium BCP		
Santa Casa da Misericórdia de Lisboa - Mantero Belard Award		

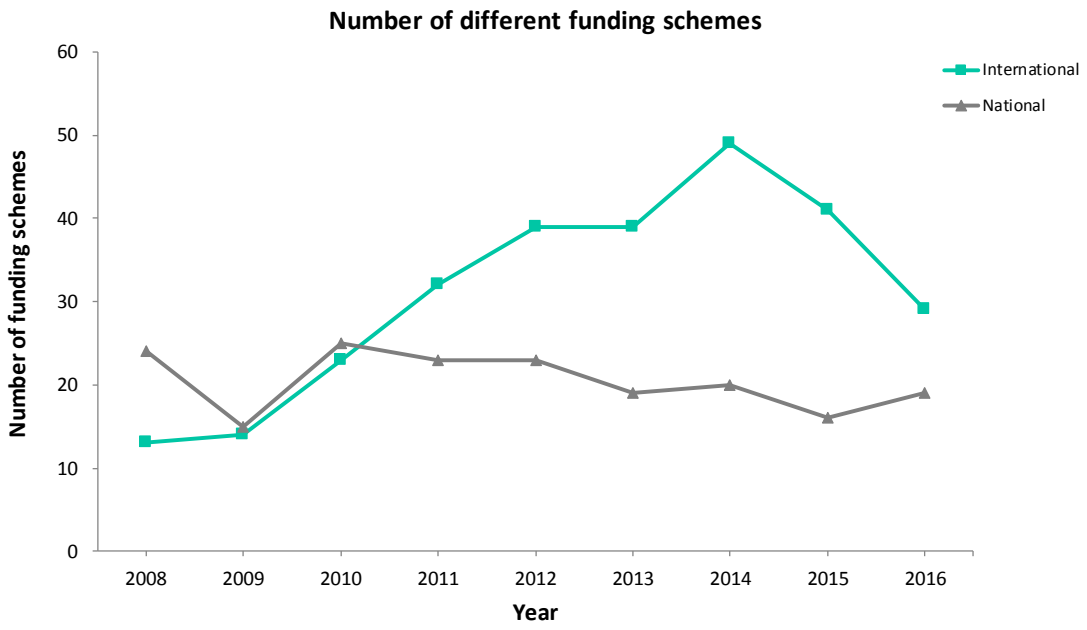


Figure 2. Evolution of the diversity of international and national funding schemes for which iMM researchers submitted applications from 2008 to 2016.

2016 iMM Activities Highlights

People 2016

		2015	2016
Researchers	PhD	195	200
	PhD Students	89	106
	MSc Students	94	63
	Master	84	86
	Graduate	54	51
	Other	20	9
		536	515
Technical Staff	PhD Staff	6	8
	Master	26	29
	Graduate	38	31
	Other	16	20
		86	88
Administrative Staff	PhD Staff	6	7
	Master	3	9
	Graduate	15	15
	Other	5	5
		29	36
	TOTAL	651	639

Selection of Prizes and Awards

ERC Proof of Concept
Edgar Gomes

ERC Proof of Concept
Maria M. Mota

Chem Soc Rev Emerging Investigator Lectureship 2016
Gonçalo Bernardes

Horizon 2020 Marie Curie Individual Fellowship
João Seixas

Medalha de Honra L'Oréal Portugal para as Mulheres na Ciência
Ana Catarina Fonseca

EMBO Member
Maria M. Mota

Harrison-Meldola Memorial Prize 2016
Gonçalo Bernardes

Prémios Científicos UL
Bruno Silva-Santos (Premiado)
Joaquim Ferreira (Menção Honrosa)
José Ferro (Menção Honrosa)
M. Carmo-Fonseca (Menção Honrosa)
Mário Ramirez (Menção Honrosa)

Prémio Pfizer Investigação Básica
Henrique Veiga Fernandes

Scientific Research Grant – Bial Foundation
Diana Prata

EMBO Installation Grant
Claus Azzalin

Fundo iMM-Laço: A Caminho da Cura
Sérgio Dias (Translational Project)
Sandra Casimiro (Clinical Project)

The Forbes Norris Award
Mamede de Carvalho

LPCC/Pfizer Award
Inês Gomes

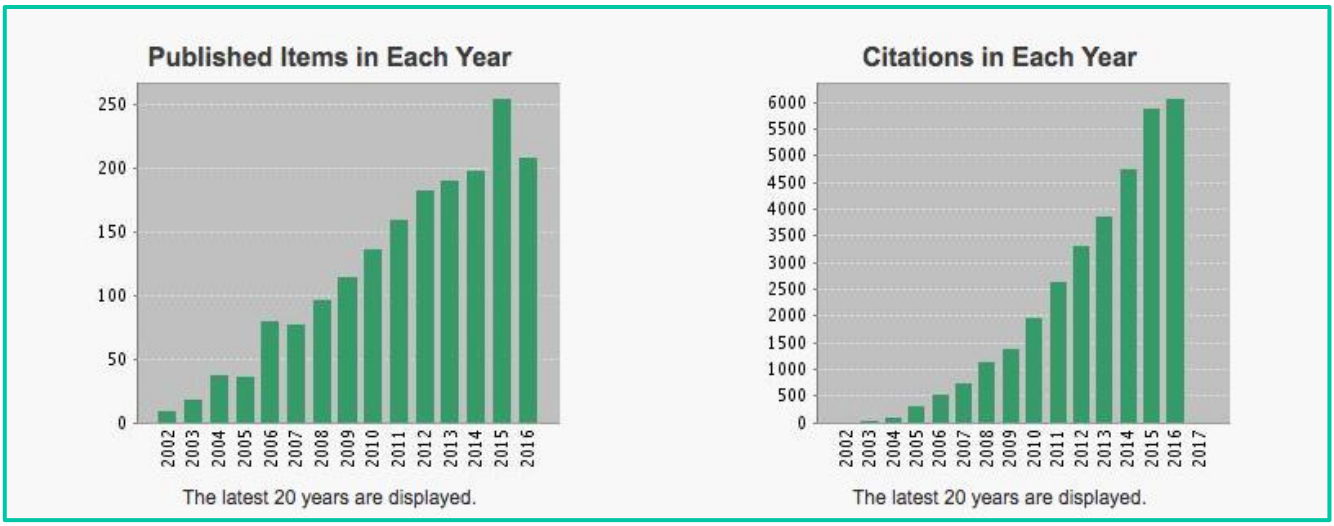
Productivity at a Glance

	2015	2016
Total Publications International Journals	232	208
Publications in Journals with Impact Factor > 10	11	28
Communications in Conferences – International	247	332
Communications in Conferences – National	243	226
Seminars and Invited Lectures	271	358
Organization of Conferences	243	74
Thesis PhD	14	16
Thesis Master	68	57
Prizes, Awards and Distinctions	72	96

iMM Publications in International Journals

Citation Report

(Source: Web of Science™)



208 papers in 2016;

1.802 papers since 2002;

Sum of the times cited: 32.839

Sum of the times cited in 2016: 234

Average citations per item: 18.22

h-index: 76

Query: AD=(Inst Med Molec SAME Portugal) OR AD=(Mol Med Inst SAME Portugal) OR AD=(Inst Mol Med SAME Portugal)

Refined by: (excluding) Document Type = (REVIEW OR EDITORIAL OR CORRECTION OR ABSTRACT OR MEETING OR BOOK)

All Databases

Note: This data is based on the information available on the Web of Science; hence it is not an exhaustive analysis of iMM publications.

10 Most Cited Articles 2002-2016

Healy, Daniel G.; Falchi, Mario; O'Sullivan, Sean S.; et al. (2008), Phenotype, genotype, and worldwide genetic penetrance of LRRK2-associated Parkinson's disease: a case-control study. LANCET NEUROLOGY. **7** (7) 583-590 (Citation: 491) (Journal Impact Factor: 23.468).

Henry, David H.; Costa, Luís; Goldwasser, Francois; et al. (2011), Randomized, Double-Blind Study of Denosumab Versus Zoledronic Acid in the Treatment of Bone Metastases in Patients with Advanced Cancer (Excluding Breast and Prostate Cancer) or Multiple Myeloma. JOURNAL OF CLINICAL ONCOLOGY. **29** (9) 1125-1132 (Citation: 388) (Journal Impact Factor: 20.982).

Ratziu, Vlad; Bellentani, Stefano; Cortez-Pinto, Helena; et al. (2010), A position statement on NAFLD/NASH based on the EASL 2009 special conference. JOURNAL OF HEPATOLOGY. **53** (2) 372-384 (Citation: 360) (Journal Impact Factor: 10.59).

Ostrowski, Matias; Carmo, Nuno B.; Krumeich, Sophie; et al. (2010), Rab27a and Rab27b control different steps of the exosome secretion pathway. NATURE CELL BIOLOGY. **12** (1) 19-30 (Citation: 343) (Journal Impact Factor: 18.699).

Sousa, AE; Carneiro, J; Meier-Schellersheim, M; et al. (2002), CD4 T cell depletion is linked directly to immune activation in the pathogenesis of HIV-1 and HIV-2 but only indirectly to the viral load. JOURNAL OF IMMUNOLOGY. **169** (6) 3400-3406 (Citation: 319) (Journal Impact Factor: 4.985).

Duarte, A; Hirashima, M; Benedito, R; et al. (2004), Dosage-sensitive requirement for mouse D114 in artery development. GENES & DEVELOPMENT. **18** (20) 2474-2478 (Citation: 303) (Journal Impact Factor: 10.042).

Hansen, Christian; Angot, Elodie; Bergstrom, Ann-Louise; et al. (2011), alpha-Synuclein propagates from mouse brain to grafted dopaminergic neurons and seeds aggregation in cultured human cells. JOURNAL OF CLINICAL INVESTIGATION. **121** (2) 715-725 (Citation: 300) (Journal Impact Factor: 12.575).

Di Fonzo, A.; Rohe, CF; Ferreira, RJ; et al. (2005), A frequent LRRK2 gene mutation associated with autosomal dominant Parkinson's disease. LANCET. **365** (9457) 412-415 (Citation: 295) (Journal Impact Factor: 44.002).

Pamplona, Ana; Ferreira, Ana; Balla, Jozsef; et al. (2007), Heme oxygenase-1 and carbon monoxide suppress the pathogenesis of experimental cerebral malaria. NATURE MEDICINE. **13** (6) 703-710 (Citation:270) (Journal Impact Factor: 30.357).

Santos, NC; Figueira-Coelho, J; Martins-Silva, J; et al. (2003), Multidisciplinary utilization of dimethyl sulfoxide: Pharmacological, cellular, and molecular aspects. BIOCHEMICAL PHARMACOLOGY. **65** (7) 1035-1041 (Citation: 266) (Journal Impact Factor: 5.091).

Most Relevant Papers 2016 (Journal Impact Factor >10)

Chorny, Alejo; Casas-Recasens, Sandra; Sintes, Jordi; et al. (2016), The soluble pattern recognition receptor PTX3 links humoral innate and adaptive immune responses by helping marginal zone B cells. JOURNAL OF EXPERIMENTAL MEDICINE (**Journal Impact Factor:** 11.24).

Bernardim, Bárbara; Cal, Pedro M. S. D.; Matos, Maria J.; et al. (2016), Stoichiometric and irreversible cysteine-selective protein modification using carbonyl acrylic reagents. NATURE COMMUNICATIONS (**Journal Impact Factor:** 11.329).

Nóbrega-Pereira, Sandrina; Fernandez-Marcos, Pablo J.; Brioche, Thomas; et al. (2016), G6PD protects from oxidative damage and improves healthspan in mice. NATURE COMMUNICATIONS (**Journal Impact Factor:** 11.329).

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Seminars & Workshops

Computational Biology and Bioinformatics Seminar

07th January 2016

"The Bioinformatics of Alternative Splicing in Parkinson's Disease"

Maria Bordone, PhD Student – Nuno Morais Laboratory

21st January 2016

"RNA-seq uncovers the endogenous circadian clock of Trypanosoma brucei"

Daniel Neves, Master Student – Luísa Figueiredo Laboratory

04th February 2016

"Visual Analytics Tools in Bioinformatics"

José Caldas – Insightomics

03rd March 2016

"Depicting epigenetic mechanisms involved in the regulation of pseudogene expression"

Ana Margarida Ferreira, Master Student – Sérgio de Almeida Laboratory

17th March 2016

"An alternative tool to look at splicing"

Nuno Agostinho, Master Student – Nuno Morais Laboratory

14th April 2016

José Leal – Instituto Gulbenkian de Ciência/Ophiomics

28th April 2016

"Understanding public structural biology data: databases and resources"

Francisco Enguita, PhD – iMM Lisboa

12th May 2016

"Fast intron splicing is coupled to polymerase pausing in co-transcriptionally spliced human genes"

Kenny Rebelo, Master Student – M. Carmo-Fonseca Laboratory

09th June 2016

"Pangenome comparison between Streptococcus dysgalactiae subs. equisimilis isolates from clinical and zoonotic sources"

Catarina Mendes, Master Student – Mário Ramirez Laboratory

23rd June 2016

"Predicting aberrant recombination events in T-cell precursors using genetic and epigenetic data"

Daniel Sobral, PhD – Bioinformatics Unit Instituto Gulbenkian de Ciência

07th July 2016

"Global impact of RNA Polymerase II CTD mutations on splicing"

Ana Rita Ferreira, Master Student – M. Carmo-Fonseca Laboratory

21st July 2016

"Chemotranscriptomics: profiling gene expression signatures for molecular descriptors of toxic active compounds"

Juan Carlos Gomez-Verjan, PhD Student – Nuno Morais Laboratory

28th July 2016

Anna Goldenberg, PhD – SickKids Research Institute, University of Toronto

15th September 2016

"Genomewide profiling of alternative splicing in aging across human tissues"

Carolina Leote, Master Student – Nuno Morais Laboratory

29th September 2016

"PHYLOViZ Online: web-based tool for visualization, phylogenetic inference, analysis and sharing of minimum spanning trees"

Bruno Gonçalves, PhD Student – Mário Ramirez Laboratory

13th October 2016

"Towards a privacy-preserving environment for genomic data analysis"

Francisco Couto – Faculdade de Ciências da Universidade de Lisboa

27th October 2016

"Population history, population structure and genomics"

Lounès Chikhi – Instituto Gulbenkian de Ciência

10th November 2016

"Alternative splicing during neuronal development"

Mariana Ferreira – Nuno Morais Laboratory

24th November 2016

"Using mathematics to understand infection dynamics and antibiotic treatment"

Erida Gjini – Instituto Gulbenkian de Ciência

22nd December 2016

"Lessons from Escherichia coli about evolution in the mammalian intestine"

Isabel Gordo, PhD – Instituto Gulbenkian de Ciência

Immunology Club

17th March 2016

"Macrophages in HIV-infected conditions and emergence of bacterial co-infections"

Florence Niedergang, PhD – Institut Cochin, Paris

Host: Ana Espada Sousa Laboratory

20th April 2016

"Tfh and Tfr in human protective immunity and disease"

Válter Fonseca, MD, PhD Student – Luís Graça Laboratory

04th May 2016

"Regulation of B cell responses by Rho GTPases"

Marianne Burbage, PhD – The Francis Crick Institute, London

Host: Bruno-Silva Santos Laboratory

15th June 2016

"Generation and detailed characterisation of fully human antibody specific to the interleukin-7 receptor, a potential target for T-cell Acute Lymphoblastic Leukemia"

Padma Akkapeddi, PhD Student – João Barata Laboratory

29th June 2016

"Analyzing the effects of early arthritis in systemic bone loss"

Bruno Vidal, PhD Student – João Eurico-Fonseca Laboratory

13th July 2016

"Development of methodologies to recruit and expand regulatory T cells (Treg) in vitro for subsequent clinical translation"

Joana Bianchi, PhD Student – João Lacerda Laboratory

12th October 2016

"Control of innate lymphoid cells by circadian clock signals"

Cristina Godinho-Silva, Post-Doc – Henrique Veiga-Fernandes Laboratory

26th October 2016

"Expression and modulation of human endogenous retroviruses in developing and mature T cells"

Helena Cabaço, Post-Doc – Ana Espada Sousa Laboratory

23rd November 2016

"Innate signals drive peripheral generation of IL-17-producing γδ T cells in experimental autoimmune encephalomyelitis"

Pedro Papotto – Bruno Silva-Santos Laboratory

07th December 2016

"Dissecting the Cellular and Molecular Mechanisms of IL-7-mediated Leukemia T- cell Survival, Proliferation and Cell Growth"

Daniel Ribeiro, PhD Student – João Barata Laboratory

Internal Seminar

13th January 2016

"Neuromodulatory Systems in Neuropsychiatric Disorders"

Tiago Vaz Maia, PhD – Mamede de Carvalho Laboratory

27th January 2016

"Landscapes of neuro-immune regulators"

Henrique Veiga-Fernandes, Head of Laboratory

24th February 2016

"Thymus, liver, brain: T-cell tales on development, malaria and learning"

Bruno Silva-Santos, Head of Laboratory

09th March 2016

"Lessons of tolerance"

Luís Graça, Head of Laboratory

23rd March 2016

"Nutrient sensing modulates malaria parasite virulence"

Maria M. Mota, Head of Laboratory

06th April 2016

BIG - Results After 1 Year

Sérgio de Almeida, Head of Laboratory

João Barata, Head of Laboratory

Cláudio Franco, Head of Laboratory

Luísa Lopes, Head of Laboratory

20th April 2016

"Fundamentals of gene expression"

M. Carmo-Fonseca, President and Head of Laboratory

04th May 2016

"The formation of spatial maps during choice behavior"

Miguel Remondes, Head of Laboratory

01st June 2016

"Twists and turns of signaling in leukemia cells"

João Taborda Barata, Head of Laboratory

15th June 2016

"From neuroprotection to neuroregeneration: turning a natural neuropeptide into a drug"

Miguel Castanho, Head of Laboratory

29th June 2016

"From China and big pharma up to animal models and human samples"

João Eurico-Fonseca, Head of Laboratory

13th July 2016

"Regulatory T cells in Hematopoietic Stem Cell Transplantation"

João Lacerda, Head of Laboratory

27th July 2016

"Trophic actions of neuromodulators"

Ana Sebastião, Head of Laboratory

21st July 2016

"Atomic Force Microscopy as a nanotool to evaluate cardiovascular patients"

Nuno Santos, Head of Laboratory

28th September 2016

"Bioorthogonal chemistry for synthetic biology"

Gonçalo Bernardes, Head of Laboratory

19th October 2016

"Men, horses and streptococci - a case of dangerous liaisons?"

Mário Ramirez, Head of Laboratory

16th November 2016

Luís Costa, Head of Laboratory

30th November 2016

"Entering Phase I Clinical Trials with a New Malaria Vaccine Candidate"

Miguel Prudêncio, Head of Laboratory

Monday Lectures

04th January 2016

"Mitochondrial function regulates nucleotide metabolism and affects genomic stability: implications for human disease and aging"

Lene Juel Rasmussen, PhD – University of Copenhagen

11th January 2016

"Intestinal stem cells in homeostasis, inflammation and cancer: a matter of niche"

Riccardo Fodde, PhD – Erasmus Medical Center, Rotterdam

18th January 2016

"Signaling in time and space"

Norbert Perrimon, PhD – Harvard University, USA

25th January 2016

"Molecular basis for paramyxovirus entry"

Anne Moscona, M.D – Weill Medical College of Cornell University, New York

01st February 2016

"CD8-CD4 help in T cell responses"

Benedita Rocha, M.D, PhD – Institut National de la Santé et de la Recherche Médicale

Host: Luís Graça

08th February 2016

"Adventures in metabolomics: Delineating energy metabolism in apicomplexan parasites"

James MacRae, PhD – The Francis Crick Institute, USA

Host: João Rodrigues

15th February 2016

"Synaptic integration in circuits controlling instinctive behaviors"

Tiago Branco, PhD – MRC Lab Molecular Biology, United Kingdom

Host: Miguel Remondes

22nd February 2016

"How many diseases in GVHD"

Ronjon Chakraverty, PhD – Institute of Immunity and Transplantation and Cancer Institute UCL, United Kingdom

29th February 2016

"Transcriptional and epigenetic basis of regulatory T cell development"

Shimon Sakaguchi, M.D, PhD – Osaka University, Japan

Host: Luís Graça

07th March 2016

"Human genetic variation in antifungal immunity and inflammation"

Agostinho Carvalho, PhD – Universidade do Minho

Host: Nuno Morais

14th March 2016

"Epigenetics in the molecular basis of rheumatic diseases"

Steffen Gay, MD/PhD – Center of Experimental Rheumatology, University Hospital Zurich

Host: João Eurico-Fonseca

21st March 2016

"Role of vascular basement membrane in diabetic retinopathy"

Sayon Roy, PhD – Boston University School of Medicine, Boston

Host: Carlota Saldanha

04th April 2016

"The challenge of brain metastasis"

Manuel Valiente, DVM/PhD – Brain Metastasis Group, Centro Nacional de Investigaciones Oncológicas, Madrid

Host: Sandrina Pereira

18th April 2016

"Clathrin-independent endocytosis and retrograde transport in cell polarity and persistent cell migration"

Ludger Johannes, PhD – Institut Curie, France

Host: Gonçalo Bernardes

02nd May 2016

"Circuit analysis and novel therapies in Neurodevelopmental Disorders"

Michela Fagiolini, PhD – Assistant Professor of Neurology, Boston Children's Hospital, Boston

Host: Miguel Remondes

09th May 2016

"Inside Nature Publishing Group"

Cláudio Nunes-Alves, PhD – Senior Editor at Nature Reviews Microbiology

Host: Nuno Santos

16th May 2016

"Imaging and modeling approaches for the nucleus and beyond"

Christophe Zimmer, PhD – Institut Pasteur, France

Host: Miguel Castanho

23rd May 2016

"Proteome remodelling by highly conserved microexons in the vertebrate brain"

Manuel Irimia, PhD – Centre for Genomic Regulation, Spain

Host: Ana Rita Grosso

30th May 2016

"Biomechanics of tissue morphogenesis"

Thomas Lecuit, PhD – Institut de Biologie du Développement de Marseille

Host: Cláudio Franco

06th June 2016

"Dynamic rules underlying epilepsy"

Christophe Bernard, PhD – Institut de Neurosciences des Systèmes, France

Host: Luísa Lopes

20th June 2016

"Human T Follicular Helper Cells in Health and Disease"

Hideki Ueno, MD, PhD – Baylor Institute for Immunology Research, USA

Host: Luís Graça

27th June 2016

"Protection and immune responses in the Controlled Human Malaria Infection model"

Robert Sauerwein, PhD – Radboud University Medical Center, Netherlands

Host: Miguel Prudêncio

04th July 2016

"Motile cilia define left and right"

Susana Lopes, PhD – CEDOC, Chronic Diseases Faculdade de Ciências Médicas, Universidade Nova de Lisboa

Host: Leonor Saúde

11th July 2016

"Forces during muscle building"

Frank Schnorrer, PhD – Max-Planck-Institut für Biochemie

Host: Edgar Gomes

18th July 2016

"Mechanisms in vascular patterning – a tale of fate and forces"

Holger Gerhardt, PhD – Max-Delbrück-Centrum für Molekulare Medizin, Berlin

Host: Cláudio Franco

05th September 2016

"Chemistry and materials for biochemistry and human health"

Justin Chalker, PhD – School of Chemical and Physical Sciences, Flinders University, South Australia

Host: Gonçalo Bernardes

12th September 2016

"Regulating the cellular composition of our bodies using fitness fingerprints"

Eduardo Moreno, PhD – Fundação Champalimaud

Host: Domingos Henriques

19th September 2016

"Fishing for mechanisms of progression and relapse in pediatric cancer"

David Langenau, PhD – Massachusetts General Hospital, Harvard Medical School

Host: João Barata

26th September 2016

"Experimental Medicine models for drug development using FMRI"

Mitul Mehta, PhD – Institute of Psychiatry, Psychology & Neuroscience, King's College London

Host: Diana Prata

03rd October 2016

"Chromatin-based epigenetic memory: the curious case of the centromere"

Lars Jansen, PhD – Instituto Gulbenkian de Ciência

Host: Domingos Henrique

10th October 2016

"Pathobiology of Rheumatoid Arthritis: Towards a Molecular Definition and Precision Medicine"

Costantino Pitzalis, MD, PhD – William Harvey Research Institute, Barts and the London Queen Mary University of London

Host: João Fonseca

24th October 2016

"Molecular mechanisms of blood vessel maturation and maintenance"

Hellmut Augustin, PhD – German Cancer Research Center

07th November 2016

"How neurons get their shape: regulation of synaptic growth by RalGTPase"

Rita Teodoro, PhD – CEDOC, Chronic Diseases

14th November 2016

"Metabolic control of vertebrate segmentation"

Olivier Pourquie, PhD – Harvard Medical School, Department of Genetics

Host: Domingues Henriques

21st November 2016

"Dynamic control of gene expression by nucleotide modifications in mRNA and lncRNA"

Samie Jaffrey, MD, PhD – Weill Medical College, Cornell University, USA

Host: Luísa Figueiredo

28th November 2016

"Regulation of synapse assembly through local protein dynamics"

Ramiro Almeida, PhD – Center for Neuroscience and Cell Biology and School of Health, Polytechnic of Porto

Host: Leonor Saúde

05th December 2016

"Production and maintenance of an unusual cell surface coat. It's not that unusual!"

Markus Engstler, PhD – Theodor-Boveri-Institute, Biocenter University of Wuerzburg, Germany

Host: Luísa Figueiredo

12th December 2016

"Understanding muscle stem cell regenerative decline with aging"

Pura Muñoz-Cánoves, PhD – Pompeu Fabra University, ICREA and CNIC, Spain

Host: Leonor Saúde

Neurosciences Seminar

04th January 2016

"Probing the synaptic target of a new putative antiepileptic drug: modulation of the excitatory transmission in the hippocampus"

Cátia Domingos, Master Student – Ana Sebastião Laboratory

11th January 2016

"Classification of neuropsychiatric disorders based on brain connectivity patterns"

Hugo Ferreira – Faculdade de Ciências da Universidade de Lisboa

18th January 2016

"Neuromodulation of Neural Networks Controlling Mammalian Locomotion"

Filipe Nascimento – University of St Andrews, United Kingdom

25th January 2016

"Neuroprotective action of a Kyotorphin derivative in an animal model of Alzheimer's disease"

Margarida Martins, Master Student – Ana Sebastião Laboratory and Miguel Castanho Laboratory

22nd February 2016

"Dynamics of memory"

Ana Luísa Raposo – Ana Sebastião Laboratory and Miguel Castanho Laboratory

29th February 2016

"The NLRP3 Inflammasome as a potential therapeutic target for the treatment of epilepsy"

Nuno Rosa, Master Student – Ana Sebastião Laboratory

07th March 2016

"New potential therapy for multiple sclerosis: a role for adenosine A2A receptors"

Cláudia Afonso, Master Student – Ana Sebastião Laboratory

14th March 2016

"BioPrint: Biosignals as Health, Emotion and Identity Markers"

Ana Fred, PhD – Instituto de Telecomunicações, Instituto Superior Técnico

21st March 2016

"Role of SNARE-dependent gliotransmitter release by astrocytes in the modulation of synaptic plasticity by BDNF"

João Jesus, Master Student – Ana Sebastião Laboratory

04th April 2016

"When proteins misfold in the brain: the molecular and chemical biology of neurodegeneration"

Cláudio M. Gomes – Faculdade de Ciências da Universidade de Lisboa

11th April 2016

"Social Simulation with Agent-Based Modelling"

Professor Hélder Coelho – Faculdade de Ciências da Universidade de Lisboa

18th April 2016

"How do we use production data to assess phonological development?"

Maria João Freitas – Faculdade de Letras da Universidade de Lisboa and Centro de Linguística da Universidade de Lisboa

Cristiane Lazzarotto-Volcão – Universidade Federal de Santa Catarina

02nd May 2016

"Contribution of different cellular subsets to the Adenosine A2A receptor overexpression in the rat brain"

Inês Morgado, Master Student – Luísa Lopes Laboratory

09th May 2016

"Autoimmune dysregulation and impaired brain function in adenosine deaminase deficiency (ADA-SCID)"

Biagio Di Lorenzo, PhD Student – Bruno Silva-Santos Laboratory

16th May 2016

"Chronic Cannabinoid Exposure May Produce a Depression Pattern in Adolescent Mice"

Afonso André, Master Student – Ana Sebastião Laboratory

23rd May 2016

"From the characterization of adenosinergic system to a future therapeutic strategy in Rett Syndrome"

Catarina Lourenço, PhD Student – Ana Sebastião Laboratory

30th May 2016

"A novel assay to quantify mitochondrial dysfunction in human skeletal muscle - implications for the diagnosis and treatment of mitochondrial diseases"

Mariana Rocha, PhD – Welcome Trust Centre for Mitochondrial Research, Newcastle University

06th June 2016

"Mitochondria and Neurodegeneration: the role of PINK1 in Parkinson's Disease"

Vanessa Morais, Head of Laboratory

27th June 2016

"Primary Progressive Aphasia: Neuropsychological Analysis and Evolution"

Carolina Maruta, PhD – Laboratório de Estudos de Linguagem, Faculdade de Medicina, Universidade de Lisboa

04th July 2016

"How stressful was your Neuroscience Seminar presentation?"

Joana Coelho, PhD – Luísa Lopes Laboratory

11th July 2016

"Bipolar Disorder"

Amilcar Santos, PhD Student – Ana Sebastião Laboratory

18th July 2016

"Prolactin as a new model of neuroprotection against excitotoxicity"

Nadia Rivero Segura – Facultad de Química, Universidad Nacional Autónoma de México

25th July 2016

"Adenosine A2ARS: Hand-in-hand with CB1RS Mediating Memory Consolidation deficits"

Francisco Mouro, PhD Student – Ana Sebastião Laboratory

05th September 2016

"Neuronal adenosine a2a receptor overexpression shifts long-term depression in ca1/ca3 hippocampal synapses"

Mariana Ferreira, PhD Student – Luísa Lopes Laboratory

12th September 2016

"Searching for confidence in memory traces"

Thabèlò Mmamatseliso Khoboko, PhD Student – Miguel Remondes Laboratory

03rd October 2016

"Kyotorphin as new pharmacological therapeutic strategy for Alzheimer's Disease"

Rita Belo, PhD Student – Ana Sebastião Laboratory

10th October 2016

"Prion protein: a hostage of alpha-synuclein?"

Diana Ferreira, PhD Student – Luísa Lopes Laboratory

17th October 2016

"Active roles for glial cells of the mammalian spinal cord in health and disease"

Gareth Miles, PhD – School of Psychology and Neuroscience, University of St Andrews, United Kingdom

24th October 2016

"A journey to the land of explorers - Visiting IMM to learn new techniques"

Sanna Loppi – A.I. Virtanen Institute for Molecular Sciences, Finland

31st October 2016

"Guilt and the time of consciousness"

Maria Fernanda Palma – Faculdade de Direito, Instituto de Direito Penal e Ciências Criminais

07th November 2016

"Time coding in contextual memories"

Marcelo Dias, PhD Student – Miguel Remondes Laboratory

14th November 2016

"Meritocracy, implicit associations and socially critical decisions towards low status groups"

Rui Costa Lopes – Instituto de Ciências Sociais da Universidade de Lisboa

21st November 2016

"A quest to understand time perception in MCI patients"

Sara Coelho, PhD Student – José Ferro Laboratory

12th December 2016

"CB1R-CB2R: a cannabinoid two-level interaction controlling subventricular and hippocampal neurogenesis."

Rui Rodrigues, MSc – Ana Sebastião Laboratory

19th December 2016

"Seizure-induced motility of differentiated dentate granule cells is prevented by the central Reelin fragment"

Catarina Orcinha, PhD Student – University of Freiburg

Oncobiology Club

06th January 2016

"Target prediction for anticancer natural products"

Tiago Rodrigues – Gonçalo Bernardes Laboratory

20th January 2016

Mário Matos, Master Student – Luís Costa Laboratory

03rd February 2016

"The role of metabolic reprogramming and mitochondrial respiration in breast cancer aggressive phenotype induced by hypercholesterolemia"

Mafalda Ferro Teixeira

17th February 2016

"Dissecting the signaling mechanisms of IL-7-mediated autophagy regulation in T-cell acute lymphoblastic leukemia"

Daniel Ribeiro, PhD Student – João Barata Laboratory

02nd March 2016

"Adoptive T-cell therapy of cancer: a personal overview"

Bruno Silva-Santos, Head of Laboratory

16th March 2016

"Exploring the prognostic value of alternative splicing in gliomas"

Teresa Maia, Master Student – Nuno Morais Laboratory

30th March 2016

"Y-box binding protein 1 (YB-1) relevance in estrogen receptor-positive (ER+) breast cancer"

Maria Bettencourt, MSc Student – Luís Costa Laboratory

01st April 2016

Oncobiology Conferences 2016

Hosts: Luís Costa and Maria Carmo-Fonseca

27th April 2016

"LDL inhibits the anti-tumor functions and breast cancer targeting by γ T cells"

Neidy Rodrigues, PhD Student – Sérgio Dias Laboratory and Bruno Silva-Santos Laboratory

11th May 2016

"Do IL-7Rα gain-of-function mutants signal from intracellular compartments and why do we care? Preliminary studies"

Joana Silva, Master Student – João Barata Laboratory

25th May 2016

"Control of Metastasis Formation by Primary Tumour"

Hiroshi Kubo, PhD – Bruno Silva-Santos Laboratory

08th June 2016

"The importance of CELF-control: CELF2 at the core of a prognostic alternative splicing signature in colorectal cancer"

Lina Gallego-Paez, Post-Doc – Nuno Morais Laboratory

06th July 2016

"Small Molecule Drug Conjugates for Selective Cancer Therapy"

Rui Traquete, PhD Student – Gonçalo Bernardes Laboratory

17th August 2016

"The Future of Robotic Space Exploration: from our Solar System to Interstellar Exploration. How Medicine can benefit from that knowledge?"

Dr. Leon Alkalai, JPL Tech Fellow – Member of the International Academy of Astronautics Jet Propulsion Laboratory, California Institute of Technology

19th October 2016

"CK2 controls the survival of normal thymic and leukemic human gamma-delta T cells"

Sérgio Ribeiro, PhD Student – Bruno Silva-Santos Laboratory

02nd November 2016

"Neutrophil to lymphocyte ratio (NLR) impact on the survival and response duration of patients with metastatic castration resistant prostate cancer (mCRPC) treated with abiraterone acetate (AA)"

André Mansinho – Luís Costa Laboratory

16th November 2016

"Patient derived xenografts of brain metastases - a tool for translational medicine"

Cláudia Faria, MD, PhD – João Barata Laboratory

30th November 2016

"PSIchomics: A Simple Way to Analyse Alternative Splicing in Cancer"

Nuno Agostinho, MSc – Nuno Morais Laboratory

14th December 2016

"Neutrophil-mediated inhibition of gamma-delta T cells in the tumour environment"

Sofia Mensurado, MSc Student – Bruno Silva-Santos Laboratory

Other Events

16th February 2016

"The UMLILO long ncRNA exploits pre-formed 3D chromatin folding to coordinate rapid chemokine gene activation"

Musa Mhlanga, PhD H

Host: Domingos Henrique

Rheumatology Series: "Yrjo Konttinen Memorial Lecture"

Maria Ainola, PhD – University of Helsinki, Finland

Joana Caetano-Lopes, PhD – Orthopedic Research Laboratories, Boston Children's Hospital

25th February 2016

"Closing seminar of LisbonBioMed 2016 Course "Towards a Creative and Critical Mind": Scientific discovery or increment in knowledge?"

M. Carmo-Fonseca, President and Head of Laboratory

11th - 13th April 2016

iMM Lisboa Scientific Retreat: A year at iMM Lisboa

Maria M. Mota, Executive Director

02nd June 2016

Scientific Wrtiting Seminar: "Writing the first draft of your research paper: fast and painless"

Marcia Triunfol, PhD – Publicase Comunicação Científica

Host: Filipa Nunes

06th October 2016

TwinnToInfect/EXCELLtoINNOV Seminars: "Regulation of antibody responses by B cell mechanical activity"

Pavel Tolar, PhD – The Francis Crick Institute

Host: Pedro Simas

03rd November 2016

TwinnToInfect/EXCELLtoINNOV Seminars: "Neutrophils extracellular traps in infection and disease"

Venizelos Papayannopoulos – The Francis Crick Institute, United Kingdom

22th November 2016

Retubi Project Presentation: "What is Retubi?"

30th November 2016

Out of Our Box: "Waste Matters: You Are My Future"

Kathy High – Department of the Arts, Rensselaer Polytechnic Institute, New York

Host: Luís Graça

07th December 2016

TwinnToInfect/EXCELLtoINNOV Seminars: "From Microbiology to Cell Biology with Listeria"

Didier Cabanes, PhD – I3S, Porto

Host: Luísa Figueiredo

Parasitology Club

12th January 2016

"Trypanosoma brucei intrinsic circadian clock controls its metabolism"

Ana Ferreira, PhD Student – Luísa Figueiredo Laboratory

19th January 2016

"Exploration of sulfated polysaccharides as antimalarials and as targeting molecules for nanovector-mediated drug delivery to Plasmodium-infected cells"

Joana Marques, PhD – Instituto de Higiene e Medicina Tropical

26th January 2016

"Activating the power of AMPK to control Plasmodium liver stage development"

Iset Vera, PhD – Maria Mota Laboratory

02nd February 2016

"Pushing it forward... The role of Plasmodium liver stage in setting the course of disease"

Ângelo Ferreira Chora, Post-Doc – Maria M. Mota Laboratory

16th February 2016

Sonali Setua, Post-Doc – Maria M. Mota Laboratory

23rd February 2016

"Impairment of Plasmodium liver infection by Trypanosoma brucei"

Ana Margarida Vaz, PhD Student – Miguel Prudêncio and Luísa Figueiredo Laboratory

01st March 2016

"Iron as a nutrient for malaria parasites: the need to sense, acquire and detoxify"

Ksenija Slavic, Post-Doc – Maria M. Mota Laboratory

08th March 2016

"Trypanossoma brucei N-glycosilation, what is know and where to look at"

Miguel Ferreira, Post-Doc – Luísa Figueiredo Laboratory

22nd March 2016

"Exported Protein 2 or: How I Learned to Stop Worrying and Love Protein Export"

João Vieira, PhD Student – Maria M. Mota Laboratory

05th April 2016

"The role of PbUIS4 during malaria liver stage infection: Old question, new approaches"

Viriato M'Bana, PhD Student – Maria M. Mota Laboratory

26th April 2016

"A bug made me do it!' - Impact of parasitic infection on host behavior"

Cristina Afonso, PhD – Fundação Champalimaud

03rd May 2016

"Nutrient Uptake and Metabolism in Plasmodium-infected hepatic cells"

Patrícia Meireles, PhD Student – Miguel Prudêncio Laboratory

"The role of PbUIS4 during malaria liver stage infection: old question, new approaches"

Viriato M'Bana, PhD Student – Maria M. Mota Laboratory

10th May 2016

"Malaria Trials in the Tropics"

Pia Mueller, PhD – Centre de Recherches Médicales de Lambaréné (CERMEL), Albert Schweitzer Hospital

17th May 2016

"Can mosquitoes be tools for malaria control?"

Henrique Silveira, PhD – Instituto de Higiene e Medicina Tropical, Universidade Nova de Lisboa

24th May 2016

"A bug made me do it!' - Impact of parasitic infection on host behavior"

Cristina Afonso, PhD – Fundação Champalimaud

31st May 2016

"Living in the liver: Plasmodium and the hepatic methionine metabolism"

Vanessa Zuzarte Luís, Post-Doc – Maria M. Mota Laboratory

07th June 2016

"UIS3-LC3 interaction: a novel drug target for malaria therapy?"

Sonali Setua, Post-Doc – Maria M. Mota Laboratory

21st June 2016

"The glycobiology of African Trypanosomes"

João Rodrigues, PhD – Luísa Figueiredo Laboratory

28th June 2016

"A Grumpy LncRNA is involved in growth and stumpy differentiation of T. brucei"

Fabien Guegan, PhD – Luísa Figueiredo Laboratory

06th September 2016

"Plasmodium short N-glycans are critical for parasite survival and development"

Eleonora Aquilini, PhD Student – Luísa Figueiredo Laboratory

15th September 2016

"Alternative splicing in human parasites"

Ralph Stuart, PhD – University of Melbourne, Austrália

Host: Luísa Figueiredo

20th September 2016

"Inhibition of plasmodium liver infection by amino acid supplementation"

Patrícia Meireles, Post-Doc – Miguel Prudêncio Laboratory

27th September 2016

"Development of a new in vitro assay for screening transmission blocking compounds"

Raquel Azevedo, MSc Student – Miguel Prudêncio Laboratory

"Post-transcriptional circadian gene expression regulation in Trypanosoma brucei"

Daniel Neves, MSc Student – Luísa Figueiredo Laboratory

04th October 2016

"Understanding the role of parasites' epitranscriptome"

João Nina, MSc Student – Luísa Figueiredo Laboratory

"Iron Man(ipulation): unravelling the iron responsive genes' network in malaria parasites"

Miguel Santos, MSc Student – Maria M. Mota Laboratory

11th October 2016

"Characterization of Plasmodium methionine metabolism key enzymes"

Inês Marreiros, MSc – Maria M. Mota Laboratory

"A multi-stage whole-organism vaccine strategy against malaria"

João Sinfrónio, MSc – Miguel Prudêncio Laboratory

18th October 2016

"Adipose Tissue is a Major Reservoir of Functionally Distinct Trypanosoma brucei Parasites"

Sandra Trindade, Post-Doc – Luísa Figueiredo Laboratory

25th October 2016

"Clock parasites: where circadian rhythm finds malaria"

Inês Bento, Post-Doc – Maria M. Mota Laboratory

08th November 2016

"Circadian rhythms in a parasite: finding the role of post-transcriptional regulation"

Ana Pena, Post-Doc – Luísa Figueiredo Laboratory

15th November 2016

"Plasmodium Glycogen Synthase Kinase 3 (GSK3): Convergence with AMPK, virulence, and nutrient sensing?"

Iset Vera, Post-Doc – Maria M. Mota Laboratory

29th November 2016

"Well after 2 years of working with Plasmodium and Host Microbiota...I have to say I am GUT(ted)..."

Debanjan Mukherjee, PhD Student – Maria M. Mota Laboratory

13th November 2016

Francisco Branco, PhD Student – Luísa Figueiredo Laboratory

Pharmacology Series

17th October 2016

"Memantine: new mechanism of action"

Maria José Diógenes – Ana Sebastião Laboratory, Institute of Pharmacology and Neuroscience, FML

14th November 2016

"Are the transcription factors the weakness of the malaria parasite?"

Joana Santos, Post-Doc – PennState University, United States of America

12th December 2016

"A new malaria vaccine enters clinical trials"

Miguel Prudêncio, Head of Laboratory

PhD Dissertation Presentation

18th February 2016

"Structural proteins of enveloped virus: from biochemistry to molecular medicine. A focus on dengue vírus"

João Miguel Calado da Silva Freire – Miguel Castanho Laboratory

25th February 2016

"Analysis of the Gene Regulatory Network underlying pluripotenciality in mouse Embryonic Stem cells"

Ana Marisa Mendes Gonçalves Vinhais Guedes – Domingos Henrique Laboratory, Elsa Abranches

26th April 2016

"Pathogenesis of Gamma Herpes Viruses based upon Structural Data"

Sofia Isabel Arriaga Mimoso Cerqueira – Pedro Simas Laboratory

27th April 2016

"Studies on the Impact of Assistive Communication Devices on the Quality of Life of Patients with Amyotrophic Lateral Sclerosis"

Ana Rita Mendes Londral Gamboa – Mamede de Carvalho Laboratory

"Later stages of Parkinson´s Disease University of Lisbon"

Miguel Vilhena Coelho – Joaquim Ferreira Laboratory

09th May 2016

"Nutrient Uptake and Metabolism in Plasmodium-Infected Hepatic Cells"

Patrícia dos Santos Meireles – Miguel Prudêncio Laboratory

04th July 2016

"Dengue virus capsid protein structural and functional studies: a gateway for possible dengue inhibition strategies"

André Faustino – Nuno Santos Laboratory

08th July 2016

"Padrão de Prescrição de Agentes Antiparkinsónicos: Caracterização do Uso pelos Clínicos"

Mário Rosa – Joaquim Ferreira Laboratory

20th July 2016

"Circadian rhythms in a Trypanosoma brucei infection: host, parasite or both?"

Filipa Rijo-Ferreira – Luísa Figueiredo Laboratory, Joseph Takahashi

22nd July 2016

"Is depression a risk factor for dementia? A translational research"

Frederico Simões do Couto de Oliveira Fernandes – José Ferro Laboratory

28th September 2016

"Positioning nuclei at the periphery of skeletal muscle cells"

William Roman – Edgar Gomes Laboratory, Simone Spuler

03rd October 2016

"Differences in osteoclast activity between rheumatoid arthritis and ankylosing spondylitis"

Inês Pedro Perpétuo – João Eurico da Fonseca Laboratory

21st November 2016

"Living without thymus: lessons from adults thymectomized in early infancy"

Susana Lopes da Silva – Ana Espada Sousa Laboratory, Professor Manuel P. Barbosa

06th December 2016

"Understanding chromatin dynamics during antigenic variation in Trypanosoma brucei"

Francisco Aresta-Branco – Luísa Figueiredo Laboratory

12th December 2016

"Dissecting the Cellular and Molecular Mechanisms of IL-7-mediated Leukemia T- cell Survival, Proliferation and Cell Growth"

Daniel Ribeiro, University of Lisboa – Supervisor: João T. Barata

20th December 2016

"Strategic Management of new drugs in oncology - The Importance of an Ethical and Interdisciplinary Framework"

Isabel Cristina Fernandes Borges da Costa, ISCTE - Instituto Universitário de Lisboa – Prof. Prof. Maria do Céu Rueff Prof. Sofia Portela (Luís Costa Laboratory)

Pizza Seminar

19th January 2016

"The GUT instincts of the LIVER during Plasmodium infection"

Debanjan Mukherjee, PhD Student – Maria M. Mota Laboratory

"CellectAb: Engineering the next generation of antibody discovery"

Joana Henriques Ministro, PhD Student – Technophage

02nd February 2016

"Reciprocal regulatory links between transcription and double strand break repair"

Alexandra Vítor, PhD Student – Sérgio Almeida Laboratory

"The bloody side of spinal cord regeneration"

Ana Ribeiro, Post-Doc – Leonor Saúde Laboratory

16th February 2016

"Antimalarial Drug-Resistance: Development of a Novel Drug-Sensitivity Assay for Plasmodium falciparum"

Maria Rebelo, PhD Student – Mário Ramirez Laboratory

01st March 2016

"Peripheral shaping of IL-17-producing gamma-delta T cells: from generation to regulation"

Pedro Papotto, PhD Student – Bruno Silva-Santos Laboratory

"Targeting T cells at the origin: HIV-2 infection of the human thymus"

Helena Nunes Cabaço, Postdoc – Ana E. Sousa Laboratory

15th March 2016

"Force transmission and endothelial cell rearrangements during vascular remodeling"

Joana Carvalho, PhD Student – Cláudio Franco Laboratory

"Antigen immunization originates Tfh and Tfr populations with different TCR repertoire"

Ana Raquel Maceiras, PhD Student – Luís Graça Laboratory

10th May 2016

"From methylation to antigenic variation in Trypanosoma brucei"

Idálio Viegas, PhD Student – Luísa Figueiredo Laboratory

"Therapeuticpotential of CD6-targeting for immune modulation"

Raquel Freitas, PhD Student – Luís Graça Laboratory

24th May 2016

"Clinical and Pathobiological Differences in Elderly- and Younger-Onset Rheumatoid Arthritis"

Vasco C Romão, PhD Student – João Eurico-Fonseca Laboratory

"Thrombin and fibrinogen γ' regulate protofibril packing within the fibrin fiber leading to changes in clot structure and strength"

Marco M. Domingues, Post-Doc – Miguel Castanho Laboratory

07th June 2016

"Human circulating Tfr cells"

Válter R Fonseca, PhD Student – Luís Graça Laboratory

"Adapting forest to climate-change: the implications of microclimate in drylands"

Adriana Príncipe, PhD Student – CE3C (Center for Ecology, Evolution and Environmental Changes), Faculdade de Ciências

21st June 2016

"Analysing Alternative Splicing deregulation in Parkinson´s disease"

Marie Bordone, PhD Student – Nuno Morais Laboratory

13th September 2016

"Flavor-nutrient conditioning is disrupted by weight-loss surgery"

Gabriela Ribeiro, PhD Student – Maria M. Mota Laboratory

"The UIS4 role during malaria liver stage infection"

Viriato M'Bana, PhD Student – Maria M. Mota Laboratory

27th September 2016

"Smelly cells: persulfide formation during inflammation"

Florian Sieglitz, Post-Doc – Gonçalo Bernardes Laboratory

11th October 2016

"Parkinson's and mad cow disease: is there a connection?"

Diana G. Ferreira, PhD Student – Luísa Lopes Laboratory

25th October 2016

"Why rats turn the way they do?"

Emanuel Ferreira Fernandes, PhD Student – Miguel Remondes Laboratory

"Simultaneous visualization of a gene and its messenger RNA in live cells: combining the CRISPR and MS2 systems"

João Pessoa, Post-Doc – M. Carmo-Fonseca Laboratory

08th November 2016

"Predicting conversion of Mild Cognitive Impairment to Alzheimer's Disease: a time windows approach"

Telma Pereira, PhD Student – IST/INESC-ID

"Cytokine regulation by microRNAs"

Tiago Amado, PhD Student – Bruno Silva-Santos Laboratory

22nd November 2016

"Epigenetic drivers of genomic instability and intratumoral heterogeneity"

Mafalda Ramos de Matos – Sérgio Almeida Laboratory

"Autoreactive 9G4+ B cells: are they relevant in Rheumatoid Arthritis pathogenesis?"

Rita Moura – João Eurico-Fonseca Laboratory

06th December 2016

"Multi-resistant infections: what can we do?"

Mário R. Felício, PhD Student – Nuno Santos Laboratory

"The impact of adenosine A1 receptors on modulation of synaptic plasticity by endocannabinoids"

Armando Cruz, PhD Student – Ana Sebastião Laboratory

Special Seminar

08th January 2016

"Circadian Clocks in Mouse Models of Mood Disorders"

Dominic Landgraf, PhD – University of California San Diego

18th February 2016

"Structural proteins of enveloped virus: from biochemistry to molecular medicine. A focus on dengue vírus"

João Miguel Calado da Silva Freire, PhD Candidate – Miguel Castanho Laboratory

25th February 2016

"Lightsheet Z.1 microscope - Fast and gentle fluorescence imaging of living and cleared specimen"

Christian Schwindling – Carl Zeiss Microscopy GmbH

Host: José Rino

"Origin of dixenous Leishmania"

Vyacheslav Yurchenko, PhD – Laboratory of Molecular Protozoology, University of Ostrava, Czech Republic.

23rd May 2016

"New Trends in Prostate Cancer Research"

Peter S. Nelson, M.D. - Fred Hutchinson Cancer Research Center, USA

Luis Costa, Head of Laboratory

31st May 2016

"Case Studies from the IMI European Lead Factory, a Large-Scale Controlled Experiment. Drug discovery opportunities for Portuguese academics"

Tale Sliedrecht, PhD – Program Manager the European Lead Factory, Lygature

Host: Funding Programs

06th June 2016

"Publishing a paper: behind the scenes"

Christophe Bernard, PhD – Editor-in-chief of eNeuro

Host: Luísa Lopes

23rd June 2016

"Maintaining and activating intra-epithelial lymphocytes"

Marc Veldhoen, Head of Laboratory

08th July 2016

"Neuropeptide Y: an anti-aging player?"

Cláudia Cavadas, PhD – CNC - Center for Neuroscience and Cell Biology, University of Coimbra

Host: M. Carmo-Fonseca

"Squeezing nuclei through constricted spaces"

Daniel A. Starr, PhD – Department of Molecular and Cellular Biology, University of California, Davis

Host: Edgar Gomes

03rd August 2016

"Heterogeneity through Space and Time Drives the Clinical Behaviour of Childhood Medulloblastoma"

Dr. Michael D. Taylor – Hospital for Sick Children, Toronto, Canada

Host: Cláudia Faria

22nd September 2016

"Human-microbiome interactions in health and disease"

M. Helena Mendes Soares, PhD – Center for Individualizes Medicine - Mayo Clinic, US

Host: Mário Ramirez

27th September 2016

"Hemorheological disturbances in patients with various diseases and methods for their evaluation"

Nadia Antonova, PhD – Department of Biomechanics -Institute of Mechanics, Bulgarian Academy of Sciences

Host: Carlota Saldanha

29th September 2016

"Analysis of blood flow and relation to the blood rheological properties"

Nadia Antonova, PhD – Department of Biomechanics, Institute of Mechanics, Bulgarian Academy of Sciences

Host: Carlota Saldanha

13th October 2016

"Animal Research: Time to Talk!"

Kirk Leech – European Animal Research Association

07th November 2016

"Mosaic Mouse Models of Sarcomas: Translational tools for precision medicine"

Timothy McKinnon – Lunenfeld-Tanenbaum Research Institute

18th November 2016

"From the lab to the headlines: how to effectively communicate science to the press (and why you should care about it)"

Giuliana Miranda – Folha de São Paulo, Brasil

Host: Luísa Lopes

21st November 2016

"The whys and wherefores of the CXCL8-producing T cell"

Deena Gibbons, PhD – Kings College, London

Host: Ana Espada Sousa

29th November 2016

"It's in the AhR- the role(s) of Arly Hydrocarbon Receptor in bacterial infections"

Pedro Alves, PhD – Max Planck Institute for Infection Biology, Berlin

Host: Maria M. Mota

"Dare to innovate (!) - HealthCareCity is your launchpad to entrepreneurship"

José Leal, PhD – Health Care City

Host: Bruno Silva-Santos

Advanced Training // Career Development

The iMM is strongly committed to proving the best training for success in science to researchers at different stages in their careers.

Team

Executive Manager: Filipa Nunes, PhD (started March 2016).

Executive Committee: Leonor Saúde, PhD (Chair); Vanessa Morais, PhD; Edgar Gomes, PhD.

LisbonBioMed PhD Program Director: Domingos Henrique, PhD.

Together with Faculdade de Medicina da Universidade de Lisboa (FMUL) and with Hospital de Santa Maria (HSM), iMM is part of the Lisbon Academic Medical Center (Lisbon AMC), a consortium that provides an integrated form of education and training in Biomedicine and Clinical Research, combining multidisciplinary and internationalization.

In pair with high-level research-centered training, our PhD students and Postdoctoral fellows benefit from a varied curricular offer organized into several thematic Advanced Courses- scientific and thematic courses, complementary skills workshops, etc - distributed along each academic year.

The majority of iMM PhD students belong to the Lisbon AMC PhD Program that runs in the campus since 2010. In addition, iMM also hosts students from other national (e.g. NeurULisboa) and international PhD Programs (e.g. MC-ITN, MIT-PT).

In 2013, iMM was awarded FCT funding to create the Lisbon Biomedical and Clinical Research PhD Program – **LisbonBioMed**, and in January 2016, we welcomed the third edition 7 PhD students. Furthermore, iMM is a partner in five other multi-institutional FCT PhD Programs: The Bioengineering - Cell Therapies and Regenerative Medicine (**CTRM**), the Molecular Biosciences - Biology at the Host Microbe Interface (**B@HMI**), the Lisbon University Doctoral Program in Integrative Neuroscience (**NeurULisboa**), the Medicinal Chemistry PhD Programme (**MedChemTrain**) and the Medical Biochemistry and Biophysics (**M2B-PhD**) PhD Programs.

Overall, the integrated management of ongoing and new PhD and Postdoctoral Programs will further enrich our scientific environment promoting multidisciplinary and facilitating the development of individual projects within the areas of Biomedicine and Clinical Medicine.

Advanced Training in Numbers

	2016
Post-Doctoral Fellows	85
Started in 2016	23
PhD Students	132
Started in 2016	47
MSc Students	125
Started in 2016	48

In 2016, **132 PhD students** conducted research at iMM, enrolled in 7 different **FCT PhD Programs**:

- LisbonBioMed: 26
- M2B-PhD: 9
- NeurULisboa: 9
- CTRM: 3
- MedChemTrain: 1
- GABBA: 2
- PGCD: 6
- MIT-Portugal: 2

Besides Lisbon AMC PhD students, IMM hosted **14 PhD students from other Institutions/Universities**: 1 Universidade Federal da Bahia; 1 Universidad Complutense de Madrid; 1 University Pierre and Marie Curie; 1 Universidade de Havana; 1 University of Eastern Finland; 2 Universidade do Porto; 1 Universidade de Coimbra; 1 Faculdade de Farmácia da ULisboa; 5 Instituto Superior Técnico da ULisboa.

47 PhD Students started at iMM in 2016, including 7 LisbonBioMed PhD students: Ana Filipa Ribeiro Cardoso, Andreia Sofia Faria Pereira, Daniel Artur Abreu Martins, Julia Skalska, Maria Helena Cristiano Brigas, Mariana Lobato de Oliveira, Sofia Mensurado Santos.

In 2016, **16 PhD thesis** were concluded, 12 of which were attributed by the Faculdade de Medicina da Universidade de Lisboa (FMUL).

Advanced Courses
A Total of 9 Advanced Courses Were Organized

<u>7 Courses organized under the CAML PhD Programme in 2016</u>

Towards a Creative and Critical Mind

Organizer: Domingos Henrique

Date: 4th January to 26th February (16 ECTS)

The course is focused on: promotes student integration, creates an informal welcoming, fosters team bonding, interaction with putative supervisors, introduces complementary skills training, and raises awareness to transversal competences needed for a successful research career.

Statistics for Beginners

Organizer: Domingos Henrique

Date: 7th January to 10th March, every Thursday (1 ECTS)

This is an introductory course to statistical methods applied to biological research, aimed at providing participants with basic concepts on statistics, and how these can be used in daily research activities, with particular emphasis on how to design experiments and how to deal with the limits of statistical methods. Participants are encouraged to bring their experimental questions to be discussed. This course must provide the basis for further course, aimed at more advanced statistical methods, targeted at specific needs from researchers at CAML.

Show me your mouse and I will show you your phenotype – histopathology in biomedical research

Organizer: Tânia Carvalho, Dolores Bonaparte

Date: 26th to 27th January (0.25 ECTS)

The main objective is to introduce researchers to the use of mouse models in biomedical research, specifically focusing on how a good command of mouse pathology and histology can contribute for better science. Course will cover translation of features between humans and mice; clinical evaluation, post-mortem exam, adequate sample collection and preparation, and an overview of histology techniques with both theoretical and hands-on sessions.

Laboratory Animal Science

Organizer: Joana Marques

Date: 19th April to 6th May (1,5 ECTS)

The course followed the recommendations of FELASA for cat. B. Theoretical sessions covered the following topics: Ethics and the 3R's; Biology and husbandry; Animal behavior and welfare; Surgery and pain management; Euthanasia and humane endpoints. Practical sessions focused on procedures and techniques in rodents and fish.

Communication: How to present in a scientific congress?

Organizer: Workshop group of the PhD Students Committee

Date: 12th October

This is an interactive course that gives the students the tools to communicate more effectively with an audience in a scientific congress, making their communication more impactful, persuasive and confident.

Graphic Design in Science

Organizer: Workshop group of the PhD Students Committee

Date: 9th November

The aim of this workshop is to provide insight into the visual and graphic characteristics of scientific publication and outreach. Students have the opportunity to learn technical skills on how to improve scientific illustrations using adequate software, better present their research and hypothesis, and also communicate with society through the aid of graphical support.

Exploring different career paths "Communication & Presentation skills for scientist - Mastering the art of presentation"

Organizer: Workshop group of the PhD Students Committee

Date: 5th December

In this workshop, students have the opportunity of being in a close contact with people that decided "to go outside the box" and found by themselves their place in the science market (inside and outside of the academia).

2 Courses organized by the iMM Postdoctoral Association (PDA) in 2016

Communication & Presentation skills for scientists - Mastering the art of presentation

Organizer: PDA

Date: 6th May

A full-day interactive workshop intended to help participants better communicate ideas and results to their peers, to colleagues from another field, or to the public.

Leadership and Management Skills

Organizer: PDA

Date: 20-22th June

Course Topics: Working in teams; Establishing and maintaining collaboration; Negotiation skills (e.g. authorship, job position, start-up package, conflicts, etc.); Dealing with conflicts constructively; Dealing with hierarchy productively; Organizing the work: setting goals, setting priorities; Peer coaching techniques

Research Activity

The mission of *Instituto de Medicina Molecular* (iMM Lisboa) is to foster basic, clinical and translational biomedical research with the aim of contributing to a better understanding of disease mechanisms, developing novel predictive tests, improving diagnostics tools and developing new therapeutic approaches.

Azzalin, Claus M.
Barata, João T.
Bernardes, Gonçalo J. L.
Carmo-Fonseca, Maria
Castanho, Miguel
Costa, Luís
De Almeida, Sérgio
De Carvalho, Mamede
Dias, Sérgio
Ferreira, Joaquim
Ferro, José
Figueiredo, Luísa
Filipe, Paulo
Fonseca, João Eurico
Franco, Cláudio
Gomes, Edgar
Graça, Luís
Henrique, Domingos
Lacerda, João F.
Lopes, Luísa V.
Morais, Nuno
Morais, Vanessa
Mota, Maria M.
Oliveira, Sofia A.
Prata, Diana
Prudêncio, Miguel
Ramirez, Mário
Remondes, Miguel
Saldanha, Carlota
Santos, Nuno C.
Saúde, Leonor
Sebastião, Ana
Silva-Santos, Bruno
Simas, Pedro
Sousa, Ana E.
Veiga-Fernandes, Henrique
Veldhoen, Marc

Azzalin, Claus M.

Major Interests / Objectives

Telomeres are heterochromatic nucleoprotein structures 'capping' ends of linear eukaryotic chromosomes. Dysfunctional telomeres cause severe chromosome instability, thereby unleashing cascades of cellular reactions that are common hallmarks of human diseases such as cancer and premature aging. We employ molecular biology, cell biology and biochemistry to understand how telomeres execute their protective functions and how telomeric dysfunctions are mechanistically linked to pathological conditions. In particular, we study how the telomeric long noncoding RNA TERRA participates in maintaining proper telomere structure and functions in both normal and diseased human cells.

Head of Laboratory

Claus Maria Azzalin, PhD

Research Team

José Carlos Perez Nobre	Master	Investigator (Started October)
Rajika Arora	PhD	Post-Doctoral Investigator (Started October)

Laboratory Keywords / Research Areas

TERRA, Telomeres, Cancer, Aging, Long noncoding RNA, Genome stability.

Major Scientific Achievements

We discovered that the long noncoding RNA TERRA promotes telomerase-mediated telomere elongation in fission yeast. In a separate line of research, we discovered that TERRA and/or telomere transcription are essential for promoting telomere elongation in human cancer cells that do not reactivate telomerase.

Selected Publications

R. Chawla, S. Redon, C. Raftopoulou, H. Wischnewski, S. Gagos and C.M. Azzalin (2011) Human UPF1 interacts with TPP1 and telomerase and sustains telomere leading-strand replication. EMBO Journal 30, 4047-4058 (Journal IF: 9.643, Citations: 34).

R. Arora, C.M. Brun and C.M. Azzalin (2012) Transcription regulates telomere dynamics in human cancer cells. RNA 18, 684-693 (Journal IF: 4.344, Citations: 13).

V. Shchepachev, H. Wischnewski, E. Missiaglia, C. Soneson and C.M. Azzalin (2012) Mpn1, mutated in Clericuzio-type poikiloderma with neutropenia protein 1, is a conserved 3'-to-5' RNA exonuclease processing U6 small nuclear RNA. Cell Rep 2, 855-865 (Journal IF: 7.87, Citations: 18).

R. Arora, Y. Lee, H. Wischnewski, C. M. Brun, T. Schwarz and C.M. Azzalin (2014) RNaseH1 regulates TERRA-telomeric DNA hybrids and telomere maintenance in ALT tumor cells. Nat Commun 5, 5220 (Journal IF: 11.329, Citations: 25).

L.E. Lorenzi, A. Bah, H. Wischnewski, V. Shchepachev, C. Soneson, M. Santagostino and C. M. Azzalin (2014) Fission yeast Cactin restricts telomere transcription and elongation by regulating Rap1 levels. EMBO Journal 34, 115-129 (Journal IF: 9.643, Citations: 3).

M. Moravec, H. Wischnewski, A. Bah, Y. Hu, N. Liu, L. Lafranchi, M.C. King and C.M. Azzalin (2016) TERRA promotes telomerase-mediated telomere elongation in Schizosaccharomyces pombe. EMBO Rep 17, 999-1012 (Journal IF: 7.739, Citations: 3).

Other Projects

2015/2018: The multiple roles of TERRA in telomere length maintenance, telomere integrity, cancer and cellular senescence. Swiss National Science Foundation (31003A_160338). Coordinator: Claus M. Azzalin.

Invited Lectures and Seminars

April 2016: invited speaker for the EMBO meeting 'Telomeres, telomerase and disease', Liege, Belgium.

July 2016: invited speaker and chairman for the 'Congress of Cell Biology - Exploring Cellular Structure and Function', Prague, Czech Republic.

Prizes, Honours and Awards

Fundação para a Ciência e a Tecnologia (FCT) Investigator Award (November 2016) to CM. Azzalin.

EMBO Installation Grant Award (to start in January 2017) to CM. Azzalin.

Best Poster Prize at the EMBO conference 'Telomeres, telomerase and disease' (Liege, Belgium) to Yong Woo Lee.

PhD Thesis Completed

Martin Moravec 28/01/2016 TERRA and telomere transcription at the crossroads between telomere length regulation and telomere integrity in Schizosaccharomyces pombe ETH Zurich CM. Azzalin.

Isabella Martina Yvonne Zanini 31/03/2016 Functions of human Cactin in pre-mRNA splicing and chromosome stability ETH Zurich CM. Azzalin.

Barata, João T.

Major Interests / Objectives

We aim to understand the role of cell-autonomous alterations and microenvironmental cues in the development of cancer, focusing mainly on the dissection of signaling pathways essential for tumor maintenance. To do so, we make use of patient material, as a key source of insights into the disease, and integrate different biochemical, cellular and molecular biology techniques with appropriate in vitro and in vivo models - enabling an overall appreciation of the molecular, cellular and systemic nuances associated with cancer. The basic and pre-clinical research we perform is translation-oriented and enriched by active collaborations with clinicians. Ultimately, we aim to identify and characterize molecular targets for the development of novel, more selective therapies against cancer.

Head of Laboratory

João Pedro Taborda Barata, PhD, Associate Professor

Team

Afonso Rocha Martins de Almeida	PhD	Post-Doctoral Investigator
Alice Sofia dos Santos Melão	Master	PhD Student
Ana Rita Freitas Martins de Matos Fragoso	PhD	Investigator
Andreia de Jesus Amaral Gomes Barbosa Fonseca	PhD	Post-Doctoral Investigator, BioFIG (Started November)
Bruno António Caetano Cardoso	PhD	Post-Doctoral Investigator (Started September)
Carlos Manuel Tavares da Custodia	Master	Investigator
Claudia Maria Coelho de Faria	MD/PhD	Post-Doctoral Investigator, Faculdade Medicina da Universidade de Lisboa, Assistant Professor, Clinical Specialist
Daniel Ribeiro	Master	PhD Student
Eunice Ribeiro João Silva Paisana	Graduate	Technician (Started September)
Inês Garcia Brandão e Silva Pinto	Graduate	MSc Student
Isabel da Conceicao Alves Alcobia Principe Henriques	PhD	Post-Doctoral Investigator
Joana Tavares Ferreira da Silva	Graduate	MSc Student (Left August)
Mafalda dos Santos Dias Duque	Graduate	Trainee (Started October)
Maria Leonor Saraiva de Carvalho Morais Sarmento	PhD	Post-Doctoral Investigator, Faculdade Medicina da Universidade de Lisboa, Assistant Professor (Left May)
Mariana Lobato de Oliveira	Master	PhD Student (Started February)

Nádia G. Cavaleiro Sousa Correia	PhD	Investigator (Left June)
Padma Akkapeddi	Master	PhD Student, NA
Raquel dos Santos Linheiro	MD/PhD	Post-Doctoral Investigator (Left April)
Tatiana Sofia Carneiro Duque	Undergraduate	Trainee (Started October)
Teresa Laura Mendes Serafim	PhD	Lab Manager
Tiago André Dias Soares	Graduate	MSc Student (Started August)

Laboratory Keywords / Research Areas

Cancer Biology, Leukemia, Signal transduction, Cellular and molecular biology, rational targeted therapies, Brain tumors.

Major Scientific Achievements

Previously we showed that CK2 activates PI3K/Akt pathway via PTEN inactivation in T-ALL (JCI 2008), and that IL-7 and IL-7R contribute to T-cell leukemia (Cancer Res 2011; Nat Genet 2011). In 2016, we showed that CK2 and IL-7R interact, and CK2 is required for optimal IL-7R-mediated signaling and leukemia cell viability (Haematologica 2016). We also contributed to the demonstration that γδ T-ALL cells are particularly dependent on CK2 (more so than αβ T-ALLs), a feature that reflects the reliance of healthy γδ T-cell precursors on CK2, in contrast to αβ thymocytes (Ribeiro et al, Leukemia 2016).

The oncogene TAL1 regulates a network of microRNAs (Leukemia 2013). We now showed that TAL1 is itself regulated by miRNAs (Oncotarget 2016) and that the TAL1 target miR-146b acts as tumor suppressor in T-ALL by diminishing motility, migration and CNS involvement (Sci Reports 2016).

J.T. Barata was awarded an FCT-FAPESP grant for a collaborative project with a Brazilian research group.

Selected Publications

A. Silva, J.A. Yunes, B.A. Cardoso, L.R. Martins, P.Y. Jotta, M. Abecasis, A.E. Nowill, N.R. Leslie, A.A. Cardoso, J.T. Barata (2008) PTEN Posttranslational Inactivation and Hyperactivation of the PI3K/Akt Pathway Sustain Primary T Cell Leukemia Viability. JOURNAL OF CLINICAL INVESTIGATION 118, 3762-3774 (Journal IF: 12.575, Citations: 193).

C.M. Henriques, J. Rino, R.J. Nibbs, G.G. Graham, J.T. Barata (2010) IL-7 induces rapid clathrin-mediated internalization and JAK3-dependent degradation of IL-7R? in T cells. BLOOD 115, 2724-2731 (Journal IF: 11.847, Citations: 47).

P.P. Zenatti, D. Ribeiro, W. Li, L. Zuurbier, M.C. Silva, M. Paganin, J. Tritapoe, J.A. Hixon, A.B. Silveira, B.A. Cardoso, L.M. Sarmento, N. Correia, M.L. Toribio, J. Kobarg, M. Horstmann, R. Pieters, S.R. Brandalise, A.A. Ferrando, J.P. Meijerink, S.K. Durum, J.A. Yunes, J.T. Barata (2011) Oncogenic IL7R gain-of-function mutations in childhood T-cell acute lymphoblastic leukemia. NATURE GENETICS 43, 932-939 (Journal IF: 31.616, Citations: 118).

A. Silva, A.B.A. Laranjeira, L.R. Martins, B.A. Cardoso, J. Demengeot, J.A. Yunes, B. Seddon, J.T. Barata (2011) IL-7 Contributes to the Progression of Human T-cell Acute Lymphoblastic Leukemias. CANCER RESEARCH 71, 4780-4789 (Journal IF: 8.556, Citations: 35).

L.R. Martins, P. Lúcio, A. Melão, I. Antunes, B.A. Cardoso, R. Stansfield, M.T. Bertilaccio, P. Ghia, D. Drygin, M.G. Silva, J.T. Barata (2014) Activity of the clinical-stage CK2-specific inhibitor CX-4945 against chronic lymphocytic leukemia. LEUKEMIA 28, 179–182 (Journal IF: 12.104, Citations: 25).

Ongoing Research Projects

2011/2020: Research into brain tumors. Coordinator: Claudia Maria Coelho de Faria. Agency: Clientes Diversos. Coordinator Institution: 0. Reference: Biobanco de Tumores Cerebrais. Amount: 213993.00. Amount (total): 213993.00.

2012/2016: Dissecting the impact of IL7R gain-of-function mutations in T-cell leukemia. Coordinator: João Pedro Taborda Barata. Agency: Fundação Ciência e Tecnologia. Reference: PTDC/SAU-ONC/122428/2010. Amount: 165000.00. Amount (total): 165000.00.

2014/2018: Exploratory - iFCT. Coordinator: Ana Rita Freitas Martins de Matos Fragoso. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: Exploratório Ana Fragoso. Amount: 50000.00. Amount (total): 50000.00.

2016/2019: FAPESP/2015/2014 - Aberrant IL7R signaling in leukemogenesis: from the basics to potential therapeutics. Coordinator: João Pedro Taborda Barata. Agency: Fundação Ciência e Tecnologia. Amount: €199,778.00. Amount (total): 400000.00.

2015/2017: Selective death using a microRNA-detector system in T-cell acute lymphoblastic leuKemia. Coordinator: Ana Rita Freitas Martins de Matos Fragoso. Agency: Liga Portuguesa Contra o Cancro. Reference: Terry Fox - Rita Fragoso. Amount: 15000.00. Amount (total): 15000.00.

2015/2020: IL-7/IL-7R signaling networks in health and malignancy. Coordinator: João Pedro Taborda Barata. Agency: Comissão Europeia. Coordinator Institution: 0. Reference: ERC- 648455 - IL7SigNeTure. Amount: 1988125.00. Amount (total): 1988125.00.

2016/2019: Tumores Cerebrais. Coordinator: Claudia Maria Coelho de Faria. Agency: Fundação Millennium BCP. Reference: Tumores Cerebrais - Millenium. Amount: 90000.00. Amount (total): 90000.00.

Other Projects

2016/2018: Participation in the project "Towards outstanding research and training in tumour". Coordinator: Edgar Rodrigues Almeida Gomes. Agency: Comissão Europeia. Reference: Twinning - ReTuBi.

2016/2019: Participation in PRECISE Project – Programa de Atividades Conjuntas – Project number 016394 Precise (Promoção do avanço significativo do conhecimento na área de medicina de precisão e sua translação para benefício da sociedade), financed by the Comissão Diretiva do Programa Operacional Regional de Lisboa and by Fundação para a Ciência e a Tecnologia, I.P. Coordinator: Maria Carmo-Fonseca.

Publications in Peer Review Journals

S.T. Ribeiro, M. Tesio, J.C. Ribot, E. Macintyre, J.T. Barata, B. Silva-Santos (2016). Casein Kinase 2 controls the survival of normal thymic and leukemic gd T-cells via promotion of AKT signaling. Leukemia doi: 10.1038/leu.2016.363. [Epub ahead of print]. (IF= 12.104).

A. Melão, M. Spit, B.A. Cardoso, J.T. Barata (2016). Optimal IL-7R-mediated signaling, cell cycle progression and viability of T-cell acute lymphoblastic leukemia cells rely on CK2 activity. Haematologica 101 (11): 1368-1379. (IF= 6.671).

N.C. Correia, R. Fragoso, T. Carvalho, F.J. Enguita, J.T. Barata (2016). MiR-146b negatively regulates migration and delays progression of T-cell acute lymphoblastic leukemia. Scientific Reports 23 (6): 31894. (IF= 5.228).

S.L. Silva, A.S. Albuquerque, A. Serra-Caetano, R.B. Foxall, A.R. Pires, P. Matoso, S.M. Fernandes, J. Ferreira, R. Cheynier, R.M. Victorino, I. Caramalho, J.T. Barata, A.E. Sousa (2016). Human naïve regulatory T-cells feature high steady-state turnover and are maintained by IL-7. Oncotarget. 7 (11): 12163-12175. (IF= 5.008).

N.C. Correia, A. Melão, V. Póvoa, L. Sarmento, M. Gómez de Cedrón, M. Malumbres, F.J. Enguita, J.T. Barata (2016). microRNAs regulate TAL1 expression in T-cell acute lymphoblastic leukemia. Oncotarget 7 (7): 8268-8281. (IF= 5.008).

N.C. Correia*, M.-L. Arcangeli *, F. Pflumio**, J.T. Barata** (2016). Stem Cell Leukemia: how a TALented actor can go awry on the hematopoietic stage. Leukemia 30 (10): 1968-1978. (review) *co-first authors; ** co-corresponding authors (IF= 12.104).

C. Evangelisti, C. Evangelisti, F. Buontempo, A. Lonetti, E. Orsini, F. Chiarini, J.T. Barata, S. Pyne, N. Pyne, A.M. Martelli (2016). Therapeutic Potential of Targeting Sphingosine Kinases and Sphingosine 1-phosphate in Hematological Malignancies. Leukemia 30 (11): 2142-2151. (review) (IF= 12.104).

I. Andre-Schmutz, J.-C. Andrau, S. Ezine, F. Pflumio, J.T. Barata, T. Taghon. Lymphopoiesis (pp.122-123) in A. Engert, C. Balduini, A. Brand, B. Coiffier, C. Cordonnier, H. Döhner, T.D. de Wit, S. Eichinger, W. Fibbe, T. Green, F. de Haas, A. Iolascon, T. Jaffredo, F. Rodeghiero, G. Salles, J.J. Schuringa, C. Smand, and the other authors of the EHA Roadmap for European Hematology Research (2016). The European Hematology Association Roadmap for European Hematology Research: A Consensus Document. Haematologica 101 (2): 115-208. (IF= 6.671).

Invited Lectures and Seminars

Rita Fragoso. Selective death using a microRNA-detector system in T-ALL acute lymphoblastic leucemia. Jornadas de Investigação em Oncologia em Portugal LPCC-NRS 2016 – Desafios e Oportunidades, Lisbon, Portugal, 8 April.

Communications in International Conferences

S. Durum, J. Hixon, E. Senkevitch, S. Cramer, J.T. Barata, S. Walsh, W. Li (2016). Targeting the IL-7R Pathway in Leukemia with Jak Inhibitors and MAbs. CYTOKINES 2016 - 4th Annual Meeting of the International Cytokine and Interferon Society (ICIS), San Francisco, CA, USA, 16-19 October. (Oral Presentation)

Communications in National Conferences

P. Akkapeddi, J.T. Barata*, G. Bernardes*, D. Neri* (2016). Generation and characterization of a fully human antibody against the interleukin-7 receptor, a potential target for T-ALL. 2nd ASPIC International Congress, Porto, Portugal, 28-29 April. *co-senior authors. (Poster Presentation)

M. Oliveira, A.M. Gomes, L.R. Martins, J. Duarte, J.T. Barata (2016). STAT5 activation associates with high risk and poor prognosis in pediatric B-cell acute lymphoblastic leukemia. 2nd ASPIC International Congress, Porto, Portugal, 28-29 April. (Poster Presentation)

J. Ferreira da Silva, J.T. Barata (2016). Do IL-7R? Gain -of-function mutants signal from intracellular compartments? Implications for acute lymphoblastic leukemia. 2nd ASPIC International Congress, Porto, Portugal, 28-29 April. (Poster Presentation)

R. Fragoso, N.C. Correia, T. Carvalho, F.J. Enguita, J.T. Barata (2016). Tal1-regulated MIR-146b has a tumor suppressor role in T-cell acute lymphoblastic leukemia. 2nd ASPIC International Congress, Porto, Portugal, 28-29 April. (Poster Presentation)

I. Pinto, M. Lobato, R. Cabrita, J.T. Barata, R. Fragoso (2016). A dual role of NRARP in T-cell acute lymphoblastic leukemia pathogenesis. 2nd ASPIC International Congress, Porto, Portugal, 28-29 April. (Poster Presentation)

Organisation of Conferences

J.T. Barata. Member of the evaluation panel of the Poster Sessions; Research Day for Medical Students / 19th Workshop “Education through Science”, Faculdade de Medicina da Universidade de Lisboa, Portugal, 14 December 2016.

J.T. Barata. Co-Chair, Immunotherapies (2 June) and Cancer Immunotherapy (3 June) Sessions, XLII Annual Meeting of the Portuguese Society of Immunology, Oeiras, 1-3 June 2016.

Internationalisation

Our projects regularly involve collaborations with international research groups in Europe, US and Brazil. Current international collaborators include: Andres Yunes (Centro Infantil Boldrini, Brazil), Alberto Martelli (University of Bologna, Italy), Ben Seddon (UCL, UK), David Langenau (MGH, Harvard University, USA), Doreen Cantrell (University of Dundee, UK), Nigel Pyne (University of Strathclyde, UK), Paul Coffer (Utrecht UMC, The Netherlands), Scott Durum (NCI, USA), Silvio Perea (CIGB, Cuba).

We were awarded an FCT-FAPESP grant, for collaborative projects between Portuguese and Brazilian research groups from the state of São Paulo.

JT Barata participated in the elaboration of the roadmap for European hematological research of the European Hematology Association.

Prizes, Honours and Awards

H. Cadilha (GAPIC student in the lab in 2015) was awarded a best oral presentation (AIMS Meeting Research Competition) at the 7th Annual International Medical Students Meeting, Faculty of Medicine, University of Lisbon, 10-13 March, for his work on the involvement of sphingosine kinase 2 in IL-7-mediated effects in T-ALL.

C. Faria was awarded the *Bolsa D. Manuel de Mello Edição 2016* with the project "Identificação de novas terapias no tratamento do astrocitoma pilocítico em idade pediátrica".

Advanced Teaching

J.T. Barata coordinated (together with Sérgio Dias and Gonçalo Bernardes) and taught at the "Tissues and Tumors" week, LisbonBioMed International FCT PhD Program, iMM Lisboa, Faculty of Medicine, University of Lisbon, Lisbon, 11-15 January 2016.

R. Fragoso taught at the Course "Show me your mouse and I will show you your phenotype – histopathology in biomedical" CAML Advanced Course, iMM Lisboa, Faculty of Medicine of Lisbon University, Lisbon, 26-28 January 2016.

I. Alcobia, "Leucemia Linfoblástica Aguda: novas terapêuticas!" Mestrado em Biologia Molecular e Genética, Faculty of Medicine, University of Lisbon, Lisbon, Portugal, 24 May 2016.

J.T. Barata, “One of many roads to sail the sea”, 1st CEDOC PhD Retreat, CEDOC, NOVA Medical School, Lisbon, 9 September 2016.

J.T. Barata taught the topic “Signaling in Cancer” at the Advanced Course on “Fundamentals of Genetics, Development and Neoplasia”, International Postgraduate Programme, School of Health Sciences, University of Minho, Braga, Portugal, 27 October 2016.

Science and Society

The lab organized a visit for the students from Faculty of Sciences and Technology from Universidade Nova de Lisboa (in the context of their JORTEC meeting) on 4 February 2016.

Also on 4 February, we showed the lab and explained our goals and activities to 15 members of Gabinete de Saúde, Igualdade e Cidadania from Câmara Municipal de Odivelas.

Both J.T. Barata and C. Faria participated in Science Speed Dating sessions in the 7th Annual International Medical Students Meeting, Faculty of Medicine, University of Lisbon, 10-13 March.

The lab joined the Brain Tumor Team (BTT) on May 8th 2016 to participate in a run / walk event to create awareness for cancer research and, particularly, for brain tumor research. The BTT gathered health care professionals, scientists, patients and their families aiming to support cancer research and to create hope for the future of patients affected with brain cancer.

PhD Thesis Completed

Daniel Ribeiro, 12/12/2016, “Dissecting the Cellular and Molecular Mechanisms of IL-7-mediated Leukemia T- cell Survival, Proliferation and Cell Growth” University of Lisbon. Supervisor: João T. Barata.

Bernardes, Gonçalo J. L.

Major Interests / Objectives

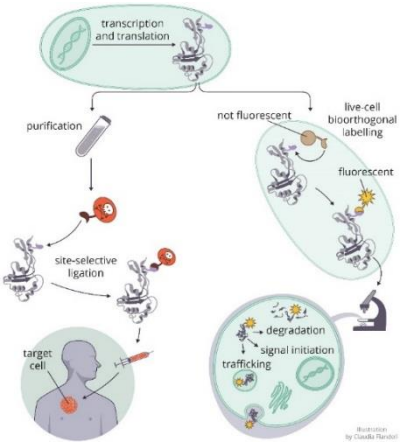
At GBernardes Lab, we work at the interface of Chemistry & Biology. At the core of our research program is the development of novel chemoselective methods that are compatible with biological systems, and their use to redesign the structure & function of proteins of biological & therapeutic interest, with the intention of understanding & influencing human disease.

In the area of synthetic biology, we are mostly interested in the specific delivery of toxic molecules to cancer cells and in the construction of homogenous glycoproteins as vaccines candidates. We are also investigating the delivery of therapeutic amounts of CO to diseased tissues, using CO-releasing molecules that have the potential to become safe treatments, by controlling CO release in vivo in a spatial and temporal manner.

Head of Laboratory

Gonçalo José Lopes Bernardes, PhD, Assistant Professor

Graphical Abstract



Research Team

Ana Filipa Pintéus da Cruz	PhD	Post-Doctoral Investigator (Started September)
Ana Maria dos Santos Guerreiro	Master	Lab Manager
Annabel Katharina Kitowski	Master	PhD Student (Started May)
Charlotte Louise Baker	Master	PhD Student
Florian Sieglitz	PhD	Post-Doctoral Investigator
João Daniel da Silva Seixas	PhD	Post-Doctoral Investigator

Maria Inês Sousa de Albuquerque	Master	Investigator
Marta Franco Coimbra Marques	PhD	Post-Doctoral Investigator (Started November)
Padma Akkapeddi	Master	PhD Student, NA
Pedro Miguel Saraiva Duarte Cal	PhD	Post-Doctoral Investigator, Faculdade Farmácia da Universidade de Lisboa
Pedro Ricardo Morgado Henriques	Master	PhD Student (Started April)
Roberto Russo	Master	PhD Student (Started April)
Rui Traquete	Master	PhD Student
Susana André Lima Lobo	PhD	Post-Doctoral Investigator
Tiago Correia de Oliveira Rodrigues	PhD	Manager, Faculdade Farmácia da Universidade de Lisboa, Assistant Professor

Laboratory Keywords / Research Areas

Site-selective protein modification, Synthetic biologics, Targeted cancer therapeutics, Carbohydrate-based vaccines.

Major Scientific Achievements

- Marie Sklodowska–Curie Fellowship to Dr João Seixas;

- Harrison-Meldola Memorial Prize to Dr. Gonçalo Bernardes;

- Chem Soc Rev Emerging Investigator Lectureship 2016 to Dr. Gonçalo Bernardes;

- International Award of the Belgian Society of Pharmaceutical Sciences (BSPS) 2016 to Dr. Gonçalo Bernardes;

- RSC–SAFEA Visiting Researcher Programme – China 2016 to Dr. Bernardes;

- Organization of the 1st workshop of the ProteinConjugates ITN;

- RTP, Telejornal de 24/11/2016 – Tratamento do cancro;

- Sábado magazine – Quais vão ser os maiores avanços da ciência em 2016?;

- Angew. Chem. Int. Ed. 2016, 55, 14683 –14687;

- Nature Communications 2016, 7, 13128;

- Angew. Chem. Int. Ed. 2016, 55, 11077-11081;

- Chem. Soc. Rev. 2016, 45, 6130–6137 Emerging Investigators Issue 2016;

- Angew. Chem. Int. Ed., 2016, 55, 1714–1718. Selected as a Hot Paper;

- Nature Chem. 2016, 8, 103–113 Highlighted in Nature Chem. 2016, 8, 91: A little less conjugation, a little more accuracy.

Selected Publications

Rodrigues T; Sieglitz F; Somovilla VJ; Cal PMSD; Galione A; Corzana F; Bernardes GJL (2016) Unveiling (-)-Englerin A as a modulator of L-type calcium channels. Angew. Chem. Int. Ed 55, 11077. http://onlinelibrary.wiley.com/doi/10.1002/anie.201604336/full (Journal IF: 10.42, Citations: 0).

Krall N; da Cruz FP; Boutureira O; Bernardes GJL* (2016) Site-selective protein-modification chemistry for basic biology and drug development. Nature Chemistry 8, 103. http://www.nature.com/nchem/journal/v8/n2/full/nchem.2393.html (Journal IF: 27.893, Citations: 14). Highlighted in Nature Chem. 2016, 8, 91: A little less conjugation, a little more accuracy.

Eptor potential (TRP) channels as potential anti-cancer agents R (2016) Natural product modulators of transient receptor potential (TRP) channels as potential anti-cancer agents. Chem. Soc. Rev 45, 6130. http://pubs.rsc.org/en/Content/ArticleLanding/2016/CS/C5CS00916B#!divAbstract. (Journal IF: 28.70, Citations: 13) Emerging Investigators Issue 2016.

Crockett MP; Evans AM; Worthington MJH; Albuquerque IS; Slattery AD; Gibson CT; Bernardes GJL, Chalker JM (2015) Sulfur-Limonene Polysulfide: A Material Synthesized Entirely from Industrial Waste and Its Use in Removing Toxic Metals from Water and Soil. Angew Chem 54, 1-6. http://onlinelibrary.wiley.com/wol1/doi/10.1002/anie.201508708/abstract (Journal IF: 11.261, Citations: 9).

Boutureira O; Bernardes GJL* (2015) Advances in chemical protein modification. Chemical Reviews 115, 2174. http://pubs.acs.org/doi/abs/10.1021/cr500399p (Journal IF: 46.568, Citations: 30).

Ongoing Research Projects

2014/2018: PerBioImage— Exploring pericyclic reactions for bioorthogonal imaging of biological - GA 630731CIG. Coordinator: Gonçalo José Lopes Bernardes. Agency: Comissão Europeia. Reference: PerBioImage. Amount: 100000.00. Amount (total): 100000.00.

2014/2018: Exploratório - IFCT. Coordinator: Gonçalo José Lopes Bernardes. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: Exploratório Gonçalo Bernardes. Amount: 50000.00. Amount (total): 50000.00.

2015/2019: A training network for the rational design of the next generation of well-defined glycoconjugate vaccines. Coordinator: Gonçalo José Lopes Bernardes. Agency: Comissão Europeia. Reference: GLYCOVAX. Amount: 230148.36. Amount (total): 3560797.08.

2015/2019: A training network for the chemical site-selective modification of proteins: Preparation of the next-generation of therapeutic chemically-defined protein conjugates. Coordinator: Gonçalo José Lopes Bernardes. Agency: Comissão Europeia. Reference: ProteinConjugates. Amount: 741939.79. Amount (total): 2542770.72.

2016/2019: BLink: Novas estratégias de bioconjugação e transporte dirigido de ácidos borónicos. Coordinator: Gonçalo José Lopes Bernardes. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/QEQ-QOR/1434/2014. Amount: 20001.00. Amount (total): 0.00.

2016/2016: Directors' Exploratory Projects (DEP) 2016. Coordinator: Gonçalo José Lopes Bernardes. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: DEP 2016 GBernardes. Amount: 50000.00. Amount (total): 0.00.

2016/2018: BMX-Targeted Ligand-Drug Conjugates for Prostate Cancer. Coordinator: João Daniel da Silva Seixas. Agency: Comissão Europeia. Reference: LDC4PCaTher. Amount: 160635.60. Amount (total): 0.00.

Other Projects

2013/2017: Marie Curie Career Installation Grant. Coordinator: Goncalo Bernardes.

2014/2017: Marie Curie Career Installation Grant. Coordinator: Gonçalo Bernardes.

2016/2018: Molecular Imaging Techniques of Hepatic Fibrosis from FCT Portugal/Harvard Medical Schoo. Coordinator: Gonçalo Bernardes.

2016/2019: Participation in PRECISE Project – Programa de Atividades Conjuntas – Project number 016394 Precise (Promoção do avanço significativo do conhecimento na área de medicina de precisão e sua translação para benefício da sociedade), financed by the Comissão Diretiva do Programa Operacional Regional de Lisboa and by Fundação para a Ciência e a Tecnologia, I.P. Coordinator: Maria Carmo-Fonseca.

Publications in Peer Review Journals

Rodrigues T; Bernardes GJL* (2016) Antibody-drug conjugates: The missing link Nature Chemistry, 8, 1088–1090 (Journal IF- 27.893).

Oliveira BL, Guo Z; Boutureira O; Guerreiro A; Jiménez-Osés G; Bernardes GJL* (2016) A minimal, unstrained S-allyl handle for pretargeting Diels–Alder bioorthogonal labelling in live cells Angew Chem Int Ed 2016, 55, 14683–14687 (Jounarl IF-10,42).

Bernardim B; Cal PMSD; Matos MJ; Oliveira BL; Martínez-Sáez N; Albuquerque IS; Corzana F; Burtoloso ACB; Jiménez-Osés G; Bernardes GJL* (2016) Stoichiometric and Irreversible Cysteine-selective Protein Modification using Carbonylacrylic Reagents Nature Commun. 2016, 7, 13128 (Jounar IF- 27,893).

Carvalho SB; Freire JM; Moleirinho MG; Monteiro F; Gaspar DMD; Castanho MARB; Carrondo MJT; Alves PMA; Bernardes GJL*; Peixoto C (2016) Bioorthogonal Strategy for Bioprocessing of Specific-site-functionalized Enveloped Influenza-virus-like Particles. Bioconjugate Chem. 2016, 27, 2386–2399 (Journal IF:4,71).

Fernández EMS; Navo CD; Martínez-Sáez N; Gonçalves-Pereira R; Somovilla VJ; Avenoza A; Busto JH; Bernardes GJL; Jiménez-Osés G; Corzana F; García Fernández JM; Mellet CO; Peregrina JM (2016) Tn Antigen Mimics Based on sp2-Iminosugars with Affinity for an anti-MUC1 Antibody .Org. Lett. 2016, 18, 3890–3893. (Journal IF- 6.732).

Faustino H; Silva MJSA; Veiros LF; Bernardes GJL; Gois PMP (2016) Iminoboronates are efficient intermediates for selective, rapid and reversible N-terminal cysteine functionalisation Chem. Sci. 2016, 7, 5052–5058. (Journal IF: 9.144).

Akkapeddi P; Azizi S-A; Freedy A; Cal PMSD; Gois PMP; Bernardes GJL* (2016) Construction of Homogeneous Antibody-drug Conjugates using Site-selective Protein Chemistry. Chem. Sci. 2016, 7, 2954–2963. (Journal IF: 9.144).

Montes-Grajales D; Bernardes GJL*; Olivero-Verbel JT (2016) Urban endocrine disruptors targeting breast cancer proteins. Chem. Res. Toxicol. 2016, 29, 150–161. (Journal IF:3.21).

Invited Lectures and Seminars

Bernardes, GJL. Instituto Superior Técnico (IST), Lisbon, Portugal, 01/2016.

Bernardes, GJL. Institute for Research in Biomedicine, Barcelona, Spain, 01/2016.

Bernardes, GJL. Next-Generation Drug Conjugates – supported by Albumedix, Cambridge, UK, 02/2016.

Bernardes, GJL. TEDx IST – Alameda, Lisbon, Portugal, 02/2016.

Bernardes, GJL. Research Fellows' Conference 2016 – Royal Society, London, UK, 03/2016.

Bernardes, GJL. Departamento de Química, UFMG, Belo Horizonte, Brasil, 03/2016.

Bernardes, GJL. Protein and Antibody Engineering Europe PEGS, Engineering ADCs, Boston, US, 04/2016.

Bernardes, GJL. Department of Chemical Biology, Peking University – PKU, China, – Host: Prof Peng Chen 04/2016.

Bernardes, GJL. Department of Chemistry, Tsinghua University (China) – Host: Prof Yan-mei Li 04/2016.

Bernardes, GJL. School of Pharmaceutical Science and Technology, Tianjin University, China – Host: Prof Jay Siegel 04/2016.

Bernardes, GJL. 50th ESBOC Symposium – A Celebration of Biological & Organic Chemistry, Gregynog, Wales, 05/2016.

Bernardes, GJL. Department of Chemistry, University of Southampton, UK, 06/2016.

Bernardes, GJL. 8th PEGS Europe Protein & Antibody Engineering Summit, Lisbon, Portugal, 10/2016.

Bernardes, GJL. Institut Curie, Paris, France, 11/2016.

Bernardes, GJL. Centro de Investigaciones Biológicas CSIC Madrid, Spain, 11/2016.

Communications in International Conferences

Seixas, J. Small molecule drug conjugates for selective prostate cancer therapy. XXIV EFMC International Symposium on Medicinal Chemistry, 28-08 a 01-09 de 2016. (Poster)

Cal, P.M.S.D. Chemical Pharmacology of Proteins Conjugates.PEGS Europe - Protein & Antibody Enfineering Summit, Lisbon, Portugal, 31 October - 4 November 2016. (Oral Presentation)

Communications in National Conferences

Traquete R. Small Molecule Drug Conjugates for Selective Cancer Therapy. X CAML PhD Student Meeting, 30-03 a 01-04 2016 iMM Lisbon, Portugal. (Poster)

Albuquerque, I. A modular approach to homogenius synthetic glycoprotein vaccines. X CAML PhD Student Meeting, 30-03 a 01-04 2016 iMM Lisbon, Portugal. (Oral Presentation)

Bernardes G.J.L. Protein Conjugates: Preparation and Pharmacology. ProteinConjugates 1stWorkshop "An Introduction to Modern Bioconjugation", iMM Lisboa, Portugal, September 6-9, 2016.

Rodrigues T. Computational Chemistry - pratical session. ProteinConjugates 1st Workshop "An Introduction to Modern Bioconjugation", iMM Lisboa, Portugal, September 6-9, 2016.

Sieglitz, F. Deciphering the anti-inflamatory signaling of small gaseous messengers- a novel approach using targeted delivery of H2S, 3rd IMM PostDoc Day, 25-09-2016, iMM Lisboa, Portugal.

Lobo S. Desulfovibrio vulgaris CbiKP cobaltochelatase: evolution of a haem binding protein orchestrated by the incorporation of two histidine residues. 12-10-2016 - Scan Paper Highlight at ITQB.

Organisation of Conferences

Bernardes G. Organizer and speaker at the "An Introduction to Modern Bioconjugation" Workshop from ProteinConjugates ITN, iMM Lisboa, Portugal.

Internationalisation

- Dr. Gonçalo Bernardes was awarded with the RSC–SAFEA Visiting Researcher Programme – China 2016 that allowed him to present the work of the group in China in a series of lectures in different Universities.

- Dr Gonçalo Bernardes was awarded with the Chem Soc Rev Emerging Investigator Lectureship 2016. With this award he was able to travel to several countries presenting the work of the group in several lectures in several Universities.

- Our Group was responsible for the organization of the 1st Workshop of the Protein Conjugates ITN that counted with the participation of students and supervisors from 6 different countries/Institutions.

Prizes, Honours and Awards

School of Chemistry, University of Bristol – RSC Harrison-Meldola Memorial Prize Lecture 2016 to G.J.L. Bernardes.

Belgium Society of Pharmaceutical Sciences Forum, Brussels (Belgium) – International Award Lecture 2016.

XXIV EFMC International Symposium on Medicinal Chemistry, Manchester (UK) Chem Soc Rev Emerging Investigator Lecture 2016 to G.J.L. Bernardes.

Harrison-Meldola Memorial Prize – Royal Society of Chemistry 2016 to G.J.L. Bernardes.

Chem Soc Rev Emerging Investigator Lectureship 2016 to G.J.L. Bernardes.

RSC–SAFEA Visiting Researcher Programme – China 2016 to G.J.L. Bernardes.

International Award of the Belgian Society of Pharmaceutical Sciences (BSPS) 2016 to G.J.L. Bernardes.

Industry Contract Research

Hovione Farmaciência SA – Industrial contract (€150,000) 2014–2017.

Advanced Teaching

Bernardes G.J.L. Protein Conjugates: Preparation and Pharmacology. ProteinConjugates 1st Workshop "An Introduction to Modern Bioconjugation", iMM Lisboa, Portugal, September 6-9, 2016. Bernardes G.J.L. was also the organizer of this workshop.

Rodrigues T. Computational Chemistry - pratical session. ProteinConjugates 1st Workshop "An Introduction to Modern Bioconjugation", iMM Lisboa, Portugal, September 6-9, 2016.

Science and Society

Seixas. J. Speed dating eith undergraduate students at the Jortec 2016 Jornadas Tecnológicas da Faculdade de Ciências e Tecnologia da Universidade Nova de Lisboa 01-02-2016.

Carmo-Fonseca, Maria

Major Interests / Objectives

Gene regulation is central to all biology. RNA molecules, with their ability to both encode information and exert catalytic activities, play a key role in the regulation of gene expression. Our group aims to discover molecular pathways and mechanisms implicating RNA in human health and disease. More specifically, we study RNA splicing and its role in the regulation of gene expression in cancer and genetic diseases, and we are exploring new medical applications for RNA.

Head of Laboratory

Maria do Carmo Salazar Velez Roque da Fonseca, MD/PhD, Full Professor

Graphical Abstract

Research Team

Ana Catarina de Jesus	Master	Technician (Left April)
Ana Cláudia Bernardino Raposo Alves	Master	Technician (Started December)
Ana Cláudia Dourado Clemente	Master	Consultant (Started December)
Ana Rita Ramos Pires Ferreira	Graduate	MSc Student
António Duarte Zapico Bicho de Sousa Franco	Graduate	MSc Student
Ariana Mónica Silva Peredo	Graduate	MSc Student (Started February)
Bruno Miguel Bernardes de Jesus	PhD	Investigator
Carla Marina Pereira Gomes	Master	Investigator (Started July)
Catarina Alves do Vale	Graduate	Trainee
Célia Carvalho	PhD	Investigator, Faculdade Medicina da Universidade de Lisboa, Assistant Professor

Dinora Levy	Graduate	Administrative, Faculdade Medicina da Universidade de Lisboa
Evguenia Pavlovna Bekman	PhD	Investigator, ISCSEM, Assistant Professor
Inês Cordeiro Filipe	Master	Trainee (Started October)
Joana Desterro	MD/PhD	Investigator, Faculdade Medicina da Universidade de Lisboa, Assistant Professor
João Paulo Von Gilsa Lopes	Graduate	MSc Student (Started February)
João Pedro Abreu Pessoa	PhD	Post-Doctoral Investigator
José António Branco de Albuquerque	Master	Technician, Faculdade Medicina da Universidade de Lisboa, Technician
Kenny Patrick Figueira Rebelo	Graduate	MSc Student
Mariana Isabel Lopes Joaquim	Graduate	MSc Student (Left August)
Miguel Torres Santana	Graduate	Trainee (Started September)
Noélia Maria Fernandes Custódio	PhD	Investigator, Faculdade Medicina da Universidade de Lisboa, Assistant Professor
Pedro António Pereira Prudêncio	Master	PhD Student (Started June)
Renata Zugaib	Master	Trainee
Rita Catarina Vaz Drago	Master	PhD Student
Rita Mingot de Almeida Mendes de Almeida	Master	PhD Student
Robert M. Martin	PhD	Post-Doctoral Investigator (Left March)
Rodrigo Paiva Gonçalves	Graduate	Trainee (Started October)
Rui Gonçalo Viegas Russo da Conceição Martinho	PhD	Visiting Researcher (Started June)
Sandra Martins	PhD	Investigator, Faculdade Medicina da Universidade de Lisboa, Assistant Professor
Sara Filipa Azevedo Barros	Graduate	MSc Student
Sarah Barneze	Graduate	MSc Student
Sarah Marie Faria	Master	MSc Student (Started February)
Sérgio Manuel Pires Marinho	Graduate	Technician, Faculdade Medicina da Universidade de Lisboa
Simão José Teixeira da Rocha	PhD	Investigator
Soraia Vanessa Guerreiro da Silva	Graduate	MSc Student
Teresa Carvalho	PhD	Investigator, Faculdade Medicina da Universidade de Lisboa, Assistant Professor
Teresa Maria Pereira da Silva	Master	PhD Student, Superior Técnico
Vanessa Borges Pires	Master	Trainee (Left August)

Laboratory Keywords / Research Areas

Gene expression, RNA splicing, RNA in disease.

Major Scientific Achievements

Many individual steps in gene expression are kinetically coupled, but how temporal relationships between chemical reactions contribute to the output of the final gene product is still poorly understood. We developed a strategy that permits direct measurements of intron dynamics in

single pre-mRNA molecules in live cells, and the results reveal that splicing can occur much faster than previously thought (Martin 2013; Martin 2016; Rino 2016). In collaboration with the Proudfoot lab in Oxord, we have pioneered genome-wide analysis of nascent RNA complexes and we are unraveling unanticipated dynamic links between Pol II and RNA processing during biogenesis of protein coding pre-mRNAs and non-coding RNAs (Nojima 2015; Nojima 2016; Custódio 2016; Schlackow in press). We anticipate our findings will open new avenues for studying how kinetic mechanisms impact on gene regulation.

Selected Publications

Grosso, A.R., Gomes, A.Q., Barbosa-Morais, N.L., Caldeira, S., Thorne, N.P., Grech, G., von Lindern, M., and Carmo-Fonseca, M (2008) Tissue-specific splicing factor gene expression signatures. Nucleic Acids Research doi: 10.1093/nar/gkn463, 36, 4823. http://www.ncbi.nlm.nih.gov/pubmed/18653532 (Journal IF: 9.1, Citations: 68).

de Almeida, SF, Grosso, AR, Koch, F, Fenouil, R, Carvalho, S, Andrade, J, Levezinho, H, Gut, M, Eick, D, Gut, I, Andrau, JC, Ferrier P, Carmo-Fonseca, M (2011) Splicing enhances recruitment of methyltransferase HYPB/Setd2 and methylation of histone H3 Lys36. Nature Struct. Mol. Biol. doi: 10.1038/nsmb.2123, 18, 977. http://www.ncbi.nlm.nih.gov/pubmed/21792193 (Journal IF: 13.3, Citations: 92).

Martins, SB, Rino, J., Carvalho, T., Carvalho, C., Yoshida, M., Klose JM, de Almeida, SF, Carmo-Fonseca, M. (2011) Spliceosome assembly is coupled to RNA polymerase II dynamics at the 3' end of human genes. Nature Struct. Mol. Biol. doi: 10.1038/nsmb.2124, 18, 1115. http://www.ncbi.nlm.nih.gov/pubmed/21892168 (Journal IF: 13.3, Citations: 40).

Martin, RM, Rino, J, Carvalho, C, Kirchhausen, T, Carmo-Fonseca, M. (2013) Live-cell visualization of pre-mRNA splicing with single-molecule sensitivity. Cell Reports doi: 10.1016/j.celrep.2013.08.013, 4, 1144. http://www.ncbi.nlm.nih.gov/pubmed/24035393 (Journal IF: 8.3, Citations: 15).

Nojima T, Gomes T, Grosso AR, Kimura H, Dye MJ, Dhir S, Carmo-Fonseca M, and Proudfoot N. (2015) Mammalian NET-seq reveals genome-wide nascent transcription coupled to RNA processing. CELL doi: 10.1016/j.cell.2015.03.027, 161, 526 http://www.ncbi.nlm.nih.gov/pubmed/25910207. (Journal IF: 32.2, Citations: 8).

Ongoing Research Projects

2012/2016: PIRSES-GA-2012-318981. Coordinator: Maria do Carmo Salazar Velez Roque da Fonseca. Agency: Comissão Europeia. Reference: RNA_Regulomics_GA318981. Amount: 67200.00. Amount (total): 155400.00.

2014/2017: Epigenética e splicing alternativo: papel na diferenciação de células imunitárias T e na leucemia. Coordinator: Maria do Carmo Salazar Velez Roque da Fonseca. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: FCT-ANR/BIM-ONC/0009/2013. Amount: 200000.00. Amount (total): 409874.00.

2015/2016: Fundo IMM - Laço: A caminho da cura. Coordinator: Maria do Carmo Salazar Velez Roque da Fonseca. Agency: Laço Associação de Solidariedade Social. Reference: Laço - MCFonseca. Amount: 75000.00. Amount (total): 75000.00.

2015/2016: Targeting of the UBE3A antisense long non-coding RNA in neurons derived from Angelman syndrome patients. Coordinator: Maria do Carmo Salazar Velez Roque da Fonseca. Agency: José de Mello Saúde S.G.P.S. Reference: Bolsa Pedro Maria José de Mello Costa Duarte. Amount: 12500.00. Amount (total): 12500.00.

2015/2020: Projecto de Investigação Exploratória. Coordinator: Simão José Teixeira da Rocha. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: Projecto de Investigação Exploratória. Amount: 50000.00. Amount (total): 50000.00.

2015/2020: Projecto de Investigação Exploratória. Coordinator: Bruno Miguel Bernardes de Jesus. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: Projecto de Investigação Exploratória. Amount: 49961.00. Amount (total): 49961.00.

2016/2017: PESQUISA DE MUTAÇÕES NOS GENES IDH. Coordinator: Maria do Carmo Salazar Velez Roque da Fonseca. Agency: Celgene Sociedade Unip., Lda. Reference: Celgene - pesquisa de mutações nos genes IDH. Amount: 2000.00. Amount (total): 2000.00.

2016/2019: The non-coding transcriptome in stemness and aging. Coordinator: Bruno Miguel Bernardes de Jesus. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/BIM-MED/0032/2014. Amount: 188175.00. Amount (total): 188175.00.

2016/2019: Molecular constraints to pre-mRNA splicing in fast dividing cells. Coordinator: Maria do Carmo Salazar Velez Roque da Fonseca. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/BEX-BID/0395/2014. Amount: 98888.00. Amount (total): 198831.00.

2016/2019: PRECISE Project – Programa de Atividades Conjuntas – Project number 016394 Precise (Promoção do avanço significativo do conhecimento na área de medicina de precisão e sua translação para benefício da sociedade), financed by the Comissão Diretiva do Programa Operacional Regional de Lisboa and by Fundação para a Ciência e a Tecnologia, I.P. Coordinator: Maria Carmo-Fonseca. Amount: 1.199.140,10. Amount (total): 2.499.827,92.

2016/2019: Making sense of antisense transcription. Coordinator: Maria do Carmo Salazar Velez Roque da Fonseca. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/BEX-BCM/5899/2014. Amount: 200000.00. Amount (total): 200000.00.

2016/2019: Comprehensive study of the dynamics of epigenetic processes involving lncRNAs during iPSC reprogramming. Coordinator: Simão José Teixeira da Rocha. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/BEX-BCM/2612/2014. Amount: 157880.00. Amount (total): 157880.00.

Publications in Peer Review Journals

Schlackow M, Nojima T, Gomes T, Dhir A, Carmo-Fonseca M, Proudfoot NJ. Distinctive patterns of transcription and RNA processing for human lincRNAs. Mol Cell (in press).

Sridhara SC, Carvalho S, Grosso AR, Gallego-Paez LM, Carmo-Fonseca M, de Almeida SF. Transcription dynamics prevent RNA-mediated genomic instability through SRPK2-dependent DDX23 phosphorylation. Cell Reports (in press).

Rino J, de Jesus AC, Carmo-Fonseca M (2016) STaQTool: Spot tracking and quantification tool for monitoring splicing of single pre-mRNA molecules in living cells. Methods 98: 143-149.

Martin RM, Rino J, de Jesus AC, Carmo-Fonseca M (2016) Single-molecule live-cell visualization of pre-mRNA splicing. Methods Mol Biol. 1358: 335-350.

Nojima T, Gomes T, Carmo-Fonseca M, Proudfoot NJ. (2016) Mammalian NET-seq analysis defines nascente RNA profiles and associated RNA processing genome-wide. Nat Protoc. 11(3): 413-428.

Martins AF, Martins JM, do Vale S, Dias T, Silveira C, da Silva IR, Carmo-Fonseca M (2016) A rare missense variant in RET exon 8 in a Portuguese family with atypical multiple endocrine neoplasia type 2A. Hormones 15 (3): 435-440.

Other Publications International

Custódio N, Carmo-Fonseca M (2016) Co-transcriptional splicing and the CTD code. Crit. Rev. Biochem. Mol. Biol. 51(5):395-411.

da Rocha S.T. and Heard E. Novel players in X-inactivation – insights into Xist-mediated silencing and chromosome conformation. Nature Structural and Molecular Biology (in press) Review.

Invited Lectures and Seminars

Carmo-Fonseca, M. Single-molecule imaging of mRNA biogenesis. Seminar at France BioImaging Advanced Training, Montpellier, France. 18-22 January 2016.

Carmo-Fonseca, M. Biogenesis of mRNA revealed by single-molecule imaging and mNET-seq. Invited speaker at Swiss RNA Workshop, Bern, Switzerland. January 22, 2016.

Carmo-Fonseca, M. Transcription-coupled splicing. Seminar at Institut de Génétique Humaine, Montpellier, France. January 29, 2016.

Carmo-Fonseca, M. Single-molecule imaging of RNA in live cells. Invited speaker at the Annual Meeting of the Biophysical Society, Los Angeles, California. February 27-March 2, 2016.

Carmo-Fonseca, M. When splicing meets transcription. Seminar at international course on Post-transcriptional gene regulation, Institut Curie, Paris, France. March 7-11 2016.

Carmo-Fonseca, M. Single-molecule imaging of mRNA biogenesis in live cells. Invited speaker at the Gordon Research Conference “Single Molecule Approaches to Biology”. Hong Kong, China, July 3-8, 2016.

Carmo-Fonseca, M. Kinetics of RNA splicing: from single-molecule live-cell imaging to nascent transcript sequencing. Invited speaker at the 7th EMBO Meeting. Mannheim, Germany, September 10-13, 2016.

Carmo-Fonseca, M. Targeting non-coding RNAs in biomedical research. Invited speaker at RNA-Medicine: from RNA discoveries to future therapies. Berlin, Germany, November 8, 2016.

Carmo-Fonseca, M. Transcription and splicing in close encounter. Invited speaker at Symposium Mechnisms of Gene Regulation. Porto, 14 December 2016.

da Rocha S. T. Mechanistic insights into Xist lncRNA-mediated recruitment of chromatin modifiers. Invited speaker at EMBO Workshop on Systems Biology of non-coding RNAs.Weizmann Institute of Science, Rehovot, Israel 8-11 February 2016.

da Rocha S.T. and Duarte S.T. Angelman syndrome, human genetics, RNA and beyond. Joint invited speakers at 5th Angelman International Scientific Conference. Lisbon, Portugal, 30 September 2016.

da Rocha S. T. Mechanistic insights into Xist lncRNA-mediated recruitment of chromatin modifiers during X-chromosome inactivation. Invited speaker at UV-Biotech, University of Coimbra, 16 March 2016.

Communications in International Conferences

da Rocha S. T., Picard C., Pires V., Carmo-Fonseca M. And Heard E. Genetic dissection of Xist reveals mechanistic insights of conserved functional RNA domains. Poster presented at the Royal Society Meeting on X-chromosome inactivation: a tribute to Mary Lyon. London, UK, 3-5 October 2016.

Bruno Bernardes de Jesus, Sara Barros, Sérgio Pires Marinho, Catarina Vale, Dafni Chondronasiou, Manuel Serrano and Maria Carmo-Fonseca. A long non-coding RNA antisense of Zeb2 enhances pluripotency and reprogramming. Poster presented at the Keystone Symposia Conference, noncoding RNAs in health and Disease, Santa Fé, NM, USA, February 21-24, 2016.

Silva TP, Bekman E, Fernandes TG, Rodrigues CAV, Diogo MM, Cabral JMS, Carmo-Fonseca M. 3D Cerebellar differentiation and maturation from Human Induced Pluripotent Stem Cells. Oral presentation at EMBO Symposium on Organoids: Modelling Organ Development and Disease in 3D Culture, Heidelberg, Germany, 12th-15th October 2016.

Communications in National Conferences

António Sousa-Franco, Carla Gomes, Sérgio Marinho, Maria Carmo-Fonseca, Bruno Bernardes de Jesus. The potential role of long non-coding RNAs (lncRNAs) in the circuitry controlling direct conversion. Poster presented at 1st Symposium on Ageing Research @ CNC, 30 September, Coimbra.

Bruno Bernardes de Jesus, António Sousa-Franco, Carla Gomes, Sérgio Marinho, Maria Carmo-Fonseca. Long non-coding RNAs in reprogramming and pluripotency. Oral presentation at the 1st Symposium on Ageing Research @ CNC, 30 September, Coimbra.

Internationalisation

Participation in an EC-funded Initial Training Network entitled “RNPnet: RNP structure, function and mechanism of action”.

Participation in an EC-funded joint Exchange programme entitled “RNA_REGULOMICS” with the Sao Paulo State University at Botucatu, Brazil.

Collaboration with Prof T. Kirchhausen at Harvard Medical School on RNA imaging in living cells.

Collaboration with Prof. N. Proudfoot at the University of Oxford on bioinformatics analysis of transcription and co-transcriptional RNA processing.

Prizes, Honours and Awards

Cristiano Esteves was awarded in the 20th edition of the program “Educação pela Ciência” (GAPIC) with the project entitled “Genetic dissection of conserved RNA modules of human XIST lncRNA implicated in X-inactivation using iPSCs”. Supervisor: Simão Rocha.

Advanced Teaching

Bekman E. "Gene editing tools in gene therapy" PhD.Program in Bioengineering, Lisboa, 12 de Maio de 2016.

Carvalho, T. and Bekman, E. Instructors in the Practical Workshop “Stem Cell Biology”, 6th AIMS Meeting, 10th-13th March 2016, Institute of Molecular Medicine, Faculty of Medicine, University of Lisbon, Portugal.

Martins, S. Orientation of the laboratory training of Beatriz Lopes Draiblate, 19º GAPIC Program "Educação pela Ciência", Institute of Molecular Medicine, Faculty of Medicine, University of Lisbon, Portugal. Tutor: Sandra Martins, € 2.500.

Martins, S. and Carvalho, T. 14th April 2016. Ludwig Maximilian University of Munich PhD. Program, Institute of Molecular Medicine, Lisbon, Portugal.

Carvalho, T. and Martins, S. Supervision of the laboratory training of Pascale Francis and Jacqueline Larizza, Standard Research Exchange Project, Summer Interships, 1st- 31th July 2016, Institute of Molecular Medicine, Faculty of Medicine, University of Lisbon, Portugal.

da Rocha S.T. X-inactivation - a paradigm of epigenetic regulation mediated by the Xist long non-coding RNA. Postgraduate Course on Epigenetics – from mechanisms to disease. ICVS, School of Health Sciences, University of Minho, Braga, Portugal 21 April 2016.

da Rocha S.T. The epigenetics of X-inactivation. Module of epigenomics of metabolic disease of the doctoral program on Metabolism – clinics and experimentation, CIM, Faculty of Medicine of University of Porto, 27 July 2016.

da Rocha S. T. Supervision of the laboratory training of the students Mariana Oliveira and Cristiano Esteves, Lab Research Internships, Faculty of Medicine of University of Lisbon, 18-29 July 2016.

Bernardes de Jesus, B. Master in Evolution and developmental biology – FCUL, Lisbon, May 2016.

Bernardes de Jesus, B. Master in Cell and molecular biology – FCTUC, Coimbra. May 2016.

Bernardes de Jesus, B. PhD program in Integrative Biology and Biomedicine – IBB, IGC, (Oeiras), May 2016.

Bernardes de Jesus, B. Supervision of the internship (14 weeks) student Sarah Faria, integrated in the Molecular and cell biology MSc. Program from the Université Pierre et Marie Curie (Paris VI) – UPMC.

Science and Society

Carmo-Fonseca, M. Empreendedorismo: as dinamicas empresariais e das instituições. Ciclo de Conferências na Ordem dos Engenheiros. Lisboa, 31 Março 2016.

Carmo-Fonseca, M. Os Hospitais: reforma do serviço nacional de saúde. Lisboa, 21 Junho 2016.

Carmo-Fonseca, M. O futuro da Humanidade. Noite Europeia dos Investigadores. Lisboa, 30 Setembro 2016.

Carmo-Fonseca, M. Centros Académicos de Medicina. Dia da Academia Nacional de Medicina. Lisboa, 25 Novembro 2016.

Carmo-Fonseca, M. Jovens Investigadores. Fórum de Investigação e Desenvolvimento em Saúde. Lisboa, 3 Novembro 2016.

Carmo-Fonseca, M. Investigação e publicação nos currículos do curso de medicina. Simpósio Acta Médica Portuguesa. Porto, 4 Novembro 2016.

Carvalho, T. and Martins, S. Orientation of the laboratory activities of students from Colégio Valsassina, participating in the activity "A minha Primeira Experiência no mundo do trabalho". 15th-17th June 2016, Institute of Molecular Medicine, Faculty of Medicine, University of Lisbon, Portugal.

MSc Thesis Completed

Sara Azevedo Barros 05/07/2016 A long non-coding RNA regulating cellular reprogramming Mestrado em Biologia Evolutiva e do Desenvolvimento, Faculdade de Ciências da Universidade de Lisboa Bruno Bernardes de Jesus.

António de Sousa Franco 23/11/2016 Long non-coding RNA contributes to direct conversion reprogramming Mestrado em Genética Molecular e Biomedicina, Faculdade de Ciências e Tecnologias da Universidade Nova de Lisboa Bruno Bernardes de Jesus.

Ariana Mónica Silva Peredo 30/11/2016 Using CRISPR-Cas technology to generate inducible KO mouse ES cell lines for Ago1 and Ago3 Master in Biomedical Engineering, Instituto Superior Técnico da Universidade de Lisboa Evguenia Bekman.

Duarte Pólvora Brandão 13/10/2016 Generation and characterization of Angelman Syndrome iPSCs for disease modelling and drug screening Master in Molecular and Cellular Biology, Faculty of Sciences of University of Porto Simão Rocha.

João Von Gilsa Lopes 30/11/2016 Comprehensive study of the stability of genomic imprinting during iPSC reprogramming Master in Biomedical Engineering, Instituto Superior Técnico, University of Lisbon Simão Rocha.

Castanho, Miguel

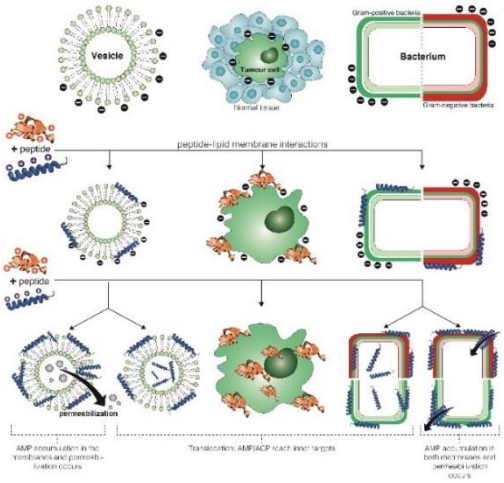
Major Interests / Objectives

There are many biological processes that depend on the interaction between peptides/proteins and membrane lipids, such as viral fusion, translocation across epithelia or innate immune defence. Some of these may be inspiring to develop innovative therapeutical tools. The goal of the MCastanho Lab is to unravel the physical principles that govern lipid-peptide interactions, with implications in viral fusion (HIV and Dengue virus are of particular interest), analgesia and translocation of the blood-brain barrier, and development of antimicrobial and anticancer drugs. We are interested not only in drug targets and drug discovery itself, but also in the molecular-level mechanism of action of efficient and safe drugs.

Head of Laboratory

Miguel A. R. B. Castanho, PhD, Full Professor

Graphical Abstract



Research Team

Ana Filipa Daniel da Cruz	Graduate	MSc Student (Started September)
Ana Salomé Rocha do Nascimento Veiga	PhD	Investigator
Carla Iris Cadima Couto	PhD	Post-Doctoral Investigator
Diana Maria Diez Gaspar	PhD	Post-Doctoral Investigator
Diogo Alexandre de Mendonça	Graduate	MSc Student (Started September)
Filipa Dias de Oliveira	Graduate	MSc Student
Inês Filipa de Oliveira Almeida	Graduate	MSc Student
Inês Rego de Figueiredo	Master	Trainee (Started March)
João Miguel Calado da Silva Freire	Master	PhD Student (Left February)

Julia Michalina Skalska	Master	PhD Student (Started March)
Juliana Rodrigues Perazzo	Master	PhD Student, NA
Marco Andre Manso Domingues	PhD	Post-Doctoral Investigator (Started February - Left October)
Nuno Rebello de Andrade Bustorff Silva	Graduate	MSc Student
Pietro Mazzuca	Master	PhD Student (Started March – Left July)
Rute Português Eleutério	Graduate	MSc Student (Left November)
Sara Raquel Neves Coelho	Graduate	MSc Student
Susana Filipa Almeida Dias	Master	PhD Student
Tânia Raquel Martins dos Santos	Master	PhD Student
Tânia Sofia Ferreira Morais	PhD	Post-Doctoral Investigator
Tiago Nascimento Figueira	Master	PhD Student
Vera Luisa Santos Neves	PhD	Post-Doctoral Investigator

Laboratory Keywords / Research Areas

Drug discovery, Peptide, Antimicrobials/anticancer drugs, HIV, Dengue, Blood-brain barrier.

Major Scientific Achievements

The main achievements in 2016 were:

- Discovery of cell penetrating peptides that were able to deliver therapeutic siRNA to BV173 chronic myeloid leukemia cells and act synergistically.
- Demonstration that selected Kyotorphin derivatives impact on glucocorticoid synthesis, which explains multifunctional neuroprotective, anti-inflammatory and analgesic actions.
- Development of Surface Plasmon Resonance methodologies to quantitatively study the partition of solutes between a liquid phase and lipid bilayers.

Selected Publications

J Perazzo, M Lopes-Ferreira, S Santos, I Serrano, A Pinto, C Lima, E Bardaji, I Tavares, M Heras, K Conceição, MARB Castanho (2016) Endothelium-Mediated Action of Analogues of the Endogenous Neuropeptide Kyotorphin (Tyrosil-Arginine): Mechanistic Insights from Permeation and Effects on Microcirculation. ACS chemical neuroscience 7, 1130-1140. (Journal IF: 4.348, Citations: --).

D Gaspar, JM Freire, TR Pacheco, JT Barata, MARB Castanho (2015) Apoptotic human neutrophil peptide-1 anti-tumor activity revealed by cellular biomechanics. Biochim Biophys Acta – Mol Cell Res doi: 10.1016/j.bbamcr.2014.11.006, 1853, 308-316.

http://www.sciencedirect.com/science/article/pii/S0167488914003954 (Journal IF: 5.019, Citations: 7).

JM Freire, D Gaspar, BG de la Torre, AS Veiga, D Andreu, MARB Castanho (2015) Monitoring antibacterial permeabilization in real time using time-resolved flow cytometry. Biochimica et Biophysica Acta (BBA) - Biomembranes 1848, 554-560 (Journal IF: 3.687, Citations: 10).

Freire JM, Veiga AS, Rego de Figueiredo I, de la Torre BG, Santos NC, Andreu D, Da Poian AT, Castanho MA. (2014) Nucleic acid delivery by cell penetrating peptides derived from dengue virus capsid protein: design and mechanism of action. FEBS J. DOI: 10.1111/febs.12587, 281, 191-215. http://onlinelibrary.wiley.com/doi/10.1111/febs.12587/abstract (Journal IF: 4.001, Citations: 14).

Veiga AS, Sinthuvanich C, Gaspar D, Franquelim HG, Castanho MA, Schneider JPB (2012) Arginine-rich self-assembling peptides as potent antibacterial gels. Biomaterials doi: 10.1016/j.biomaterials.2012.08.046, 33, 8907–8916. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3466390/pdf/nihms-404514.pdf (Journal IF: 8.557, Citations: 74).

Ongoing Research Projects

2014/2016: Neuropore Therapies. Coordinator: Miguel Castanho. Agency: Neuropore Therapies, Inc. Reference: Neuropore Therapies. Amount: 20000.00. Amount (total): 20000.00.

2014/2016: Multi-target HIV entry inhibitors delivery by cationic liposomes. Coordinator: Ana Salomé Rocha do Nascimento Veiga. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: VIH/SAU/0047/2011. Amount: 129209.00. Amount (total): 129209.00.

2014/2016: Uma estratégia inovadora para distribuição e entrega de inibidores de entrada do HIV muilti-alvo usando lipossomas catiónicos. Coordinator: Miguel Castanho. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: HIVERA/0002/2013. Amount: 99000.01. Amount (total): 99000.00.

2015/2016: Engeneering protease-resistant alpha-beta for broad-spectrum antivirals. Coordinator: Nuno Fernando Duarte Cordeiro Correia dos Santos. Agency: Joan Sanford I. Weill Medical College of. Reference: Engineering protease-resistant - NIH. Amount: 300000.00. Amount (total): 300000.00.

2015/2019: Innovative peptides against cancer and pathogenic bacteria, with advances in science, biopharmaceutical drug. Coordinator: Miguel Castanho. Agency: Comissão Europeia. Reference: INPACT. Amount: 463500.00. Amount (total): 1390500.00.

2016/2019: Overcoming the Brain Drug Delivery Bottleneck: Development of single domain antibodies for brain targeting and drug delivery across the Blood-Brain Barrier. Coordinator: Miguel A. R. B. Castanho. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/BBB-BIO/0508/2014. Amount: 19800.00. Amount (total): 192320.00.

2016/2019: Alzheimer3D: Trifunctional Conjugates for the Selective Drug Delivery in Alzheimer's Disease. Coordinator: Miguel A. R. B. Castanho. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/QEQ-MED/5512/2014. Amount: 12000.00. Amount (total): 198364.00.

2016/2019: Cell-cell communication in metastatic breast cancer: a control point that can lead to breast cancer treatment. Coordinator: Diana Maria Diez Gaspar. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/BBB-BQB/1693/2014. Amount: 187151.00. Amount (total): 187151.00.

2016/2019: Towards the development of innovative highly effective dual action anti-HIV peptides. Coordinator: Ana Salomé Rocha do Nascimento Veiga. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/QEQ-MED/4412/2014. Amount: 143133.00. Amount (total): 193133.00.

2016/2019: Peptides for blood-brain barrier transmigration and drug delivery - novel therapies for the central nervous system. Coordinator: Vera Luisa Santos Neves. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/BBB-NAN/1578/2014. Amount: 140090.00. Amount (total): 190090.00.

Publications in Peer Review Journals

Cunha-Santos C, Figueira TN, Borrego P, Oliveira SS, Rocha C, Couto A, Cantante C, Santos-Costa Q, Azevedo-Pereira JM, Fontes CMGA, Taveira N, Aires-Da-Silva F, Castanho MARB, Ana Veiga AS, Goncalves J (2016) Development of synthetic light-chain antibodies as novel and potent HIV fusion inhibitors. AIDS 30(11), 268-277 (Journal IF: 4.407, Citations: 0).

Lousa D, Pinto AR, Victor BL, Laio A, Veiga AS, Castanho MA, Soares CM (2016) Fusing simulation and experiment: The effect of mutations on the structure and activity of the influenza fusion peptide. Sci Rep 6, 28099 (Impact Factor: 5.228; Times cited: 0).

Silva ON, Alves ES, de la Fuente-Núñez C, Ribeiro SM, Mandal SM, Gaspar D, Veiga AS, Castanho MA, Andrade CA, Nascimento JM, Fensterseifer IC, Porto WF, Correa JR, Hancock RE, Korpole S, Oliveira AL, Liao LM, Franco OL (2016) Structural Studies of a Lipid-Binding Peptide from Tunicate Hemocytes with Anti-Biofilm Activity. Sci Rep 6, 27128 (Impact Factor: 5.228; Times cited: 1).

Carvalho S, Freire J, Moleirinho M, Monteiro F, Gaspar D, Castanho M, Carrondo M, Alves P, Gonçalo B and Peixoto C (2016) Bioorthogonal processing of specific-site-functionalized enveloped Influenza-virus-like particles. Bioconjug. Chem. 27, 2386-2399 (Journal IF: 4.500, Citations: 0).

Neves, V., Aires da Silva, F., Corte-Real, S., Castanho, M. A. R. B. (2016) Antibody approaches to treat brain illnesses. Trends in biotechnology, 34 (1), 36-48 (Journal IF 11.96, citations: 1) DOI: 10.1016/j.tibtech.2015.10.005.

Perazzo J, Lopes-Ferreira M, Santos S, Serrano I, Pinto A, Lima C, Bardaji E, Tavares I, Heras M, Conceição K, Castanho MARB (2016) Endothelium-Mediated Action of Analogues of the Endogenous Neuropeptide Kyotorphin (Tyrosil-Arginine): Mechanistic Insights from Permeation and Effects on Microcirculation. ACS chemical neuroscience, 7, 1130-1140 (Journal IF: 4.348, Citations: 0).

J Perazzo, S Sá Santos, M Castanho (2016) Pharmacological potential of the endogenous dipeptide Kyotorphin and selected derivatives, Frontiers in Pharmacology 7, 530 (Journal impact factor: 4.418; citations: 0).

SS Santos, SM Santos, ART Pinto, VG Ramu, M Heras, E Bardaji, I. Tavares, MARB Castanho (2016) Amidated and Ibuprofen-Conjugated Kyotorphins Promote Neuronal Rescue and Memory Recovery in Cerebral Hypoperfusion Dementia Model, Frontiers in aging neuroscience 8 (Journal impact factor: 4.348; citations: 2).

MC Oliveira, L Gano, I Santos, JDG Correia, ID Serrano, SS Santos, M Ribeiro, J Perazzo, I Tavares, MHeras, E Bardaji, MA Castanho (2016) Improvement of the pharmacological properties of amidated kyotorphin by means of iodination, MedChemComm 7 (5), 906-913 (Journal impact factor: 2.319; citations: 0).

K Conceição, PR Magalhães, SRR Campos, MM Domingues, VG Ramu, M Michalek, P Bertani, AM Baptista, M Heras, ER Bardaji, B Bechinger, ML Ferreira, MARB Castanho (2016) The anti-inflammatory action of the analgesic kyotorphin neuropeptide derivatives: insights of a lipid-mediated mechanism. Amino acids 48 (1), 307-318 (Journal impact factor: 3.196; citations: 1).

Other Publications International

Gaspar D, Castanho MARB (2016) Anticancer peptides: innovation in cancer therapy (in Host Defense Peptides and Their Potential as Therapeutic Agents), pages 95-109. Editor: Richard M. Epand, Springer.

Invited Lectures and Seminars

Co-chair of the synposium "Personalized Medicine and integrated Research Platforms" 2nd anual conference "Innovation in Health"
University of Lisbon, Portugal, June 16th, 2016

Chair of the symposium "Imagiology and telemedicine: technologies for the benefit research and health care"
Cycle of Conferences Agora, Science and Society
Lisbon, Portugal, January 15th, 2016

Communications in International Conferences

Figueira, T.N., Freire, J.M., Veiga, A.S., Castanho, M.A.R.B. Quantitative characterization of peptide-lipid partition using surface plasmon resonance, 15th Iberian Peptide Meeting, Porto, Portugal. February 2016. (Oral Presentation)

Figueira, T.N., Palermo, L.M., Huey, D., Alabi, C.A., Santos, N.C., Mathieu, C., Horvat, B., Niewiesk, S., Moscona, A., Porotto, M., Veiga, A.S., Castanho, M.A.R.B. Correlating self-assembling and lipid membrane interactions of cholesterol-conjugated Measles Virus entry inhibitors with in vivo efficacy, 3rd Innovative Approaches for Identification of Antiviral Agents Summer School, Santa Margherita di Pula, Italy. September-October 2016. (Oral Presentation)

Gaspar, D. Anticancer vs. Antimicrobial peptides: same drugs, same target, same mechanism? 15th Naples Workshop on Bioactive Peptides, Naples, Italy. June 2016. (Oral Presentation)

Gaspar, D. Improving Cancer Therapy with Anticancer peptides, XV EPI: 15th Iberian Peptide Meeting, Porto, Portugal. February 2016. (Oral Presentation)

Neves, V. "A novel peptide platform derived from Dengue virus for drug delivery into the brain". EPI XV – Iberian peptide meeting, Porto, Portugal. February 2016 (Oral Presentation).

Figueira, T.N., Freire, J.M., Cunha-Santos, C., Heras, M., Gonçalves, J., Moscona, A., Porotto, M., Veiga, A.S., Castanho, M.A.R.B. Quantifying biomolecular-lipid membrane interactions using surface plasmon resonance equilibrium and kinetic data, 5th Iberian Biophysics Congress, Porto, Portugal. June 2016. (Poster Presentation)

Carvalho, S., Freire, J., Moleirinho, M., Monteiro, F., Gaspar, D., Castanho, M., Carrondo M., Alves, P., Bernardes, G. and Peixoto, C. A click chemistry strategy to specifically monitor and improve purification of Influenza virus-like particles, Vaccine Technology VI, Grande Real Santa Eulália Hotel, Albufeira, Portugal. June 2016. (Poster Presentation)

Gaspar, D., Almeida, I., Mello, E., Gomes, V. and Castanho, M. Bioactive peptides as chemotherapeutic agents on metastatic breast cancer, 2nd ASPIC International Congress, Instituto Portugês de Oncologia, Porto, Portugal. April 2016. (Poster Presentation)

Figueira, T.N., Palermo, L.M., Huey, D., Alabi, C.A., Santos, N.C., Mathieu, C., Horvat, B., Niewiesk, S., Moscona, A., Porotto, M., Veiga, A.S., Castanho, M.A.R.B. Cholesterol conjugated Measles Virus entry inhibitors display self-assembling and lipid membrane interaction properties: correlating biophysical studies with in vivo data, EMBO Young Scientists' Forum 2016, Lisbon, Portugal. September 2016. (Poster Presentation)

Pinto S.N., Mil-Homens D., Castanho M.A.R.B, Prieto M., Coutinho A., Veiga A.S. Investigating the relationship between antimicrobial agents mechanisms of action and anti-biofilm activity using confocal microscopy techniques, Biofilms7 Meeting, Porto, Portugal. June 2016. (Poster Presentation)

Communications in National Conferences

Figueira, T.N., Freire, J.M., Veiga, A.S., Castanho, M.A.R.B. Using surface plasmon resonance to quantify molecular partition towards lipid membranes: equilibrium and kinetic data revisited, Poster presentation at the X iMM/CAML PhD Students' Meeting, Lisbon, March 30-April 1, 2016.

Dias S.A., Castanho M.A.R.B., Veiga A.S. Towards the development of antimicrobial peptides active against bacterial biofilms. Presentation at the X iMM/CAML PhD Students' Meeting, Lisboa, Portugal, March 30 – April 1, 2016.

Internationalisation

Project INPACT - Innovative peptides against cancer and pathogenic bacteria, with advances in science, biopharmaceutical drug. (H2020; RISE Program) is coordinated by MCastanho lab and involves 10 groups from 5 countries in 4 continents: Australia (USQ, Brisbane), Brazil (UFRJ and Instituto Ciência Hoje, Rio de Janeiro), Portugal (UL and Technophage, Lisbon), Spain (CEAMED, Tenerife; UPF and IESE, Barcelona), United States (Stanford University, Stanford).

Project HIVERA is also coordinated by MCastanho Lab and consists of an international consortium with partners from France (UPMC, Paris) and Romania (UB, Bucharest).

MCastanho lab partners with Neuropore Therapies (USA) in in vitro toxicology tests for drug development, and collaborates in an NIH-funded project (USA) coordinated by NSantos lab.

Patents / Prototypes

Côrte-Real, S., Neves, V., Oliveira, S., Canhão, P., Outeiro, T., Castanho, M., Aires da Silva, F. Antibody Molecules and Peptide Delivery Systems for Use in Alzheimer's Disease and Related Disorders. Application No. PCT/IB2016/050467, PCT was filed on January 29, 2016 in WIPO.

Advanced Teaching

Figueira T.N. (with iMM/CAML PhD Students' Committee) organized the workshop "Communication: How to present in a scientific congress", iMM-FMUL, Lisbon. October 12, 2016 (Speaker: Malcolm Love).

Figueira T.N. (with iMM/CAML PhD Students' Committee) organized the workshop "Graphic Design in Science", iMM-FMUL, Lisbon. November 9, 2016 (Speaker: Gil Costa).

Figueira T.N. (with iMM/CAML PhD Students' Committee) organized the workshop "Exploring Different Career Paths", iMM-FMUL, Lisbon. December 5, 2016 (Speakers: David Marçal, Helena Vieira, Vanessa Morais and Hugo Ferreira).

Figueira T.N. attended the “Workshop Soft Skills” organized by the M2B – Medical Biochemistry & Biophysics Doctoral Programme, iMM-FMUL, Lisbon. May 2 and 3, 2016.

Dias S.A. attended the “Workshop Soft Skills” organized by the M2B – Medical Biochemistry & Biophysics Doctoral Programme, iMM-FMUL, Lisbon. May 2 and 3, 2016.

Dias S.A. attended the Workshop “Graphic Design in Science” organized by the iMM/CAML PhD Students’ Committee, iMM-FMUL, Lisbon. November 9, 2016.

Veiga A.S. participated as lecturer in the course “Nanomedicine and Biochemistry”, LisbonBioMed PhD Programme, IMM, Lisbon. January 25-26, 2016.

Oliveira, F.D. participated in the Workshop "Exploring Different Career Paths", CAML Advanced Course, iMM, Lisbon. December 5, 2016.

Gaspar, D. participated as Chair at the X PhD iMM/CAML meeting, iMM, Lisbon. March 31, 2016.

Skalska, J., Gaspar D. and Castanho M. “Biophysical studies to unravel the mechanism of action of antimicrobial peptides”. X PhD iMM/CAML meeting, IMM, Lisbon. April 1, 2016 (Oral presentation).

Gaspar, D. “Biophysics and Cancer”, lecturer at the Doctoral Course on Advanced Drug Delivery (FCT PhD Program in Medicines and Pharmaceutical Innovation, i3DU), Faculdade de Farmácia da Universidade de Lisboa, Portugal. March 16, 2016.

Skalska, J. participated in the “Towards a Creative and Critical Mind” course (Organizer: Domingos Henrique), iMM, Lisbon. January 4 – February 26, 2016.

Skalska, J. participated in the “Statistics for Beginners” course (Organizer: Isabel Flores), iMM, Lisbon. January 7– February 25, 2016.

Gaspar, D. “From Antimicrobial to Anticancer Peptides”. Lecturer at “Towards a Creative and Critical Mind” course, iMM Lisboa, Portugal. January 25, 2016.

Science and Society

Cruz A., Oliveira F.D., Dias S.A., Figueira T.N, Gaspar, D. (2016) "Dia Nacional da Cultura Científica", lectures and activities with students at the ISCE – Instituto Superior de Ciências Educativas school, Odivelas, PortugalCruz A., Oliveira F.D., Dias S.A., Figueira T.N, Gaspar, D. (2016) "Dia Nacional da Cultura Científica", lectures and activities with students at the ISCE – Instituto Superior de Ciências Educativas school, Odivelas, Portugal.

Couto, C and Gaspar, D (2016) "Cientista Por Uma Noite", scientific activities at the European Researchers Night, MUHNAC, Lisboa, Portugal.

Gaspar, D (2016) "World Cancer Day", organizer and lecturer at the Cancer Research Open Day, iMM Lisboa, Portugal.

Gaspar, D (2016) Scientific activities with pre-graduate students from Escola Secundária D. Sancho II, iMM Lisboa, Portugal.

PhD Thesis Completed

João M. freire 01/01/2016 Structural proteins of enveloped virus: from biochemistry to molecular medicine. A focus on Dengue virus. University of Lisbon Miguel Castanho.

MSc Thesis Completed

Nuno Busttorf 01/01/2016 Viruses as a source of antiviral peptide-based drugs University of Lisbon Ana Salomé Veiga Miguel Castanho.

Filipa Oliveira 01/01/2016 Study of cell penetrating peptides as drug delivery systems for chemotherapeutic drugs and their anticancer properties. University of Lisbon Diana Gaspar Miguel Castanho.

Rute Português Eleutério 01/01/2016 Translocation Mechanism of Blood-Brain Barrier by peptides derived from Dengue virus – New Drug Delivery Systems. Universidade Nova de Lisboa Vera Neves Miguel Castanho.

Mariana Amaro 01/01/2016 Development of a theranostic system for central nervous system based on superparamagnetic nanoparticles Universidade Nova de Lisboa, Vera Neves.

Costa, Luís

Major Interests / Objectives

In cancer, metastases are the hallmark of lethality. This unique and complex phenomenon is related not only to the genomic alterations in the cancer cell but also to the heterotypic signaling between cancer cells and host tissues, which could explain metastatic organotropism and how tumours reinvent themselves as new tissues in the target organ. We aim to contribute to the understanding of molecular mechanisms involved in tumour progression at the metastatic site (using bone metastases as paradigm) and to unravel molecular signatures of organotropism by identifying "leader genes signatures" common to primary tumour and the corresponding site of metastases (using colorectal cancer (CRC) as model) and, also, to study the relevance of Phospholipase C family of enzymes in CRC progression and treatment resistance.

Head of Laboratory

Luís António Marques da Costa, MD/PhD

Research Team

Afonso Camilo Rodrigues Fernandes	PhD	Consultant (Left April)
Arlindo Júlio Rebelo da Silva Ferreira	Master	Investigator, MD
Diana Domingos de Matos	Graduate	MSc Student
Inês André Correia	Graduate	MSc Student
Irina Margarida Pereira Machado Alho Duarte	PhD	Investigator
Isabel Cristina Ferreira Fernandes Borges da Costa	Master	Investigator, CHLN, Clinical Specialist, Assistant Professor
Maria José Palma Bettencourt	Graduate	MSc Student (Left April)
Mário Alberto Ferreira Maia Matos	Graduate	MSc Student
Marta Sofia Alves Martins	PhD	Investigator
Raquel Sofia Cruz Duarte	Graduate	MSc Student
Rudolfo Pais Mendes Ferreira Francisco	Graduate	Consultant
Sandra Cristina Cara de Anjo Casimiro	PhD	Post-Doctoral Investigator, Faculdade Medicina da Universidade de Lisboa, Assistant Professor
Sandra Sofia Chorão Lavajo Lucas	Graduate	Administrative
Sara Santos Henriques	Graduate	Investigator (Left February)
Teresa Raquel Duarte Pacheco	PhD	Post-Doctoral Investigator

Laboratory Keywords / Research Areas

Metastasis, metastatic organotropism, tumor microenvironment, leader genes signatures, tumor heterogeneity, oncodynamics.

Major Scientific Achievements

In the bone metastases (BM) field we pursued the path of understanding the role of RANK-RANKL axis in cancer cell behavior. We have found that luminal breast cancer (BC) cells overexpressing RANK are more aggressive and present an adaptive advantage over cells with low RANK. These findings can have high relevance since RANK pathway is emerging as a major target in BC treatment. We have identified a RANK SNP (rs34945627) associated with poor prognosis of BC patients, and established an international collaboration to validate our findings in a large cohort of BC patients. Additionally, in BM, our clinical data confirms that collagen type I fragments such as NTX are the most potent biomarker to predict survival in patients with breast cancer and bone metastases. Moreover, since 2007 we generated a biobank of more than 700 CRC samples including a sub-cohort of match-paired of normal, primary, metastasis and blood samples. Making use of this biobank, we have identified two families of Phospholipase C: PLCe and PLCg being deregulated at early stages of tumor development and involved in therapy resistance in metastatic colorectal cancer, respectively.

Selected Publications

Ferreira A, Alho I, Vendrell I, Melo M, Brás R, Costa AL, Sousa AR, Mansinho A, Abreu C, Pulido C, Macedo D, Pacheco T, Correia L, Costa L, Casimiro S. (2016) The prognostic role of RANK SNP rs34945627 in breast cancer patients with bone metastases. Oncotarget 7(27), 41380-9 (Journal IF: 5.008, Citations: 0).

Costa L (2014) Which bisphosphonate to treat bone metastases? Lancet Oncology 15(1), 15-16 (Journal IF: 26.509, Citations: 2).

Pakala SB, Rayala SK, Wang RA, Ohshiro K, Mudvari P, Reddy SD, Zheng Y, Pires R, Casimiro S, Pillai MR, Costa L, Kumar R. (2013) MTA1 promotes STAT3 transcription and pulmonary metastasis in breast cancer. Cancer Res 73, 3761 (Journal IF: 9.329, Citations: 14).

David Henry, Luis Costa, Francois Goldwasser, Vera Hirsh, Vania Hungria, Jana Prausova, Giorgio Vittorio Scagliotti, Harm Sleeboom, Andrew Spencer, Saroj Vadhan-Raj, Roger von Moos, Wolfgang Willenbacher, Penella J Woll, Jianming Wang, Qi Jiang, Susie Jun, Roger Dansey, Howard Yeh (2011) A Randomized, Double-blind Study of Denosumab Versus Zoledronic Acid in the Treatment of Bone Metastases in Patients with Advanced Cancer (Excluding Breast and Prostate Cancer) or Multiple Myeloma. Journal of Clinical Oncology 9(9), 1125-1132 (Journal IF: 20.982, Citations: 382).

Luis Costa and Pierre P Major (2009) Effect of Bisphosphonates on Pain and Quality of Life in Patients with Bone Metastases. Nature Clinical Practice Oncology 6(3), 163-174 (Journal IF: 8.0, Citations: 85).

Ongoing Research Projects

2013/2016: Coordinator: Luis António Marques da Costa. Agency: Celgene Sociedade Unip., Lda. Reference: Colagenio do Cancro da Mama. Amount: 4000.00. Amount (total): 4000.00.

2013/2016: Coordinator: Luis António Marques da Costa. Agency: Fundação Ciência e Tecnologia. Reference: EXCL/QEQ-MED/0233/2012. Amount: 33000.00. Amount (total): 496065.00.

2014/2016: Mechanisms of invasion and progression of cancer in bone: Molecular profiling of matrix and adhesion-related molecules in metastatic disease. Coordinator: Sandra Cristina Cara de Anjo Casimiro. Agency: Liga Portuguesa Contra o Cancro. Reference: Liga Portuguesa contra o cancro /Terry Fox. Amount: 15000.00. Amount (total): 10000.00.

2015/2018: Analysis of RANK protein expression in Cohort 2 using immunohistochemistry (IHC) in 70 matched primary breast cancer tumors and distant metastasis. Coordinator: Luis António Marques da Costa. Agency: Amgen Inc. Reference: Preclinical Research Program. Amount: 29105.60. Amount (total): 0.00.

2014/2016: Relative effectivity of aromatase inhibitors versus tamoxifen in patients with early breast cancer. Coordinator: Arlindo Júlio Rebelo da Silva Ferreira. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: HMSP-ICJ/0007/2013. Amount: 99999.99. Amount (total): 100000.00.

2013/2016: Caracterização Molecular de Carcinomas da Mama. Coordinator: Sandra Cristina Cara de Anjo Casimiro. Agency: Novartis Farma, S.A. Reference: Caracterização Molecular de Carcinomas da Mama. Amount: 10000.00. Amount (total): 10000.00.

2016/2016: CORBIE - Characterizing the biological role of clinically relevant collagen type I fragments in metastatic breast cancer. Coordinator: Luis António Marques da Costa. Agency: Celgene Sociedade Unip., Lda. Reference: CORBIE. Amount: 6700.00. Amount (total): 0.00.

2016/2017: Marcadores Moleculares de Metastização Óssea. Coordinator: Luis António Marques da Costa. Reference: Marcadores Moleculares de Metastização Óssea - 2. Amount: 10000.00. Amount (total): 10000.00.

2016/2018: Involvement of PLCY1 in the resistance Mechanism to Anti-EGFR Therapy in Metastic Colorectal Cancer. Coordinator: Luis António Marques da Costa. Agency: Liga Portuguesa Contra o Cancro. Reference: Terry Fox - Marta Martins. Amount: 10000.00. Amount (total): 15000.00.

Other Projects

2013/2017: Advanced breast cancer: prognosis and therapeutics. Coordinator: Sandra Casimiro.

2016/2017: Involvement of PLCg1 in resistance to anti EGFR therapy in colorectal cancer. Coordinator: Marta Martins.

2016/2018: Participation in the project “Towards outstanding research and training in tumour”. Coordinator: Edgar Rodrigues Almeida Gomes. Agency: Comissão Europeia. Reference: Twinning - ReTuBi.

2016/2019: Participation in PRECISE Project – Programa de Atividades Conjuntas – Project number 016394 Precise (Promoção do avanço significativo do conhecimento na área de medicina de precisão e sua translação para benefício da sociedade), financed by the Comissão Diretiva do Programa Operacional Regional de Lisboa and by Fundação para a Ciência e a Tecnologia, I.P. Coordinator: Maria Carmo-Fonseca.

Publications in Peer Review Journals

Ribeiro E, Alho I, Marques F, Gano L, Correia I, Correia JDG, Casimiro S, Costa L, Santos I and Fernandes C (2016) Radiolabeled block copolymer micelles for image-guided drug delivery. Int J Pharmaceutics 515, 692–701 (Journal IF: 3.994, Citations: 0).

Casimiro S, Ferreira AR, Mansinho A, Alho I and Costa L (2016) Molecular Mechanisms of Bone Metastasis: Which Targets Came from the Bench to the Bedside? Int. J. Mol. Sci. 17(9), 1415 (Journal IF: 3.257, Citations: 0).

Ferreira A, Alho I, Vendrell I, Melo M, Brás R, Costa AL, Sousa AR, Mansinho A, Abreu C, Pulido C, Macedo D, Pacheco T, Correia L, Costa L and Casimiro S (2016) The prognostic role of RANK SNP rs34945627 in breast cancer patients with bone metastases. Oncotarget 7(27), 41380–41389 (Journal IF: 5.008, Citations: 0).

Ferreira AR, Alho I, Shan N, Matias M, Faria M, Casimiro S, Leitzel K, Ali S, Lipton A and Luís Costa (2016) N-telopeptide of Type I Collagen (Ntx) long-term Dynamics in Breast Cancer Patients with Bone Metastases: Clinical Outcomes and Influence of Extraskeletal Metastases. The Oncologist. Published online August 17, 2016. doi: 10.1634/theoncologist.2015-0527 (Journal IF: 4.789, Citations: 0).

Chow LWC, Costa L, The B, Li D, Feng G, Guan X, Nair A, Zhu L, Sugimoto M, Dutt A, Toi M, Gupta S, Badwe R, Knapp S, Pillai MR and Kumar R (2016) Cancer Genomics and Biology 2015 – Meeting Report. Genes & Cancer 7(1-2), 1–6 (Journal IF: NA, Citations: NA).

Hadji P, Coleman RE, Wilson C, Powles TJ, Clézardin P, Aapro M, Costa L, Body J-J, Markopoulos C, Santini D, Diel I, Di Leo A, Cameron D, Dodwell D, Smith I, Gnant M, Gray R, Harbeck N, Thurlimann B, Untch M, Cortes J, Martin M, Albert U-S, Conte P-F, Ejlertsen B, Bergh J, Kaufmann M and Holen I (2016) Adjuvant bisphosphonates in early breast cancer: consensus guidance for clinical practice from a European Panel. Annals of Oncology 27(3):379-90. (Journal IF: 9.269, Citations: 7).

Alho I, Costa L, Bicho M and Coelho C (2016) Low Molecular Weight Protein Tyrosine Phosphatase Slow Isoform Knockdown in MDA-MB-435 Cells Decreases RAW 264.7 Osteoclastic Differentiation. Anticancer Res. 36(5), 2227-32 (Journal IF: 1.895, Citations: 0).

Ferreira A, Palha A, Correia L, Filipe P, Rodrigues V, Costa L, Miranda A, André R, Fernandes J, Gouveia J, Passos-Coelho JL, Moreira A, Brito M, Ribeiro J, Metzger-Filho O, U Lin N and Vaz-Luís I. (2016) Variation in type of adjuvant chemotherapy received among patients with stage I breast cancer: A multi-institutional Portuguese cohort study Breast. 29, 68-73 (Journal IF: 2.74, Citations: 0).

Fiuza M, Ribeiro L, Magalhães A, Sousa AR, Nobre Menezes M, Jorge M, Costa L and Pinto FJ (2016) Organization and implementation of a cardio-oncology program. Rev Port Cardiol. 35(9), 485-94 (Journal IF: 0.873, Citations: 0).

Coelho RM, Lemos JM, Alho I, et al. (2016) Dynamic modeling of bone metastasis, microenvironment and therapy. Integrating parathyroid hormone (PTH) effect, anti-resorptive and anti-cancer therapy. J Theor Biol 391, 1–12 (Journal IF: 2.116, Citations: 1).

Invited Lectures and Seminars

Costa L. Nanomedicine in Cancer: what we can offer so far. NWCD16, INL - International Iberian Nanotechnology Laboratory, Braga, Portugal, February 2, 2016.

Costa L. Cancer and metastases: is bone a useful paradigm? INSERM UMR 1033, Lyon, France, April 8, 2016.

Casimiro, S. Preventing bone metastases in ER-positive breast cancer: Identification and clinical validation of putative prognostic biomarkers and therapeutic targets. Jornadas de Investigação em Oncologia, IPOLFG, Lisbon, Portugal, April 8, 2016.

Costa L. A transversal approach to other solid tumors. Perceptorship in Immunology, Lisbon, Portugal, May 5, 2016.

Costa L. Breast Cancer and Bone Metastasis – Do We Still Have a Problem? CABS-ECTS, Rome, Italy, May 15, 2016.

Casimiro, S. Pathophysiology of bone metastases. Understanding the main methods for target identification in preclinical studies. Perceptorship in Bone Metastases, Lisboa, Portugal, May 18, 2016.

Costa, L. State of the Art in the Treatment of Bone Metastases. Perceptorship in Bone Metastases, Lisboa, Portugal, May 18, 2016.

Costa L. Blood markers as endpoints. Inclusion of Breast Cancer Patients with Bone-only Metastasis in Clinical Trials.

Consensus Development Meeting. ASCO-FDA Meeting, Chicago, Illinois, USA, June 2, 2016.

Fernandes I. Carcinoma neuroendócrino da próstata – implicações clínicas. REACT 2016, Coimbra, Portugal, 2016.

Fernandes I. Metastização óssea no carcinoma da próstata. Reunião do Grupo Português de Urologia, Algarve, Portugal, April 8-9, 2016.

Fernandes I. The impact of ageing in oncology. 3rd Annual Conference – Rede Saúde – Universidade de Lisboa, Lisbon, Portugal, May 3, 2016.

Marques da Costa P, Tortosa F, Fernandes I, Velosa J. Hipoglicémia paraneoplásica em tumor neuroendócrino – para lá do insulinoma. Semana do Digestivo, Algarve, Portugal, June 1-4, 2016.

Communications in International Conferences

M. Bettencourt, A.R. Ferreira, I. Alho, A.L. Costa, A.R. Sousa, A. Mansinho, C. Abreu, C. Pulido, D. Macedo, I. Vendrell, T.R. Pacheco, L. Costa, S. Casimiro. Secreted YB-1 (Y-box binding protein 1) as a biomarker of bone disease progression in patients with breast cancer and bone metastases. 43rd Annual European Calcified Tissue Society Congress, Rome, Italy. May 14-17 2016. (Oral Presentation)

Bettencourt, M., Fernandes, A., Pacheco, T.R., Maia-Matos, M., Costa, A.L., Abreu, C., Alves, A., Correia. L., Costa, L., Casimiro, S. Phosphorylated YB-1 (Y-box binding protein 1) as a biomarker of poor prognosis in patients with breast cancer. 24th Biennial Congress of the European Association for Cancer Research, Manchester, UK. July 9-12 2016. (Poster Presentation)

Bettencourt, M., Fernandes, A., Pacheco, T.R., Maia-Matos, M., Costa, A.L., Abreu, C., Alves, A., Correia. L., Costa, L., Casimiro, S. Phosphorylated YB-1 (Y-box binding protein 1) as a biomarker of poor prognosis in patients with breast cancer. 2nd ASPIC International Congress, Porto, Portugal. April 28-29 2016. (Poster Presentation)

Mansinho A, Macedo D, Fernandes I, Quintela A, Costa L. Neutrophil to lymphocyte ratio (NLR) impact on the survival and response duration of patients with metastatic castration resistant prostate cancer (mCRPC) treated with abiraterone acetate (AA). ESMO 2016, Copenhagen, Denmark, October 7-11 2016. (Poster Presentation)

Macedo D, Mansinho A, Fernandes I, Costa L. Myoepithelial carcinoma of soft tissue. 29th Annual Meeting of the European Musculo-skeletal Oncology Society, La Baule, France, May 25-27 2016. (Poster Presentation)

Macedo D, Mansinho A, Fernandes I, Costa L. Thyroid metastization of sarcomas – a rare entity. 29th Annual Meeting of the European Musculo-skeletal Oncology Society, La Baule, France, May 25-27 2016. (Poster Presentation)

Communications in National Conferences

Mansinho A, Macedo D, Paiva R, Fernandes I, Costa L. Relação entre o rácio neutrófilos-linfócitos e sobrevivência em doentes com carcinoma da próstata metastático resistente à castração sob acetato de abiraterona. Prossyga, Lisbon, Portugal, May 20-21 2016. (Oral Presentation)

Organisation of Conferences

Costa L. Organizer of Oncology Series, Lisbon, Portugal, April & August 2016.

Costa L. Organizer of Bone Metastases Preceptorship, Lisbon, Portugal, May 2016.

Costa L. Organizer of Immunology Preceptorship, Lisbon, Portugal, May 2016.

Internationalisation

Research Collaboration Agreement with Oslo University Hospital - "Analysis of SNP rs34945627 in women with primary breast cancer", Luis Costa & Sandra Casimiro.

Prizes, Honours and Awards

Liga Portuguesa Contra o Cancro-NRS/Fundação Terry Fox Award 2016 to M. Martins.

Grupo de Investigação em Cancro Digestivo/Bayer Award 2016 to M. Martins.

Breast Cancer Fellowship LPCC/Pfizer 2016 to I. Gomes.

Fundo IMM/Laço Clinical Grant 2016 to S. Casimiro.

2nd Award for the work in Prostate Cancer presented in Prossyga 2016 to A. Mansinho, D. Macedo, R. Paiva, I. Fernandes, L. Costa.

YOuR Project – Metastatic Breast Cancer Research Grant from Sociedade Portuguesa de Oncologia (Portuguese Society of Oncology) to A. Ferreira.

Industry Contract Research

Preclinical Research Program Agreement with AMGEN - "Analysis of RANK protein expression in Cohort 2 using immunohistochemistry (IHC) in 70 matched primary breast cancer tumors and distant metastasis", Luis Costa.

Preclinical Research Program Agreement with AMGEN -"Analysis of RANK protein expression in a cohort of 55 human bone metastases (BM) from different solid tumors using immunohistochemistry (IHC)", Luis Costa.

PhD Thesis Completed

Isabel Cristina Fernandes Borges da Costa 20/12/2016 Strategic Management of new drugs in oncology - The Importance of an Ethical and Interdisciplinary Framework ISCTE - Instituto Universitário de Lisboa Prof. Maria do Céu Rueff Prof. Sofia Portela.

MsC Thesis Completed

Maria Bettencourt 05/02/2016 Impact of estrogen receptor (ER)-dependent genes on breast cancer relapse to bone Universidade de Lisboa Sandra Casimiro.

De Almeida, Sérgio

Major Interests / Objectives

Our research focuses on the mechanisms that regulate chromatin dynamics during transcription and DNA damage response and how they coordinate with the processes that safeguard the genome integrity.

Our general aims are twofold: first, we aim at investigating the epigenetic regulation of transcription; in addition, we study the molecular mechanisms that sense, signal and repair DNA damage.

A major focus of our research is to understand how changes in transcription, chromatin modification and DNA repair are linked to the development of human diseases such as cancer.

Head of Laboratory

Sérgio Alexandre Fernandes de Almeida, PhD, Assistant Professor

Research Team

Alexandra Coitos Vítor	Master	PhD Student
Ana Isabel Afonso Duarte	Graduate	MSc Student
Ana Margarida Esteves Ferreira	Graduate	MSc Student
Ana Rita Fialho Grosso	PhD	Investigator
Cláudio Haupt Vieira	Graduate	MSc Student
João Maria Rodrigues Perlico da Cruz Sabino	Graduate	MSc Student (Started February)
Mafalda Alexandra Ramos de Matos	Master	PhD Student
Robert M. Martin	PhD	Post-Doctoral Investigator (Started March)
S R Chaitanya. Sridhara	Master	PhD Student
Silvia Filipa Camoeira Gonçalves de Carvalho	Master	Investigator

Laboratory Keywords / Research Areas

Epigenetics, Chromatin Biology, Cancer Biology, Gene expression, DNA repair.

Major Scientific Achievements

In 2016 the members of our unit:

- Published an original manuscript in the international journal "Oncotarget" (Posa et al. 2016) and got one paper accepted for publication in Cell Reports (Sridhara et al. Cell Reports 2017).

- Co-authored 4 publications in collaboration with other labs.

- Started two new research projects funded by FCT and one research project in collaboration with the EGomes lab funded by the iMM.

- Presented our research work in 7 national and international conferences.

- Were awarded the "Best Presentation Award" at the IMM PhD students meeting.

- Participated in advanced teaching in PhD and MSc programs. - completed one MSc thesis.

Selected Publications

Sridhara SC, Carvalho S, Grosso AR, Gallego-Paez LM, Carmo-Fonseca M, de Almeida SF (2017) Transcription dynamics prevent RNA-mediated genomic instability through SRPK2-dependent DDX23 phosphorylation. Cell Reports 17, http://www.cell.com/cell-reports/fulltext/S2211-1247(16)31757-0 (Journal IF: 7.9, Citations: 0).

Grosso AR, Leite AP, Carvalho S, Matos MR, Martins FB, Vítor AC, Desterro JM, Carmo-Fonseca M, de Almeida AF (2015) Pervasive transcription read-through promotes aberrant expression of oncogenes and RNA chimeras in renal carcinoma. eLife https://elifesciences.org/content/4/e09214 (Journal IF: 8.3, Citations: 6).

Carvalho S, Vitor A, Sridhara SC, Martins FB, Raposo AC, Desterro JM, Ferreira J, de Almeida SF (2014) SETD2 is required for DNA double-strand break repair and activation of the p53-mediated checkpoint. eLife https://elifesciences.org/content/3/e02482 (Journal IF: 9.3, Citations: 34).

Carvalho S, Raposo AC, Martins FB, Grosso AR, Sridhara SC, Rino J, Carmo-Fonseca M, de Almeida SF (2013) Histone methyltransferase SETD2 coordinates FACT recruitment with nucleosome dynamics during transcription. Nucleic Acids Research https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3597667/ (Journal IF: 8.8, Citations: 35).

de Almeida SF, Grosso AR, Koch F, Fenouil R, Carvalho S, Levezinho H, Eick D, Gut I, Andrau JC, Ferrier P, Carmo-Fonseca M. (2011) Splicing enhances recruitment of methyltransferase HYPB/Setd2 and methylation of histone H3 lysine 36. Nature Structural and Molecular Biology http://www.nature.com/nsmb/journal/v18/n9/abs/nsmb.2123.html (Journal IF: 12.7, Citations: 105).

Ongoing Research Projects

2016/2019: Novel tumorigenic mechanisms of aberrant epigenetic regulation in clear cell renal cell carcinoma. Coordinator: Sérgio Alexandre Fernandes de Almeida. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/BIM-ONC/0016/2014. Amount: 199944.00. Amount (total): 199944.00.

Other Projects

2015/2019: Depicting epigenetic mechanisms involved in the regulation of pseudogene expression. Coordinator: Ana Rita Grosso.

2016/2019: Accelerating progress toward the new era of precision medicine. Coordinator: Sérgio Fernandes de Almeida.

2016/2016: The DNA damage response in terminally differentiated skeletal myofibers. Coordinator: Sérgio Fernandes de Almeida.

2016/2019: Participation in PRECISE Project – Programa de Atividades Conjuntas – Project number 016394 Precise (Promoção do avanço significativo do conhecimento na área de medicina de precisão e sua translação para benefício da sociedade), financed by the Comissão Diretiva do Programa Operacional Regional de Lisboa and by Fundação para a Ciência e a Tecnologia, I.P. Coordinator: Maria Carmo-Fonseca.

Publications in Peer Review Journals

Sridhara SC, Carvalho S, Grosso AR, Gallego-Paez LM, Carmo-Fonseca M, de Almeida SF (2017) Transcription dynamics prevent RNA-mediated genomic instability through SRPK2-dependent DDX23 phosphorylation. Cell Reports 17 (Journal IF: 7.9).

Posa I, Carvalho S, Tavares J, Grosso AR. (2016) "A pan-cancer analysis of MYC-PVT1 reveals CNV-unmediated deregulation and poor prognosis in renal carcinoma" Oncotarget, Jul 26;7(30):47033-47041. doi: 10.18632/oncotarget.9487 (Journal IF: 6.3, Citations: 1).

Invited Lectures and Seminars

de Almeida SF. "Transcription as a major modulator of Genome Stability", UCBiotech seminars, Cantanhede, November 16, 2016.

de Almeida SF. "Safeguarding the integrity of genetic information" Epigenetics – From mechanisms to disease, ICVS, Braga, April 18-29, 2016.

de Almeida SF. "Transcription dynamics drives the suppression of RNA-mediated genomic instability" BioFig seminar, Lisboa, January 13, 2016.

Communications in International Conferences

MR Matos, I Posa, AR Grosso & SF de Almeida. Epigenetic drivers of genomic instability and intratumor heterogeneity. X IMM/CAML PhD meeting, Lisboa, 2016. (Poster Presentation)

Sridhara SC, Carvalho S, Grosso AR, Carmo-Fonseca M and deAlmeida SF. RNA POL II transcription dynamics signals RNA-mediated genome instability. Jacques-Monod conference; Transcription-Replication crosstalk and genome instability, Roscoff, France, 2016. (Oral Presentation)

Sridhara SC, Carvalho S, Grosso AR, Carmo-Fonseca M and deAlmeida SF. RNA POL II transcription dynamics signalsRNA-mediated genome instability. EMBL-Transcription and Chromatin conference, Heidelberg, Germany, 2016. (Poster Presentation)

Communication in National Conferences

MR Matos, I Posa, AR Grosso & SF de Almeida. Epigenetic drivers of genomic instability and intratumor heterogeneity. Cell Symposia - Hallmarks of Cancer, Ghent Dec 11-13 2016. (Poster Presentation)

M Ferreira. Depicting epigenetic mechanisms involved in the regulation of pseudogene expression, Computational Biology and Bioinformatics Seminars, March 3, 2016. (Oral Presentation)

Sridhara SC, Carvalho S, Grosso AR, Carmo-Fonseca M and deAlmeida SF. Transcription dynamics prevents RNA-mediated genomic instability through SRPK2-dependent DDX23 phosphorylation. X PhD Students Meeting CAML, Instituto de Medicina Molecular, Faculdade de Medicina, Universidade de Lisboa, Lisboa, Portugal, 2016. (Oral Presentation)

AC Vítor, RM Martin, & SF de Almeida. Reciprocal regulatory links between transcription and DNA double-strand break repair. X IMM/CAML PhD meeting, Lisboa, 2016. (Poster Presentation)

Internationalisation

During the last year our team:

- Published two original research papers in international journals.

- Presented our research work in three international conferences.

- Maintained collaborative projects with research labs from the ETH (Switzerland), Jacques Monod Institute (France) and the Babraham Institute (UK).

Prizes, Honours and Awards

EMBL scholarship to attend EMBL Conference: Transcription and Chromatin, Heidelberg, Germany, 2016, to Sridhara SC.

Best Presentation award, X PhD Students Meeting CAML, Instituto de Medicina Molecular, Faculdade de Medicina, Universidade de Lisboa, Lisboa, Portugal, 2016, to Sridhara SC.

Advanced Teaching

- Grosso AR, Lecturer in the workshop "Time Management and Leadership Skills" for the 3rd Inter-Institutional Postdoc Retreat, 21st October 2016.

- Grosso AR, Lecturer in the "Bioinformatics" module of the 2016 MsC Oncobiology (FMUL).

- de Almeida SF, Lecturer of Molecular Biology in the Oncobiology MSc Program, Faculdade de Medicina da Universidade de Lisboa, class of 2016.

- de Almeida SF, Lecturer of the BioSys PhD program, Faculty of Sciences, University of Lisbon, class of 2016.

- de Almeida SF, Coordinator of the module "Molecular & Cell Biology" of the Lisbon BioMed PhD Program, University of Lisbon, class of 2016.

MSc Thesis Completed

João Sabino 02/11/2016 Epigenetic drivers of genomic instability during neural differentiation Instituto Superior Técnico Sérgio de Almeida.

De Carvalho, Mamede

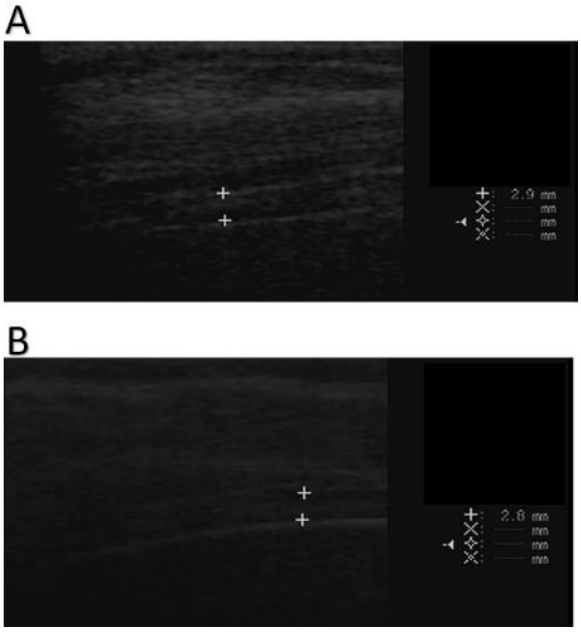
Major Interests / Objectives

Our unit investigates the motor neuron function and its degeneration, peripheral nerve function and small fibre neuropathy, modulation of central nervous system function, behaviour and imaging-neurocomputational models of brain dysfunction. We are contributing to a more complete comprehension of the electrophysiological signs in motor neuron degeneration, reliable evaluation of the small fibres, electrical current influence on nervous system activity and on the understanding of brain structures in behaviour disturbances. In the future, we aim to approach new techniques to measure small fibre and anterior horn cells function, plasticity of the spinal cord motor activity, and the interaction between brain imaging, behaviour, motor movement disorders and electrophysiology.

Head of Laboratory

Mamede de Carvalho, PhD

Graphical Abstract



Ultrasound imaging of the diaphragm muscle showing moderate atrophy in a patient affected by a neuromuscular disease.

Research Team

Ana Catarina de Oliveira da Silva Pronto Laborinho	Graduate	Investigator
Ana Catarina dos Santos Farinha	Master	PhD Student
Ana Isabel Ladeira Portêlo	Master	PhD Student, NA
Ana Rita Mendes Londral Gamboa	PhD	Investigator
Anabela Leuschner Fernandes Cardoso Pinto Noronha Sanches	MD/PhD	Investigator, Assistant Professor, Clinical Specialist
Andreia Leitão Tavares Ribeiro dos Santos	Graduate	PhD Student
André Caetano	Graduate	PhD Student
Ângelo Rodrigo Neto Dias	Graduate	PhD Student
Anna Caroline Marques dos Anjos Braga	Master	Investigator
Artiom Poliakov	Graduate	Master Student
Benjamim Abraham Ohana	Master	Investigator, Clinical Specialist
Fernando Manuel Pinto Ferreira Domingos	MD/PhD	Investigator, Assistant Professor
Gabriel Miltenberger Miltényi	MD/PhD	Investigator, Assistant Professor
Gabriela Barbu Postolache	PhD	Investigator, Assistant Professor
Isabel Maria dos Santos Conceição	Graduate	Investigator, Clinical Specialist
Isabel Martins De Castro	Graduate	Investigator, Technician
João Nuno Marques Parracho Guerra da Costa	MD/PhD	Investigator, Assistant Professor
José Filipe Oliviera Castro	Master	Investigator, Technician
José Pedro Almeida	Graduate	PhD Student
Lena Helene Ernst	PhD	Post-Doctoral Investigator, NA
Leonel Almeida Luis	Graduate	Investigator, Clinical Specialist
Maria da Conceição Jonet de Azevedo Coutinho	MD/PhD	Investigator, Associate Professor, Clinical Specialist
Mariana Fernandes Alves Pereira	Master	Investigator, Technician
Mário Joao Martins Oliveira	MD/PhD	Investigator, Assistant Professor, Clinical Specialist
Marta Luísa Gromicho Morgado Silva	PhD	Post-Doctoral Investigator
Michael Swash	MD/PhD	Investigator
Miguel Oliveira Santos	Graduate	Investigator, Clinical Specialist
Nataniel João Gonçalves Cleto Rosa	Master	PhD Student
Pedro Jorge Filipe Pereira	Master	Investigator
Pedro Miguel Tojais Rodrigues Alves	Graduate	Investigator, Teaching Assistant
Rita Alexandra Figueira Belo	Master	MSc Student (Left January)
Sofia Rita	Master	PhD Student, Faculdade Ciências da Universidade de Lisboa, NA
Susana Cristina Da Costa Pinto	MD/PhD	Investigator
Sofia Fernades	Master	PhD Sudent
Tiago Vaz Maia	PhD	Investigator, Assistant Professor
Vasco Manuel Aranha da Conceição	Master	PhD Student
Victor César Ferreira de Moura Gonçalves	MD/PhD	Investigator, Assistant Professor, Clinical Specialist

Laboratory Keywords / Research Areas

Amyotrophic Lateral Sclerosis, neurophysiology and respiratory involvement. Atrial Fibrillation and autonomic nervous system, neurocomputational modelling of brain disorders, Familial Amyloid Polyneuropathy and early markers of disease, Attention deficit hyperactivity disorder, Biological signal processing.

Major Scientific Achievements

Our Unit is involved neuromuscular disorders, in particular amyotrophic lateral sclerosis (ALS) and familial amyloid polyneuropathy (FAP), and in the nascent field of computational psychiatry. In ALS, we have incorporated a number of international consortiums involved in genetics, reporting of new genes, we are coordinating a European project and kept leading activity in neurophysiology. In FAP, we have proposed new methods for early diagnosis and initiated a large study on epidemiology. In computational psychiatry we published in Nature Neuroscience on this topic (Huys*, Maia*, & Frank, 2016; *equal contributions, cited 40 times) and we co-edited a special issue of Biological Psychiatry: Cognitive Neuroscience and Neuroimaging devoted to the topic. We also published a novel computational account of schizophrenia in Biological Psychiatry (Maia & Frank, in press; IF: 11.212) that has already been recommended twice in Faculty of 1000.

Selected Publications

de Carvalho M., Dengler R., Eisen A., England J.D., Kaji R., Kimura J., Mills K., Mitsumoto H., Nodera H., Shefner J., Swash M (2008). Electrodiagnostic criteria for diagnosis of ALS. Clinical Neurophysiology 119:497-503 (Journal IF: 3.426, Citations: 454).

Huys Q.J., Maia T.V., Frank M.J. (2016). Computational psychiatry as a bridge from neuroscience to clinical applications. Nature Neuroscience 19:404-413 (Journal IF: 14.976, Citations: 41).

Maia, T. V., & Frank, M. J. (2011). From reinforcement learning models to psychiatric and neurological disorders. Nature Neuroscience 14:154-162 (Journal IF: 14.976, Citations: 326).

Ongoing Research Projects

2012/2016: Sampling and biomarker Optimization and Harmonization in Amyotrophic Lateral Sclerosis (ALS) and other. Coordinator: Mamede de Carvalho. Agency: Fundação Ciência e Tecnologia. Coordinator Institution: University Medical Center Utrecht / Department of Neurology. Coordinator PI: Leonard H. van den Berg. Reference: JPND/0002/2011. Amount: 60000.00. Amount (total): 2400000.00.

2015/2016: Slow vital capacity and Forced Vital Capacity in Amyotrophic Lateral Sclerosis: Are they equally sensitive? Coordinator: Mamede de Carvalho. Agency: Cytokinetics, Inc. Reference: Cytokinetics. Amount: 6000.00. Amount (total): 0.00.

2015/2018: Base de Dados Web baseada na Ontologia para Compreeender a Esclerose Lateral Amiotrófica. Coordinator: Mamede de Carvalho. Agency: Fundação para a Ciência e a Tecnologia, IP. Coordinator Institution: 0. Reference: JPND-PS/001/2013. Amount: 140000.00. Amount (total): 140000.00.

2016/2019: NEUROCLINOMICS2 - Descoberta de marcardores de prognóstico em doenças neurodegenerativas através da integracção de dados clínicos e genómicos. Coordinator: Mamede de Carvalho. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/EEI-SII/1937/2014. Amount: 48791.00. Amount (total): 197346.00.

Other Projects

2008/2018: Transthyretin-associated amyloidoses outcomes survey (THAOS). A Global, Multi-Center, Longitudinal, Observational Survey of Patients with Documented Transthyretin (TTR) Mutations or Wild-Type TTR Amyloidoses (Fold Rx Pharmaceuticals, Inc.), Coordinator: Claudio Rapezzi. Coordinator Institution: Universita di Bologna. Coordinator PI: Claudio Rapezzi.

2013/2016: RSE FISIO – necessidades requisites e barreiras de adopção de registro de saúde electrónico em fisioterapia PTDC/DTP-DFS/1661/2012). Coordinator: Gabriela Postolache. Coordinator Institution: RSE FISIO.

2014/2016: Nocturnal Oximetry to test early respiratory changes in Amyotrophic Lateral Sclerosis: application of new methods of analysis (GAPIC 32/2015). Coordinator: Mamede de Carvalho.

2013/2016: Reinforcement learning and motor biases in children with Tourette syndrome (Tourette Association of America, USA). Coordinator: Tiago Vaz Maia.

2014/2018: Control and reward circuits as targets for repetitive behaviors. Coordinator: Prof. Dr.TV Maia - Consultant. Coordinator Institution: National Institute of Mental Health (USA). Coordinator PI: R. Marsh & H. Blair Simpson (Co-PIs).

2014/2018: National Brain Imaging Network – Core Infrastructure. Coordinator: Tiago Maia. Coordinator PI: M. Castelo-Branco.

2014/2018: Control and Reward Circuits as Targets for Repetitive Behaviors (National Institute of Mental Health NIMH 1R01MH104648-01, USA). Coordinator: T. V. Maia: Consultant (co-Principal Investigators: R. Marsh & H. B. Simpson).

2014/2019: Neural mechanisms of sensory predictions in schizophrenia with hallucinations. Coordinator: G. Horga - Prof. Dr.TV Maia - Consultant.

2014/2019: Neural Mechanisms of Sensory Predictions in Schizophrenia with Hallucinations (National Institute of Mental Health NIMH 1K23MH101637-01A1, USA). Coordinator: T. V. Maia: Consultant (Principal Investigator: G. Horga).

2015/2017: Social and non-social reinforcement learning in humans: a model-based pharmaco-fMRI approach. Coordinator: T. Maia & D. Prata (co-PIs).

2015/2017: Mind-Brain College. Coordinator: Tiago Maia/Mamede de Carvalho. Coordinator Institution: University of Lisbon. Coordinator PI: Ana Sebastião.

2015/2018: Neurologic and Psychiatric Disorders: From Synapses to Networks (Horizon 2020 Twinning H2020-TWINN-2015). Coordinator: T. V. Maia: Investigator (Principal Investigator: A. Sebastião).

2016/2017: Phrenic Nerve Conduction Study as a Biomarker of Respiratory Failure in Amyotrophic Lateral Sclerosis: a systematic review and diagnostic test accuracy meta-analysis. Coordinator: Mamede de Cravalho.

2016/2018: Participation in project TWINNING (H2020) “Neurologic and Psychiatric disorders: from synapses to networks” – SynaNet, financed by the European Commission. Coordinator: Ana Sebastião.

2016/2021: T32 Postdoctoral Fellowship for Translational Research in Child Psychiatric Disorders, Department of Psychiatry, Columbia University (National Institute of Mental Health NIMH T32 MH016434, USA), T. V. Maia: Training Faculty. Coordinator: co-Principal Investigators: M. Rynn & R. Marsh.

Publications in Peer Review Journals

Sousa R, Maia F, Luis L. Reply to the commentary on Zuma et al "Inferior peduncle lesion presenting with bilaterally impaired vestibular responses to horizontal and posterior head impulses". Laryngoscope.2016; 126:E424.

Luzeiro I, Luís L, Gonçalves F, and Pavão Martins I, "Vestibular Migraine: Clinical Challenges and Opportunities for Multidisciplinarity," Behavioural Neurology, vol. 2016, Article ID 6179805, 2016.

Luis L, Costa J, Muñoz E, de Carvalho M, Lehnen N, Carmona S, Schneider E, Gordon C.R, Valls-Solé J. Vestibulo-ocular reflex dynamics with head-impulses discriminates hereditary cerebellar ataxias. Vest Research 2016; 26(3):327-334.

Huys, Q. J. M., Maia, T. V., & Paulus, M. P. (2016). Computational psychiatry: from mechanistic insights to the development of new treatments. Biological Psychiatry: Cognitive Neuroscience and Neuroimaging, Vol. 1, No. 5, pp. 382–385 (Journal IF: not available yet; this is a new sub-journal of Biological Psychiatry, whose IF is 11.212; Citations: 0).

Paulus, M. P., Huys, Q. J. M., & Maia, T. V. (2016). A roadmap for the development of applied computational psychiatry. Biological Psychiatry: Cognitive Neuroscience and Neuroimaging, Vol. 1, No. 5, pp. 386-392 (Journal IF: not available yet; this is a new sub-journal of Biological Psychiatry, whose IF is 11.212; Citations: 3).

Franco A, Bentes C, de Carvalho M, Pereira P, Pimentel J, Conceição I. (2016). Epileptic seizures as a presentation of central nervous system involvement in TTR Val30Met-FAP. J Neurol. 263(11):2336-2338.

Oliveira Santos M, Geraldes R, Conceição I. (2016). Peripheral nerve involvement in classic homocystinuria: an unusual association. BMJ Case Rep. 28;2016. pii: bcr2016216255 (doi: 10.1136/bcr-2016-216255).

Schmidt HH, Barroso F, González-Duarte A, Conceição I, Obici L, Keohane D, Amass L. (2016). Management of asymptomatic gene carriers of transthyretin familial amyloid polyneuropathy. Muscle Nerve. 54(3):353-60. doi: 10.1002/mus.25210.

Castro J, Miranda B, Castro I, de Carvalho M, Conceição I. (2016). The diagnostic accuracy of Sudoscan in transthyretin familial amyloid polyneuropathy. Clin Neurophysiol;127(5):2222-7. doi: 10.1016/j.clinph.2016.02.013.

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Mário Oliveira, Pedro S. Cunha, Nogueira da Silva. Managing Systems in Biomedical Engineering Systems and Technologies Volume 511, January 2016, Communications in Computer and Information Science; pp 3-15.

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Oliveira MM, Silva N, Reis H, Sousa P, Quelhas I, Pimenta R, Macedo F (2016). Substrato Eletrofisiológico com Coexistência de Arritmias em Doente com Palpitações Recorrentes Casos Clinicos. In Livro 70 anos CUF.

Pinto, S., de Carvalho, M. (2016). Noninvasive Mechanical Ventilation in Patients with Myasthenic Crisis. In A. Esquinas (ed), NONINVASIVE MECHANICAL VENTILATION: theory, equipment and clinical applications. Springer-Verlag, Ch 41, pp 345-349. (Book Chapter)

Costa, J., de Carvalho, M. (in press) Esclerose Lateral Amiotrófica. In Rego, C., Oliveira, C., Duarte, C. B (eds). NEUROCIÊNCIAS. Lidel. (Book Chapter)

Oliveira, A.R., Gonçalves, S.B., de Carvalho, M., Silva, M.T. (2016). Development of a Musculotendon Model within the Framework of Multibody Systems Dynamics. In Font-Llagunes, J.M. (ed) MULTIBODY DYNAMICS COMPUTATIONAL METHODS AND APPLICATIONS. Springer-Verlag, Ch 10, pp 203-238. (Book Chapter)

Invited Lectures and Seminars

Maia, T. V., Reinforcement learning in neuropsychiatric disorders, in Symposium on Computational Psychiatry: A Bridge Across Levels of Analyses Towards High-Impact Biological Psychiatry, 71st Annual Meeting of the Society of Biological Psychiatry, Atlanta, GA, USA, 2016.

Maia, T. V., Computational psychiatry, in Machine Learning and Bioinformatics Summer School, University of Eastern Finland, Kuopio, Finland, 2016.

Maia, T. V., Learning, synapses, and levels of analysis in psychiatric disorders (discussant for the second day of the conference), In New Insights into Psychiatric Disorders through Computational, Biological and Developmental Approaches, a FENS/Brain Prize Brain Conference, Copenhagen, Denmark, 2016.

Maia, T. V., First Meeting of the Neurologic and Psychiatric Disorders: From Synapses to Networks (SynaNet) European Union-Funded Twinning Project, Institute for Molecular Medicine, School of Medicine, University of Lisbon, Portugal, 2016.

Maia, T. V., The neural bases of repetitive thoughts and behaviors, in Symposium on Neurodevelopmental Disorders: From Neuroscience to the Clinic (Neurodevelopment and Life Events), Champalimaud Centre for the Unknown, Lisbon, Portugal, 2016.

Maia, T. V., Brain imaging and computational models in the study of psychiatric disorders, in Encontro Ciência, Lisbon Congress Centre, Lisbon, Portugal, 2016.

Maia, T. V., The neural bases of motor habits and tics, in 12th Portuguese National Psychiatry Congress, Vilamoura, Portugal, 2016.

Braga, AC. The role of physiotherapy on the palliative Care. Physiotherapy Department – Faculty of Medicine and Health Sciences - Stellenbosch University, South Africa. 21st November 2016.

Luís L. Simposium of Neurosciences of vestibular communication disorders, Buenos Aires, 2016.

Luís L. XXIX Barany Meeting, Seoul 2016.

Luís L. 76th Anual Meeting of the Japan Societyfo Equilibrium Research, Osaka, 2016.

Conceição I. Approach to Pediatric Electromyography and Evoked Potentials. 12o Curso de Formação em Neuropediatria, January 16th, Porto, Portugal.

Conceição I. “Differential diagnosis of TTR-FAP: Improving the diagnosis of a devastating disease”. ARiA V - The patient journey – from early diagnosis to treatment (ARiA IV)” Madrid, Spain on the 4th and 5th of March 2016.

Conceição. Polineuropatia Amilóide Familiar Avanços na avaliação das manifestações neurológicas. 4Ward. PAF 4 anos em retrospectiva ou Futuro em perspectiva. May 13th, 2016, Porto.

Conceição. Transthyretin-Related Hereditary Amyloidosis: Diagnosis of Familial and Sporadic cases. 10th World Congress on Controversies in Neurology (CONy), Lisbon, Portugal, March 17-20, 2016.

Conceição I. Neurophysiology in TTR FAP. TTR FAP Academy. Lubliana 21-22 September 2016.

Conceição I. Clinica Experience: the treatment of TTR-FAP. TTR FAP Academy. Lubliana 21-22 September 2016.

Conceição I. Small Fiber Neuropathies. From symptoms to molecular Diagnosis. Congress of the SPEDNM. October 21th, 2016. Coimbra.

Conceição, T. Coelho. Experiência Clínica com Tafamidis em Portugal. Simposium 4Ward: 4 anos em retrospectiva. Congresso da Sociedade Portuguesa de Neurologia, Lisboa, 23-25 November,2016.

Conceição I. Management options for TTR-FAP. TTR-FAP Patient Identification Masterclass. Heilderberg December 8th, 2016.

Conceição I. Early diagnosis: Recognizing "red flag" signs and symptoms of ATTR. Patient Identification Masterclass. Heilderberg December 8th, 2016.

Miltenberger-Miltenyi, G. Doenças Lisossomais de Sobrecarga: Padrão hereditário, Importância do estudo familiar e Aconselhamento genético. IX CONGRESSO NACIONAL DE ASSOCIAÇÃO PORTUGUESA DE FARMACÊUTICOS HOSPITALARES. Estoril, 2016.

De Carvalho, M. Most Difficult Motor Neuron Patients: early, asymmetric, and "immunologic", in GOTTINGEN KLINISCH-NEUROPHYSIOLOSCHE SEMINAR. Gottingen, 2016.

De Carvalho, M. Clinical Research in Amyotrophic Lateral Sclerosis, in NEUROLOGIC AND PSYCHIATRIC DISORDERS: FROM SYNAPSES TO NETWORKS (SYNANET). Lisbon, 2016.

De Carvalho, M. Estimulación Magnética em Neurologia, in XII CONGRESSO COLOMBIANO DE NEUROLOGIA. Cali, 2016.

De Carvalho, M. Quantificación de Unidades Motoras, in XII CONGRESSO COLOMBIANO DE NEUROLOGIA. Cali, 2016.

De Carvalho, M. Electromiografia dos Músculos Respiratórios, in XII CONGRESSO COLOMBIANO DE NEUROLOGIA. Cali, 2016.

De Carvalho, M. Los Critérios de Awaji en ELA non son Siempre Superiores a los Prévios en ELA, in XII CONGRESSO COLOMBIANO DE NEUROLOGIA. Cali, 2016.

De Carvalho, M. Enfermaded de Neurona Motora: nuevas técnicas diagnósticas y nuevas opciones terapéuticas, in XII CONGRESSO COLOMBIANO DE NEUROLOGIA. Cali, 2016.

De Carvalho, M. Amyotrophic Lateral Sclerosis: overview, in ESCLEROSE LATERAL AMIOTRÓFICA: Ciência e Sociedade. Lisbon, 2016.

De Carvalho, M. The significance of Fasciculations in ALS, in MUSKELZENTRUM/ALS CLINIC St GALLEN: 10th Anniversary Symposium. St Gallen, 2016.

De Carvalho, M. Perspectivas no Tratamento da Doença CMT, in 1º CONGRESSO NACIONAL de CHARCOT-MARIE-TOOTH. Lisboa, 2016.

De Carvalho, M. New Molecular Biomarkers in Motor Neuron Disease, in 6º CONGRESSO da SOCIEDADE PORTUGUESA de ESTUDOS DE DOENÇAS NEUROMUSCULARES. Coimbra, 2016.

Taquicardia ventricular na cardiopatia isquémica - Ablação da disritmia (controvérsia) Mário Oliveira VI Novas Fronteiras em Cardiologia, Óbidos, Fevereiro 2016.

Mapeamento 3D na ablação de fibrilação auricular: “high-resolution mapping” Mário Oliveira ARRITMIAS 2016, Cascais, Fevereiro, 2016.

“Workshop with the Experts”: Continuous optimization in CRT patients - What tools do I have to help me? Mário Oliveira New Horizons in Heart Failure, Monte Carlo, March, 2016.

O Médico de Família e os Dispositivos Implantáveis. Terapêutica de Ressíncronizaçao Cardíaca na Insuficiência Cardíaca Mário Oliveira ENCONTRO CORAÇÃO E FAMILIA, Porto, Março. 2016.

Pacing Cardíaco no tratamento de bloqueio aurículo-ventricular com disfunção ventricular esquerda André Monteiro, Mário Oliveira Sessão clínica do Hospital Santa Marta, Março, 2016.

Explorar o universo da anticoagulação em doentes com fibrilhação auricular não valvular. Dos ensaios á prática clínica Mário Oliveira XXXVII Congresso Português de Cardiologia, Vilamoura, Abril, 2016.

Insuficiência Cardíaca – papel dos dispositivos cardíacos implantáveis Mário Oliveira II Jornadas de Cardiologia de Beja, Maio, 2016-12-19.

Minimização de choques inapropriados - qual a minha programação? Mário Oliveira Reunião Anual dos Centros de Pacing, Ílhavo, Maio, 2016.

Persistent atrial fibrillation in a 60 years-old female with hypertension. Ablation as first choice? - What do the Guidelines say? Mário Oliveira European Congress of Cardiology, September, 2016.

Autonomic Modulation Therapy in Cardiovasculares Diseases Mário Oliveira Russian Congress of Cardiology, Ekaterinburg, September, 2016.

Ablação de FA persistente: mapeamento de voltagem de eletrogramas auriculares Mário Oliveira Reunião Anual de Eletrofisiologia, Estoril, November, 2016.

Communications in International Conferences

Braga AC, Implementation of wireless device to monitor the cardiorespiratory response to aerobic exercise in ALS patients. A pilot study. Poster presentation; 26th International Symposium ALS – Dublin, Dec 2016.

Mónica Inês, Teresa Coelho, Isabel Conceição, Pedro Saramago, Mamede de Carvalho, João Costa. Temporal trends in transthyretin familial amyloid polyneuropathy survival over the last 100 years.

I. 2nd Congress of the European academy of Neurology. Copenhagen, Denmark, May 28-31 May, 2016. (Oral Presentation)

II. 10th World Congress on Controversies in Neurology (CONy), Lisbon, Portugal, March 17-20, 2016. (Poster Presentation)

III. The ISPOR 19th Annual European Congress to Be Held 29 October-2 November 2016 at The Austria Center Vienna, Vienna, Austria. (Poster Presentation)

Mónica Inês, Teresa Coelho, Isabel Conceição, Pedro Saramago, Mamede de Carvalho, João Costa. Long-term survival of 3000 transthyretin familial amyloid polyneuropathy patients over 100 years.

I. 2nd Congress of the European academy of Neurology. Copenhagen, Denmark, 28-31 May, 2016. (Oral Presentation)

II. 10th World Congress on Controversies in Neurology (CONy), Lisbon, Portugal, March 17-20, 2016. (Poster Presentation)

I. Conceição, M Stewart, M Sultan, R Mundayat, M-L Ong, D Keohane. A Health-Related Quality of Life Comparison of Symptomatic Transthyretin Amyloidosis Subjects and Asymptomatic Carriers from the Transthyretin Amyloidosis Outcomes Survey.

I. XV International Symposium on Amyloidosis (ISA), July 3–7, 2016, Uppsala, Sweden. (Poster Presentation)

II. THAOS Scientific Board Meeting, July 2, Uppsala, Sweden. (Oral Presentation)

I Conceicao1, OB Suhr2, T Coelho3, M Waddington Cruz4, H Schmidt5, J Buades6, J Campistol7, J Pouget8, J Berk9, L White10, AM Partisano10, J Chen10, J Gollob10, D Adams. Phase 2 Open-Label Extension Study of Patisiran, an Investigational RNAi Therapeutic for Hereditary ATTR Amyloidosis (hATTR) with Polyneuropathy: Preliminary 24-month data. 21st INTERNATIONAL CONGRESS OF THE WORLD MUSCLE SOCIETY, 4 - 8 October 2016, Granada, Spain. (Poster Presentation)

Mónica Inês, Teresa Coelho, Isabel Conceição, Lara N. Ferreira, Mamede de Carvalho, João Costa. Transthyretin familial amyloid polyneuropathy impact on health-related quality of life. 10th World Congress on Controversies in Neurology (CONy), Lisbon, Portugal, March 17-20, 2016. (Oral Presentation)

Mónica Inês, Teresa Coelho, Isabel Conceição, Filipa Duarte- Ramos, Mamede de Carvalho, João Costa. Epidemiology of transthyretin familial amyloid polyneuropathy in Portugal. 10th World Congress on Controversies in Neurology (CONy), Lisbon, Portugal, March 17-20, 2016. (Oral Presentation)

Ana Franco, Carla Bentes, Mamede de Carvalho, Pedro Pereira, José Pimentel, Isabel Conceição. Epileptic seizures as a presentation of central nervous system involvement in TTR Val30Met-FAP. 2nd Congress of the European academy of Neurology. Copenhagen, Denmark, May 28-31 May, 2016. (Poster Presentation)

Miguel Oliveira Santos, Isabel Conceição. Enzyme Replacement Therapy with Alglucosidase Alfa and Pregnancy in Late-Onset Pompe Disease. 2nd Congress of the European academy of Neurology. Copenhagen, Denmark, May 28-31 May, 2016. (Poster Presentation)

Tiago Teodoro, Pedro Viana, Daisy Abreu, Isabel Conceição, Rita Peralta, Joaquim J Ferreira A peripheral pathway to restless legs syndrome? Clues from familial amyloid polyneuropathy. 2nd Congress of the European academy of Neurology. Copenhagen, Denmark, May 28-31 May, 2016. (Poster Presentation)

Buades Reines, Juan; Coelho, Teresa; Suhr, Ole; Conceicao, Isabel; Waddington-Cruz, Marcia; Schmidt, Hartmut; Adams, David; Pouget, Jean; Berk, John; Falzone, Rick; White, Lindsey; Bettencourt, Brian; Cehelsky, Jeff; Nochur, Sara; Vaishnaw, Akshay; Gollob, Jared; DeFrutos, Ricardo; Campistol, Josep. Estudio abierto de extensión en fase II con patisirán, un ARNi terapéutico en fase de investigación para la amiloidosis hereditaria por TTR con polineuropatía (AhTTR-PN). Resultados a los 18 meses. LXVIII REUNIÓN ANUAL SOCIEDAD ESPAÑOLA NEUROLOGÍA 15 - 19 de Noviembre de 2016 en Valencia.

Mónica Inês, Teresa Coelho, Isabel Conceição, Marta Soares, Pedro Saramago, Mamede de Carvalho, João Costa. Treatment Comparative Effectiveness in Rare Diseases: The Case of Transthyretin Familial Amyloid Polyneuropathy Survival. The ISPOR 19th Annual European Congress to Be Held 29 October-2 November 2016 At The Austria Center Vienna, Vienna, Austria. (Poster Presentation)

G Miltenberger-Miltenyi, L Guedes, T Soares, M Gomes, J Ferreira, T Outeiro. Genetic studies on a Portuguese Parkinson disease patient cohort. 13th International Congress of Human Genetics (ICHG2016), Kyoto, April 2016. (Oral Presentation)

G Miltenberger-Miltenyi, A Magalhães, N Cortez-Dias, O Moldovan, C Navarro, H C Madeira, D Brito. Some lessons from Next generation sequencing in hypertrophic cardiomyopathy. Congress of the Sociedade Portuguesa de Genética Humana, Coimbra, November 2016. (Poster Presentation)

Pedro Alves, Erasmus Head and Neck Course, Cracóvia, Polónia, 1-5 Fevereiro 2016 a. MRI of the Brachial Plexus (lecture) and workshps b. Workshops Nose and PNS.

Pedro Alves, 13º Curso de Radiologia Pediátrica, 12-13 Fevereiro, Coimbra Infeção da Cabeça e Pescoço (Oral Presentation). Casos clínicos músculo-esqueléticos. (Oral Presentation).

Osteomielite – forma rara de apresentação de Febre Q crónica; Nascimento, L.1; Alves, P.1; Gouveia, C. (Poster)

Pedro Alves, Convenção multidisciplinar da Associação de Terapia da Fala, 4-5Março 2016, Lisboa VIDEOFLUROSCOPIA PARA ESTUDO DA DEGLUTIÇÃO (apresentação) Pedro Alves, Escola da Sociedade Portuguesa de Radiologia, 2 de Julho 2016, SPRMN, Lisboa Patologia Osteocartilagínea no joelho.

Pedro Alves, II Curso de Reumatologia Pediátrica, Sociedade Portuguesa de Pediatria, 14-15 Outubro de 2016 Radiologia em Reumatologia Pediátrica.

Pedro Alves, 7ª edição do Curso Pós-Graduado de Cirurgia da Mão, 4 de Março de 2016, Faculdade de Ciências Médicas, CHLC Imagiologia da Mão Pedro Alves, II Encontro de Reabilitação em Pediatria-Malformações Músculo – Esqueléticas, 25-26 de Novembro 2016, Hospital D. Estefânia-CHLC Imagiologia das malformações músculo esqueléticas.

LONG-TERM EXPERIENCE OF REMOTE MONITORING IN A POPULATION WITH CARDIAC IMPLANTABLE ELECTRONIC DEVICES FOR THE TREATMENT OF VENTRICULAR TACHYARRYTHMIAS Marta Nogueira, Mario Oliveira, Pedro S. Cunha, Ana S. Delgado, Ricardo Pimenta, Sandra Alves, Guilherme Portugal, Ana Lousinha, Bruno Valente, Manuel Nogueira, Rui C. Ferreira Europace, Nice, June, 2016.

IS ATRIAL FIBRILLATION RESPONSIBLE FOR LESS RESPONSE TO CARDIAC RESYNCHRONIZATION THERAPY IN HEART FAILURE PATIENTS? Guilherme Portugal, Ana Abreu, Inês Rodrigues, Luis Morais, Pedro S. Cunha, Pedro Rio, Mario Oliveira, Rui C. Ferreira Europace, Nice, June, 2016.

LEFT ATRIAL APPENDAGE VOLUME AS A PREDICTOR FOR ATRIAL FIBRILLATION RECURRENCE AFTER CATHETER ABLATION Pedro Pinto Teixeira, Mario Oliveira, Ruben Ramos, Pedro Silva Cunha, Ana Sofia Delgado, Pedro Modas Daniel, Ricardo Pimenta, Ana Lousinha, Silva Manuel Nogueira, Rui C. Ferreira Europace, Nice, June, 2016.

IMPORTANCE OF A MONITORING ZONE IN THE DIAGNOSIS OF ARRHYTHMIAS IN ICD CARRIERS: RETROSPECTIVE EVALUATION OF A LONG-TERM REMOTE MONITORING PROGRAM. Silvia Aguiar Rosa, Mario Oliveira, Pedro Silva Cunha, Ana Lousinha, Bruno Valente, Ana Sofia Delgado, Ricardo Pimenta, Paulo Osório, Guilherme Portugal, André Monteiro, Brás Manuel, Rui Cruz Ferreira Europace, Nice, June, 2016.

EFFICACY AND SAFETY OF INTERNAL CARDIOVERSION OF PERSISTENT ATRIAL FIBRILLATION IN IMPLANTABLE CARDIOVERTER DEFIBRILLATOR PATIENTS Inês Rodrigues, Mario Oliveira, Pedro Silva Cunha, Paulo Osório, Ana Lousinha, Guilherme Portugal, Luis Almeida Morais, Pedro Modas Daniel, André Viveiros Monteiro, Rui Cruz Ferreira, Europace, Nice, June, 2016.

CARDIAC RESYNCHRONIZATION THERAPY IN PATIENTS WITH RENAL DYSFUNCTION: FACTORS RELATED TO EFFICACY AND OUTCOMES Rita Moreira, Pedro Rio, Pedro S. Cunha, Manuel Nogueira, Luísa Branco, Ana Galrinho, Joana Feliciano, Ricardo Pimenta, Ana S. Delgado, Mario Oliveira, Rui C. Ferreira, Europace, Nice, June, 2016.

WHAT HAPPENS TO NON-RESPONDERS IN CARDIAC RESYNCHRONIZATION THERAPY? Pedro Rio, Mário Oliveira, Pedro Silva Cunha, Manuel Nogueira da Silva, Luísa Moura Branco, Ana Galrinho, João Abreu, Joana Feliciano, André Viveiros Monteiro, Pedro Pinto Teixeira, Ricardo Pimenta, Ana Sofia Delgado, Rui C. Ferreira Europace, Nice, June, 2016.

RESPONSE TO CARDIAC RESYNCHRONIZATION: THE IMPACT OF BASELINE AUTONOMIC NERVOUS SYSTEM FUNCTION Luís Almeida-Morais, Ana Abreu, Inês Rodrigues, Guilherme Portugal, Pedro Silva Cunha, Mário Oliveira, Rui Cruz Ferreira Europace, Nice, June, 2016.

THE IMPACT OF DIFFERENT CRT RESPONSE CRITERIA IN OUTCOMES Inês Rodrigues, Ana Abreu, Mário Oliveira, Pedro Silva Cunha, Ana Lousinha, Guilherme Portugal, Luís Almeida Morais, Pedro Rio, Rita Ilhao Moreira, Rui Cruz Ferreira Europace, Nice, June, 2016.

NEWLY DIAGNOSED ATRIAL FIBRILLATION AFTER DUAL CHAMBER PACEMAKERS IMPLANTATION: THE IMPORTANCE OF RIGHT VENTRICLE PACING SITE André Viveiros Monteiro, Mário Oliveira, Pedro Silva Cunha, Ana Lousinha, Paulo Osório, Bruno Valente, Sílvia Aguiar Rosa, David Severino, Ana Sofia Delgado, Susana Covas, Manuel Braz, Rui Cruz Ferreira Europace, Nice, June, 2016.

INAPPROPRIATE THERAPIES IN CARDIOVERTERDEFIBRILLATOR RECIPIENTS LEAD TO LATE INCREASE IN MAJOR CARDIAC ADVERSE EVENTS: LONG-TERM FOLLOW-UP OF A PRIMARY PREVENTION COHORT Guilherme Portugal, Mário Oliveira, Pedro Silva Cunha, Ana Lousinha, Bruno Valente, André Viveiros Monteiro, Ricardo Pimenta, Ana Sofia Delgado, Braz Manuel, Rui C. Ferreira Europace, Nice, June, 2016.

DO CARDIAC RESYNCHRONIZATION AND EXERCISE TRAINING PROGRAM INFLUENCE INFLAMMATORY RESPONSE IN HEART FAILURE PATIENTS? Inês Rodrigues, Ana Abreu, Luís

Morais, Vanessa Santos, Pedro S. Cunha, Mário Oliveira, Guilherme Portugal, Marta Nogueira, Rui Cruz Ferreira Europace, Nice, June, 2016.

DOES CARDIAC SYMPATHETIC INNERVATION PREDICT CHANGES IN ARTERIAL STIFFNESS IN HEART FAILURE AFTER CARDIAC RESYNCHRONIZATION THERAPY? João Frutuoso, Ana Abreu, Luís Almeida Morais, Inês Rodrigues, Guilherme Portugal, Madalena Coutinho Cruz, Rita I. Moreira, Pedro S. Cunha, Mário Oliveira, Rui C. Ferreira Europace, Nice, June, 2016.

Which patients benefit the most from device-based remote monitoring? Guilherme Portugal, Mário Oliveira, Pedro S. Cunha, Ana Lousinha, Bruno Valente, André Monteiro, Ricardo Pimenta, Ana Sofia Delgado, Manuel Braz, Rui C. Ferreira Europace, Nice, June, 2016.

Very long-term follow-up of patients with different types of atrial septal defects: the arrhythmic perspective André V. Monteiro, Luísa Branco, Mário Oliveira, Ana Lousinha, Pedro Cunha, Paulo Osório, Bruno Valente, Dinis Mesquita, Sílvia A. Rosa, Rui C. Ferreira European Congress of Cardiology, Rome, 2016.

Prognostic predictors of cardiac resynchronization therapy in patients with renal dysfunction Rita Moreira, Pedro Rio, Pedro S. Cunha, Manuel Nogueira, Luísa Branco, Ana Galrinho, Joana Feliciano, Ricardo Pimenta, Ana S. Delgado, Mário Oliveira, Rui C. Ferreira European Congress of Cardiology, Rome, 2016.

Higher risk patients derive the most benefit from device-based remote monitoring Guilherme Portugal, Mário Oliveira, Pedro S. Cunha, André Monteiro, Nogueira da Silva, Ana S. Delgado, Manuel Braz, Ricardo Pimenta, Rui C. Ferreira European Congress of Cardiology, Rome, 2016.

High intensity interval training improves clinical response after cardiac resynchronization therapy Guilherme Portugal, Ana Abreu, Mário Oliveira, Pedro S. Cunha, André Monteiro, Nogueira da Silva, Ana Delgado, Sofia Silva, Teresa Alves, Rui C Ferreira European Congress of Cardiology, Rome, 2016.

Communications in National Conferences

Teresa Coelho, Mónica Inês, Isabel Conceição, Marta Soares, Pedro Saramago, Mamede de Carvalho, João Costa. Treatment Comparative Effectiveness in Rare Diseases: The Case of Transthyretin Familial Amyloid Polyneuropathy Survival. Congresso da Sociedade Portuguesa de Neurologia, Lisboa, 23-25 November,2016. (Oral Presentation)

Conceicao, OB Suhr, T Coelho, M Waddington Cruz, H Schmidt, J Buades, J Campistol, J Pouget, J Berk, M Polydefkis, N Ziyadeh, AM Partisano, J Chen, J Gollob, and D Adams. Phase 2 Open-Label Extension Study of Patisiran, an Investigational RNAi Therapeutic for Hereditary ATTR Amyloidosis (hATTR) with Polyneuropathy: Preliminary 24-month data. Congresso da Sociedade Portuguesa de Neurologia, Lisboa, 23-25 November,2016. (Oral Presentation)

Catarina Falcão de Campos, Miguel Oliveira Santos, Isabel Conceição, Mamede de Carvalho. Mitocondriopatia encefalomiopática-neurogastrointestinal: nova mutação do gene timidina-fosforilase. Congresso da Sociedade Portuguesa de Neurologia, Lisboa, 23-25 November,2016. (Poster Presentation)

Mónica Inês, Teresa Coelho, Isabel Conceição, Filipa Duarte- Ramos, Mamede de Carvalho, João Costa. Epidemiology of transthyretin familial amyloid polyneuropathy in Portugal Congresso da Sociedade Portuguesa de Neurologia, Lisboa, 23-25 November,2016. (Oral Presentation)

Mónica Inês, Teresa Coelho, Isabel Conceição, Filipa Duarte- Ramos4 Mamede de Carvalho, João Costa. Epidemiologia da PAF em Portugal. 4Ward. PAF 4 anos em retrospective ou Futuro em perspectiva. May 13th, 2016, Porto. (Oral Presentation)

Bruno Miranda; José Castro; Isabel Conceição. Transthyretin familial amyloid polyneuropathy: the neuropathy progression on treated patients compared with natural history of disease. 6º National Congress of the SPEDNM. October 21th, 2016. Coimbra. (Oral Presentation)

Miguel Oliveira Santos, Mónica Inês, Isabel Conceição. Polineuropatia Amiloidótica Familiar relacionada com a transtirretina: caracterização demográfica e fenotípica duma população de doentes do Hospital de Santa Maria/CHLN. Congresso da Sociedade Portuguesa de Neurologia, Lisboa, 23-25 November,2016. (Oral Presentation)

Long-term follow-up of patients with surgically corrected congenital heart disease and implantable cardioverter-defibrillator André Monteiro, Pedro Silva Cunha, Mário Oliveira, Manuel Nogueira da Silva, Ana Agapito, Lídia de Sousa, José A. Oliveira, Sílvia Aguiar, Sérgio Laranjo, Conceição Trigo, José Fragata, Ana S. Delgado, Rui C. Ferreira ARRITMIAS 2016, Cascais, February 2016. (Menção Honrosa)

Inappropriate therapies in cardioverter-defibrillator recipients lead to late increase in major cardiac adverse events: long-term follow-up of a primary prevention cohort Guilherme Portugal,

Mário Oliveira, Nogueira da Silva, Pedro Cunha, Bruno Valente, André Monteiro, Ricardo Pimenta, Ana Delgado, Rui C. Ferreira ARRITMIAS 2015, Cascais, February 2016.

Mapeamento hibrido "contacto-não contacto" e abordagem endo-epicárdica combinada na ablação de extrassistolia ventricular polimórfica Sílvia Aguiar Rosa, Mário Oliveira, Manuel Nogueira da Silva, Pedro Silva Cunha, André Monteiro, Ana Sofia Delgado, Ricardo Pimenta, Guilherme Portugal, Rui Cruz Ferreira ARRITMIAS 2016, Cascais, February.

Atrial tachyarrhythmia burden during the "blanking period" following catheter ablation of atrial fibrillation does not predict late arrhythmia recurrence Mário Oliveira, Guilherme Portugal, Pedro Silva Cunha, Ana Lousinha, Bruno Valente, André Monteiro, Ricardo Pimenta, Ana S. Delgado, Manuel Brás, Rui Cruz Ferreira ARRITMIAS 2016, Cascais, February.

Supraventricular arrhythmias detected in a monitoring zone of ICD carriers: diagnostic process, prevalence and clinical impact Sílvia Aguiar Rosa, Mário Oliveira, Pedro S. Cunha, Ana Lousinha, Bruno Valente, Ana Sofia Delgado, Ricardo Pimenta, Guilherme Portugal, André Monteiro, Rui C. Ferreira ARRITMIAS 2016, Cascais, February.

Post-procedural heart rate reduction predicts need for permanent pacemaker implantation after transcathether aortic valve implantation in patients with atrial fibrillation Guilherme Portugal, Mário Oliveira, Nogueira da Silva, Pedro Cunha, Bruno Valente, André Monteiro, Ricardo Pimenta, Ana Delgado, Rui C. Ferreira XXXVII Congresso Português de Cardiologia, Vilamoura, Abril, 2016.

Newly diagnosed atrial fibrillation after dual chamber pacemakers implantation: the importance of right ventricle pacing site. André Monteiro, Pedro Silva Cunha, Ana Lousinha, Marta Nogueira, Guilherme Portugal, J Manuel Conceição, Ricardo Pimenta, Manuel Nogueira da Silva, Ana S. Delgado, Mário M. Oliveira, Rui Cruz Ferreira XXXVII Congresso Português de Cardiologia, Vilamoura, Abril, 2016.

Ventrículo Direito Perfurado André V. Monteiro, Luísa Branco, Mário Oliveira, Ana Lousinha, Pedro S. Cunha, Paulo Osório, Bruno Valente, Dinis Mesquita, Sílvia Aguiar Rosa, Rui C. Ferreira XXXVII Congresso Português de Cardiologia, Vilamoura, Abril, 2016.

Importance of a monitoring zone in the diagnosis of arrhythmias in ICD carriers: retrospective evaluation of a long-term remote monitoring program Sílvia Aguiar Rosa, Mário Oliveira, Pedro S. Cunha, Ana Lousinha, Bruno Valente, Ana Sofia Delgado, Ricardo Pimenta, Guilherme

Portugal, André Monteiro, Rui C. Ferreira XXXVII Congresso Português de Cardiologia, Vilamoura, Abril, 2016.

Inflammatory and myocardial remodeling biomarkers as predictors of functional exercise improvement after CRT Almeida-Morais, Luís, Abreu, Ana, Silva-Cunha, Pedro, Oliveira, Mário, Santa-Clara, Helena, Santos, Vanessa, Mota Carmo, Miguel, Rodrigues, Inês, Portugal, Guilherme, Cruz Ferreira, Rui XXXVII Congresso Português de Cardiologia, Vilamoura, Abril, 2016.

Very long-term follow-up of patients with different types of atrial septal defects: the arrhythmic perspective André Viveiros Monteiro, Luísa Branco, Mário Oliveira, Ana Lousinha, Pedro Silva Cunha, Paulo Osório, Bruno Valente, Dinis Mesquita, Sílvia Aguiar Rosa, Rui Cruz Ferreira XXXVII Congresso Português de Cardiologia, Vilamoura, Abril, 2016.

Device-based remote monitoring and long-term cardiovascular outcomes Guilherme Portugal, Mário Oliveira, Pedro Silva Cunha, André Monteiro, Nogueira da Silva, Ana Sofia Delgado, Ricardo Pimenta, Rui Cruz Ferreira XXXVII Congresso Português de Cardiologia, Vilamoura, Abril, 2016.

Left atrial appendage volume: a predictor for atrial fibrillation recurrence after catheter ablation Pedro Pinto Teixeira, Mário Oliveira, Manuel Nogueira da Silva, Pedro Silva Cunha, Bruno Valente, Ana Lousinha, Luisa Branco, Ana Galrinho, Ricardo Pimenta, Ana S. Delgado, Rui Cruz Ferreira XXXVII Congresso Português de Cardiologia, Vilamoura, Abril, 2016.

Anatomical variations of pulmonary veins in patients undergoing cryoballoon approach for atrial fibrillation ablation Pedro S. Cunha, Mário Oliveira, Nogueira da Silva, Ana Lousinha, Bruno Valente, Ruben Ramos, Manuel Brás, Ricardo Pimenta, Ana S. Delgado, Rui C. Ferreira XXXVII Congresso Português de Cardiologia, Vilamoura, Abril, 2016.

Impacto da disfunção sistólica ventricular esquerda na ablação por cateter da fibrilhação auricular David Severino, Pedro S. Cunha, Bruno Valente, Ana Lousinha, G. Portugal, Pedro Rio, M. Nogueira da Silva, Ricardo Pimenta, A. Sofia Delgado, Mário Oliveira, Rui Cruz Ferreira XXXVII Congresso Português de Cardiologia, Vilamoura, Abril, 2016.

Vias acessórias de condução extra-nodal: 10 anos consecutivos de ablação por cateter Mário Oliveira, M. Nogueira da Silva, P. Silva Cunha, Bruno Valente, Ana Lousinha, Guilherme Portugal,

Ricardo Pimenta, Sofia Delgado, Rui Cruz Ferreira XXXVII Congresso Português de Cardiologia, Vilamoura, Abril, 2016.

Autonomic nervous system modulation in patients with heart failure and resynchronization after high-intensity interval training Pedro Rio, Ana Abreu, Pedro Silva Cunha, Ricardo Pimenta, Andra Alves, Sofia Delgado, Mário Oliveira, Rui Cruz Ferreira XXXVII Congresso Português de Cardiologia, Vilamoura, Abril, 2016.

Aditional effect of high intensity exercise training in heart failure: the reduction of left ventricular mass Pedro Rio, Ana Abreu, Pedro S. Cunha, Mário Oliveira, Rui M. Soares, M. Nogueira da Silva, Luisa Branco, Ana Galrinho, Ana S. Delgado, Sandra Alves, Ricardo Pimenta, Rui Cruz Ferreira XXXVII Congresso Português de Cardiologia, Vilamoura, Abril, 2016.

Arterial baroreflex function in heart failure patients submitted to cardiac resynchronization therapy João Serôdio, Mário Oliveira, Pedro Silva Cunha, M. Nogueira da Silva, Ana Galrinho, Pedro P. Teixeira, Ana S Delgado, Ricardo Pimenta, Rui Cruz Ferreira XXXVII Congresso Português de Cardiologia, Vilamoura, Abril, 2016.

Terapêutica de ressincronização cardíaca: factores relacionados com eventos arritmicos Rita I. Moreira, Guilherme Portugal, Pedro S. Cunha, Nogueira da Silva, Bruno Valente, Ricardo Pimenta, A Sofia Delgado, Mário Oliveira, Rui C. Ferreira XXXVII Congresso Português de Cardiologia, Vilamoura, Abril, 2016.

Echocardiographic parameters associated with long-term appropriate antiarrhythmic therapies in cardiac resynchronization therapy defibrillator patients. Silvia Aguiar Rosa, Pedro Silva Cunha, Luisa Branco, Ana Galrinho, João Abreu, Pedro Rio, Guilherme Portugal, Ricardo Pimenta, Mário Oliveira, Rui C. Ferreira XXXVII Congresso Português de Cardiologia, Vilamoura, Abril, 2016.

Optimização da terapia de ressincronização cardíaca por ecocardiograma transtorácico: a que custos? Maria João Ferreira, Mário Oliveira, Luisa Branco, Ana Galrinho, Pedro S Cunha, Guilherme Portugal, André Monteiro, Rui Cruz Ferreira XXXVII Congresso Português de Cardiologia, Vilamoura, Abril, 2016.

Tratamento invasivo das arritmias em idade pediátrica Sérgio Laranjo, Mário Oliveira, Pedro Silva Cunha, Guilherme Portugal, Ana Lousinha, Bruno Valente, Ricardo Pimenta, Ana S. Delgado, Conceição Trigo, Fátima Pinto, Rui C. Ferreira XXXVII Congresso Português de Cardiologia, Vilamoura, Abril, 2016.

Preditores independentes de arritmias em doentes adultos com Tetralogia de Fallot corrigida: papel da ecocardiografia bidimensional e tecnologia speckle-tracking Marta Nogueira, Lidia Sousa, Ana Agapito, José A. Oliveira, Mário Oliveira, Pedro S. Cunha, Nogueira da Silva, Ricardo Pimenta, Ana S. Delgado, Rui C. Ferreira XXXVII Congresso Português de Cardiologia, Vilamoura, Abril, 2016.

Organisation of Conferences

Maia T. Co-Organizer of the Symposium on Neurodevelopmental Disorders: Neurodevelopment and Life Events, Champalimaud Foundation, Lisboa, Portugal, 2016 Conceição I. Organizer and member of the Scientific Commite at the 6th National Congresso of SPEDNM. 21 Oct Coimbra, Portugal Faculty member at "ARiA V - The patient journey – from early diagnosis to treatment (ARiA IV)" Madrid, Spain on the 4th and 5th of March 2016.

Mário Oliveira (scientific committee), Summer Meeting 2016, Centro Cultural de Belém, Lisbon, July 2016.

Mário Oliveira (scientific committee, organizer), Portuguese Congress of Cardiology 2016 (CPC2016).

Mário Oliveira (national coordenator, organizer), European General Registry of Atrial Fibrillation (investigators meeting), Portuguese Congress of Cardiology, April, 2016.

Mário Oliveira (chairman, organizer), PORTLink study (PORTuguese Research on Telemonitoring with CareLink), Portuguese Congress of Cardiology, April, 2016.

De Carvalho, Member of the Scientific Commission of the Simpósio Esclerose Lateral Amiotrófica- ciência e sociedade, Faculdade de Farmácia, Lisboa, Portugal, 2016.

De Carvalho, Member of the Scientific Commission of the 18th Conference of the European Society for Clinical Hemorheology and Microcirculation, Faculdade de Medicina, Lisboa, Portugal, 2016.
Chairman and Member of Pannel Discussion (Mário O).

"Educational Course on Advanced EP with Focus on AF" Chairmen (open session): Mário Oliveira Lisboa, Fevereiro 2016.

Sessão de encerramento do Congresso Nacional de Medicina Geral e Familiar Estoril, March, 2016 (em representação da Sociedade Portuguesa de Cardiologia).

How to improve CRT delivery? Chairmen: P. Mabo, Mário Oliveira.

New Horizons.

Internationalisation

Isabel Conceição - Scientific Board member of Transthyretin-associated amyloidoses outcomes survey (THAOS) A Global, Multi-Center, Longitudinal, Observational Survey of Patients with Documented Transthyretin (TTR) Mutations or Wild-Type TTR Amyloidosis Member of the Panel Peripheral Nerve Disorders - European Federation of Neurological Societies /EAN.

Mário Oliveira:
Member of the "European Advisory Board" of Medtronic, "International Expert Panel" of Biotronik, "International Strategic Board" of Sorin, International Expert Consultant of Boston Scientific, National Advisory Board for Ensite Precision launch of St Jude Medical and National Expert Panel in Arrhythmology for Rivaroxaban.

Faculty member of the International Training Center of Livanova, in Paris.

Member of the Advisory Board of the European Project TEMIS/SUDOE - Innovative TEchnologies for personnalised MedicIne Services.

Member of the juri for the annual evaluation of cardiology fellows in Santa Marta Hospital, Lisbon.

President of the Juri of the National INFARMED grant "Fund for Investigation in Diabetes". Tutor for the training of the Cardiology Fellow Pedro Pinto Teixeira, Santa Marta Hospital and for Junior Allied Professionals in training for Electrophysiology and Implantable Devices (Ana Almeida, Mariana Pereira).

Coordinator of the Training Programme in Pacing, Electrophysiology and Tilt test/Tilt training for fellows, Santa Marta Hospital (2016 trainees: André Monteiro, Guilherme Portugal, Petra Loureiro, Pedro Modas Daniel, Luis Morais, Samuel Almeida, Nuno Cabanelas, Dinis Mesquita).

Member of the directive board of the "BATE BATE CORAÇÃO" Association.

MEMBER OF THE WORKING GROUP FOR THE "BOLSA DE FORMAÇÃO EM ELETROFISIOLOGIA CARDÍACA APAPE/IPRC".

Coordinator of the project "Carelink Express" – Remote monitoring in pacemaker carriers (Santa Marta Hospital and Vila Franca Hospital) and of the Cost-Effectiveness Study on Automatic Optimization in CRT (SonR, Livanova) (Mamede de Carvalho) NEUROLOGIC.

Prizes, Honours and Awards

Sentinels of Science Award 2016 (Neuroscience), Publons (www.publons.com): awarded to the top 10% reviewers in Neuroscience during the year October 2015 - October 2016 (Tiago Maia).

Article "An integrative perspective on the role of dopamine in schizophrenia" was recommended in Faculty of 1000 twice (Tiago Maia).

(Tiago Maia) ImpactStory Achievements (www.impactstory.org) "Wikitastic": research mentioned in 18 Wikipedia articles; only 1% of researchers are this highly cited in Wikipedia (note: none of these citations in Wikipedia were by me or anyone associated with me) - Greatest Hit": only 5% of researchers get their top publication saved and shared as often as my top publication.

(Isabel Conceição) Prémio de Investigação Científica Professora Doutora Maria Odette Santos-Ferreira: Mónica Inês, Filipa Duarte-Ramos, Marta Soares, Teresa Coelho, Isabel Conceição, Mamede de Carvalho, João Costa. Pharmacoepidemiology of transthyretin familial amyloid polyneuropathy in Portugal.

Forbes Norris Award 2016, promoted by the International Alliance for ALS/MND, for the "management of and advances in understanding ALS/MND, to the benefit of people living with the disease" (Mamede de Carvalho).

Long-term follow-up of patients with surgically corrected congenital heart disease and implantable cardioverter-defibrillator André Monteiro, Pedro Silva Cunha, Mário Oliveira, Manuel Nogueira da Silva, Ana Agapito, Lídia de Sousa, José A. Oliveira, Sílvia Aguiar, Sérgio Laranjo, Conceição Trigo, Jose? Fragata, Ana S. Delgado, Rui C. Ferreira ARRITMIAS 2016. (Menção Honrosa)

Medalha Ouro "25 anos de dedicação" – Hospital Santa Marta, Mário Oliveira Atribuída pelo Conselho de Administração do Centro Hospitalar Lisboa-Central.

Arterial baroreflex function in heart failure patients submitted to cardiac resynchronization therapy João Serôdio, Mário Oliveira, Pedro Silva Cunha, M. Nogueira da Silva, Ana Galrinho, Pedro P. Teixeira, Ana S Delgado, Ricardo Pimenta, Rui Cruz Ferreira PRÉMIO JORGE QUININHA 2016.

Guilherme Portugal, Pedro Cunha, Bruno Valente, Joana Feliciano, Ana Lousinha, Sandra Alves, Manuel Braz, Ricardo Pimenta, Ana Sofia Delgado, Mário Oliveira, Rui C. Ferreira PRÉMIO JORGE QUININHA 2016.

Industry Contract Research

A Phase 2/3 Randomized, Double-Blind, Placebo-Controlled Study to Assess the Efficacy and Safety of ISIS 420915 in Patients with Familial Amyloid Polyneuropathy. (ISIS Pharmaceuticals, Inc.) - Principal Investigator (Isabel Conceição).

APOLLO: A Phase 3 Multicenter, Multinational, Randomized, Doubleblind, Placebo-controlled Study to Evaluate the Efficacy and Safety of ALN-TTR02 in Transthyretin (TTR)-Mediated Polyneuropathy (Familial Amyloidotic Polyneuropathy-FAP)- Principal Investigator (Isabel Conceição).

A Phase 2, Multicenter, Open-Label, Extension Study to Evaluate the Long-Term Safety, Clinical Activity, and Pharmacokinetics of ALN-TTR02 in Patients with Familial Amyloidotic Polyneuropathy Who Have PreviouslyReceived ALN-TTR02 (Isabel Conceição).

AB10015: Combination with Riluzole in the Treatment of Patients Suffering from Amyotrophic Lateral Sclerosis (ABScience, Inc.) - Principal Investigator (Mamede de Carvalho).

VITALITY: Ventilatory Investigation of Tirasemtiv and Assessment of Longitudinal Indices after Treatment for a Year (Cytokinetics, Inc.) - Principal Investigator (Mamede de Carvalho).

LISBONLIVING+ – 2015-2018. (Mamede de Carvalho) Este consórcio é composto por aproximadamente por várias instituições, da Região de Lisboa, que integra a candidatura InnoLIFE que foi vencedora do desafio para a KIC (Knowledge Innovation Community) designado como Healthy Living and Active Ageing, sendo este projecto financiado pelo FCT.

Este visa desenvolver atividades inovadoras, com contributo significativo para a promoção da vida saudável e do envelhecimento ativo, aprofundando o conhecimento e a colaboração efetiva entre os seus membros.

Advanced Teaching

Master Degree and PhD Degree in Neurosciences– co-coordination Mamede de Carvalho

Master Degree and PhD Degree in Neurosciences – Module coordination - Mamede de Carvalho & Tiago Maia

Master Degree in Hyperbaric and Subaquatic Medicine Module coordination - Mamede de Carvalho

Vice-Dean, Faculty Medicine, University of Lisbon. Mamede de Carvalho

Executive Member of the Consortium Lisbon Living +. Mamede de Carvalho

De Carvalho, M, Member of the Jury ("Vogal") for the Ph.D. of Ana Maria Ferreira da Silva ("Use of genomic DNA-reporter tools do dissect pathological mechanisms caused by GAA expansions in Friedreich´s Ataxia"), Doutoramento em Ciências Biomédicas, Faculdade de Medicina, Universidade de Lisboa (advisor: Tiago Outeiro, Faculdade de Medicina, Universidade de Lisboa, Portugal), 2016.

De Carvalho, M, President of the Jury for the Master Degree of João Filipe Gomes ("Study of the Function of the newly Discovered TrekB Receptor Fragment formed by Clapain Cleavage"), Mestrado em Neurociências, Faculdade de Medicina, Universidade de Lisboa, 2016.

De Carvalho, M, President of the Jury for the Master Degree of Sara Luisa Tanqueiro ("Deciphering the Mechanisms underlying the loss of BDNF neuroprotection in an Alzheimer´s Disease Model."), Mestrado em Neurociências, Faculdade de Medicina, Universidade de Lisboa, 2016.

De Carvalho, M, Member of the Jury for the position of Associated Professor of Medicine/Pathophysiology, Faculty of Medicine, University of Coimbra, 2016.

De Carvalho, M, Member of the Jury for the position of Associated Professor of Physiology, Faculty of Medicine, University of Lisbon, 2016.

De Carvalho, M, Member of the Jury for the position of Associated Professor of Pharmacology/Therapeutics, Faculty of Medicine, University of Lisbon, 2016.

De Carvalho, M, Member of the Jury for the position of Coordinator Investigator in Neurosciences, Faculty of Medicine, University of Lisbon, 2016.

Miltenberger-Miltenyi, G., Member of the Jury ("1º Arguente") for the Ph.D. of Susana Moreira Ferreira ("Caracterização de Mutações de gene GLA encontradas em jovens doentes Portugueses com AVC"), Doutoramento em Ciências Biomédicas, Faculdade de Medicina, Universidade do Porto (advisor: Professor Doutor Joao Paulo Oliveira, Faculdade de Medicina, Universidade do Porto, Portugal), 2016.

Miltenberger-Miltenyi, G. Cerebrospinal fluid biomarkers. Master/PhD in Neuroscience - Cognitive Deterioration in Ageing and Dementia. Faculdade de Medicina, Universidade de Lisboa. Symposium: Biomarkers for Alzheimer´s disease. 16.03.2016.

Miltenberger-Miltenyi, G. Genetic diagnostics. Doctoral Program "EnviHealth&Co". Faculdade de Medicina, Universidade de Lisboa. 27.04.2016.

Miltenberger-Miltenyi, G. Genética medica. Programa de Formação em Investigação Clínica para Internos da Formação Específica do Internato Médico do CHLN. 2-13.05.2016.

Guest Editor:

Guest Editor for the Special Issue on Computational Psychiatry (eds.: T. V. Maia, Q. J. M. Huys, & M. J. Frank) in Biological Psychiatry, to be published in 2017 (Journal Impact Factor: 11.21).

Guest Editor for the Special Issue on Model-Based and Machine-Learning Approaches in Applied Computational Psychiatry (eds.: M. P. Paulus, Q. J. M. Huys, & T. V. Maia) in Biological Psychiatry: Cognitive Neuroscience and Neuroimaging (Vol. 1, No. 5), 2016 (Journal Impact Factor not yet available; Journal Impact Factor for the parent journal: 11.21).

Refereeing of Book Proposals for Academic Publishers:

MIT Press (Tiago Maia)

Oxford Press (Mamede de Carvalho)

Refereeing of Grant Proposals:

European Research Council (ERC Consolidator Grants) - (Tiago Maia)

ARISLA – Fondazione Italiana di Ricerca per la Sclerosi Laterale Amiotrofica". (Mamede de Carvalho)

Prinses Beatrix Fund, da Holanda. (Mamede de Carvalho)

"Joint Programme - Neurodegenerative Disease Research: European research projects for Cross-Disease Analysis of Pathways related to Neurodegenerative Diseases" (Mamede de Carvalho)

"Association of British Neurologists": Clinical Research Training Fellowship Application (Mamede de Carvalho)

"Israel-Italia collaboration": Research in motor-neurodegenerative diseases (Mamede de Carvalho)

Presidente da Comissão Julgadora do Prémio Internacional do Instituto Paulo Gontijo para Medicina (Mamede de Carvalho)

Evaluator of the "ENCALS Young Investigator Award" (Mamede de Carvalho)

Evaluator of the "Prémio Científico ULisboa/ Santander Universidades" na área da Motricidade Humana, em 2016 (Mamede de Carvalho)

Evaluator of the Prémio Científico ULisboa/ Santander Universidades" na área da Ciências Biomédicas, em 2016 (Mamede de Carvalho)

Evaluator of the "Prémio Científico ULisboa/Caixa Geral de Depósitos" na área da Saúde, em 2016 (Mamede de Carvalho)

Science and Society

Forbes Norris Award 2016, promoted by the International Alliance for ALS/MND, for the "management of and advances in understanding ALS/MND, to the benefit of people living with the disease".

Dias, Sérgio

Major Interests / Objectives

We study cancer as a systemic disease, and our main focus is to understand how cancers communicate with their "host".

In detail, we study the role of blood vessels, the involvement of bone marrow-derived cells and of metabolic systemic signals in cancer onset and progression.

Head of Laboratory

Sérgio Jerónimo Rodrigues Dias, PhD, Associate Professor

Research Team

Ana Magalhães	PhD	Post-Doctoral Investigator
Neidy Varela Rodrigues	Master	PhD Student
Rita Duarte	Master	Trainee
Sandrina Nóbrega Pereira	PhD	Post-Doctoral Investigator
Susana Monteiro	Graduate	MSc Student (Started September)

Laboratory Keywords / Research Areas

Angiogenesis, Tumor spread, Metabolism.

Major Scientific Achievements

Our main achievements in 2016 were to establish in our Laboratory the necessary tools to address fundamental research questions, such as the metabolic regulation of cancer progression, and the systemic environment as a suppressor of immune cell function during cancer onset and progression. As a result of this effort, we published 2 papers on these subjects, presented several Posters and talks at International and National Meetings, and are in the process of writing 2 manuscripts in the next few months. In addition to our ongoing International and National collaborations, we established fruitfull collaborations with several Labs at IMM, including Vanessa Morais, Edgar Gomes, Luís Costa, Bruno Silva-Santos.

Selected Publications

Costa A, Afonso J, Osório C, Gomes AL, Caiado F, Valente J, Aguiar SI, Pinto F, Ramirez M, Dias S. (2013) miR-363-5p regulates endothelial cell properties and their communication with hematopoietic precursor cells. Journal of Hematology and Oncology 6(1), 87 (Journal IF: 6.263, Citations: 17).

Caiado F, Carvalho T, Rosa I, Remedio L, Costa A, Matos J, Heissig B, Yagita H, Hattori K, da Silva JP, Fidalgo P, Dias Pereira A and Dias S (2013) Bone marrow-derived CD11b+Jagged2+ cells promote epitelial to mesenchymal transition and metastization in colorectal cancer. Cancer Research 73(14), 4233-46 (Journal IF: 8.556, Citations: 17).

Caiado F, Carvalho T, Silva F, Castro C, Clode N, Dye JF and Dias S. (2011) The role of fibrin E on the modulation of endothelial progenitors adhesion, differentiation and angiogenic growth factor production and the promotion of wound healing. Biomaterials 32(29), 7096-105 (Journal IF: 8.38, Citations: 38).

Gomes AL, Carvalho T, Torre C, Serpa J and Dias S. (2010) Hypercholesterolemia promotes bone marrow cell mobilization by perturbing the SDF1:CXCR4 axis. Blood 115(19), 3886-94 (Journal IF: 9.9, Citations: 69).

Serpa J, Caiado F, Carvalho T, Torre C, Goncalves LG, Casalou C, Lamosa P, Rodrigues M, Zhu Z, Lam EW, Dias S (2010) Butyrate rich colonic microenvironment is a relevant selection factor for metabolically adapted tumour cells. Journal of Biological Chemistry 285(50), 39211-23. http://www.jbc.org/content/285/50/39211.short (Journal IF: 4.573, Citations: 25).

Ongoing Research Projects

2015/2016: Directors' Exploratory Projects 2016 (DEP). Coordinator: Sérgio Jerónimo Rodrigues Dias. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: DEP 2016 SDias. Amount: 25000.00. Amount (total): 0.00.

Other Projects

2016/2017: iMM Laço-Sérgio Dias. Coordinator: Sérgio Dias.

2016/2018: Participation in the project "Towards outstanding research and training in tumour". Coordinator: Edgar Rodrigues Almeida Gomes. Agency: Comissão Europeia. Reference: Twinning - ReTuBi.

2016/2019: Participation in PRECISE Project – Programa de Atividades Conjuntas – Project number 016394 Precise (Promoção do avanço significativo do conhecimento na área de medicina de precisão e sua translação para benefício da sociedade), financed by the Comissão Diretiva do Programa Operacional Regional de Lisboa and by Fundação para a Ciência e a Tecnologia, I.P. Coordinator: Maria Carmo-Fonseca.

Publications in Peer Review Journals

LDL-Cholesterol Increases the Transcytosis of Molecules through Endothelial Monolayers. Magalhaes A, Matias I, Palmela I, Brito MA, Dias S. PLoS One. 3; 11(10):e0163988 (2016) (Journal IF: 4,41).

Alvarez-Martins I, Remédio L, Matias I, Diogo LN, Monteiro EC, Dias S. The impact of chronic intermittent hypoxia on hematopoiesis and the bone marrow microenvironment. Pflugers Arch. 468(5):919-32 (2016) (Journal IF: 3.65).

Georgescu A, Alexandru N, Andrei E, Dragan E, Cochior D, Dias S. Effects of transplanted circulating endothelial progenitor cells and platelet microparticles in atherosclerosis development. Biol Cell. 108(8):219-43 (2016) (Journal IF: 2.55).

Trindade S, Rijo-Ferreira F, Carvalho T, Pinto-Neves D, Guegan F, Aresta-Branco F, Bento F, Young SA, Pinto A, Van Den Abbeele J, Ribeiro RM, Dias S, Smith TK, Figueiredo LM. Trypanosoma brucei Parasites Occupy and Functionally Adapt to the Adipose Tissue in Mice. Cell Host Microbe. 8;19(6):837-48 (2016) (Journal IF: 12.55).

Gregório AC, Fonseca NA, Moura V, Lacerda M, Figueiredo P, Simões S, Dias S, Moreira JN. Inoculated Cell Density as a Determinant Factor of the Growth Dynamics and Metastatic Efficiency of a Breast Cancer Murine Model. PLoS One. 2016 Nov 7;11(11):e0165817. doi: 10.1371/journal.pone.0165817 (Journal IF: 4.41).

Braga S, Cardoso J, André S, Brito M, Sánchez P, Orvalho L, Salgado L, Dias S, Pereira-Leal JB, Passos-Coelho JL. Does hypoxic response mediate primary resistance to sunitinib in untreated locally advanced breast cancer? Curr Cancer Drug Targets. 2016 Oct 25 (Journal IF: 3.707).

Silva LS, Goncalves LG, Silva F, Domingues G, Maximo V, Ferreira J, Lam EW, Dias S, Felix A, Serpa J. STAT3:FOXM1 and MCT1 drive uterine cervix carcinoma fitness to a lactate-rich microenvironment. Tumour Biol. 37(4):5385-95 (2016) (Journal IF: 2.92).

Invited Lectures and Seminars

Dias, S. "Metabolism and cancer Progression". Instituto Superior Técnico. Lisbon, Portugal. 2nd March 2016.

Dias S. "How fat feed cancer". Universidade da Beira Interior. Covilhã, Portugal. 5th April 2016.

Dias S. "Metabolism and Cancer". ITQB, Oeiras, Portugal. February 2016.

Communication in International Conferences

Nóbrega-Pereira, S., Carvalho, T., Caiado, F., Matias, I., Graça, G., Gonçalves, L.G., Norell, H., Sílva-Santos, B. and Dias, S. VEGFR2 signaling regulates chemotherapy resistance through reprogramming of mitochondrial metabolism in Acute Myeloid Leukemia. EMBO Cancer CIC bioGune Translational Research in Cancer Metabolism, Bilbao, Spain, October 4-6, 2016. (Poster)

Communications in National Conferences

Nóbrega-Pereira, S., Carvalho, T., Caiado, F., Matias, I., Graça, G., Gonçalves, L.G., Norell, H., Sílva-Santos, B. and Dias, S. VEGFR2 signaling regulates chemotherapy resistance through reprogramming of mitochondrial metabolism in Acute Myeloid Leukemia. 2ND ASPIC International Congress, Oporto, Portugal, April 28-29, 2016. (Poster)

Rodrigues NV, Silva Santos B, Dias S. LDL-cholesterol inhibits the anti-tumor functions and breast cancer targeting by gd T cells 1-3 June, 2016, Lisboa, Oeiras-IGC.

Rodrigues NV, Silva Santos B, Dias S. LDL-cholesterol inhibits the anti-tumor functions and breast cancer targeting by gd T cells. 2ND ASPIC International Congress, Oporto, Portugal, April 28-29, 2016. (Poster)

Rodrigues NV, Silva Santos B, Dias S. LDL-cholesterol inhibits the anti-tumor functions and breast cancer targeting by gd T cells. Date: 16-17 July, 2016. Lisboa, Oeiras-IGC.

Advanced Teaching

Dias, S. Lecturer and Coordinator of the Module "Development and Cancer". MSc Course in Oncobiology. FMUL, Lisbon. February 2016.

Dias, S. Lecturer. Class on "Metabolism and Cancer". Gulbenkian Institute PhD Program. Oeiras, Portugal. May 6th, 2016.

Dias, S. Lecturer. Class on "Tumor Angiogenesis and Metastases". "Programa Doutoramento Gulbenkian para a Cooperação e Desenvolvimento (PDGCD). Universidade de Cabo Verde, Praia, Cabo Verde. Março 2016.

Science and Society

IMM-Laço Lectures ("What is Cancer"?) at Secondary Schools in the Greater Lisbon Area.

Ferreira, Joaquim

Major Interests / Objectives

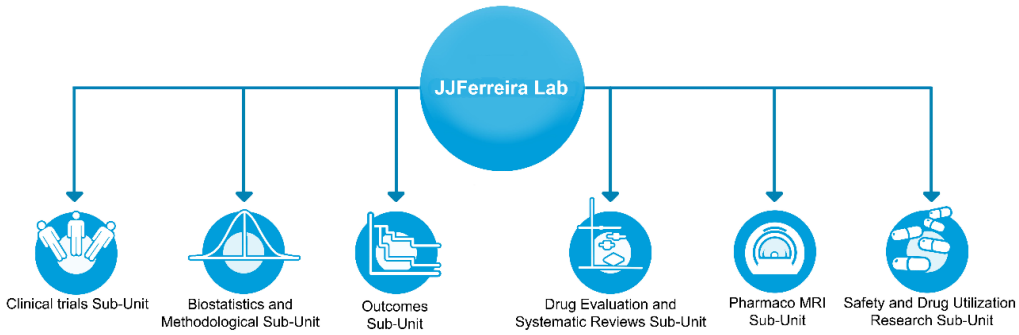
The main mission of the Joaquim Ferreira Lab is to contribute to the development of effective and safe therapeutic interventions through the establishment of optimized methodologies for the design, conduction, analysis and report of clinical trials.

The main clinical pharmacology domains of interest are clinical trials methodology, outcomes, systematic reviews, safety, pharmaco MRI and drug utilization. The emphasis is mainly on novel, early phase proof-of-principle clinical studies and new methodological and trial designs but the scope extends throughout the clinical development spectrum. We also envision collaborations with the pharmaceutical industry, facilitating the conduction of clinical trials to a shared role in the early stages of drug and planning of clinical development.

Head of Laboratory

Joaquim Ferreira, MD/PhD, Clinical Specialist, Associate Professor, Faculdade Medicina da Universidade de Lisboa.

Graphical Abstract



Research Team

Ana Cláudia Marques Salgueiro	Master	Technician (Started March)
Ana Isabel Santos Augusto	Graduate	Trainee
Ana Margarida Faisca do Carmo Pires de Noronha	Graduate	Administrative (Left July)
Ana Marta Teixeira Anes	Master	Investigator, Faculdade Medicina da Universidade de Lisboa, Teaching Assistant

Ana Patrícia Silva Pita Lobo	Graduate	Investigator, Hospital Fernando da Fonseca, MD
Ana Rita Simões Cardoso	Master	Investigator, Campus Neurologico Senior (CNS)
Ana Teresa Martins Sousa Santos	Master	Lab Manager
Anabela Ferreira Valadas	Graduate	Investigator, Hospital São Bernardo, Setúbal, MD
Andreia Susana Delgado Magalhães	Master	Investigator (Left September)
Catarina Afonso Godinho	PhD	Investigator, Campus Neurologico Senior (CNS), Assistant Professor
Claudio Virgilio Antunes David	Graduate	Investigator, CHLN, MD, Faculdade Medicina da Universidade de Lisboa, Teaching Assistant
Cristina Sampaio	PhD Agregação	Investigator, Faculdade Medicina da Universidade de Lisboa, Full Professor
Daisy Andreína Vieira De Abreu	Master	Investigator
Daniel Gomes Caldeira	Graduate	PhD Student, Hospital Garcia de Orta, MD, Faculdade Medicina da Universidade de Lisboa, Teaching Assistant
Daniela Marina Dias Guerreiro	Graduate	Investigator (Started August)
Ema Roque	Graduate	Administrative, Faculdade Medicina da Universidade de Lisboa
Eunice Ferreira Vicente	Graduate	MSc Student
Helena Isabel Vicente dos Santos	Graduate	Technician
Inês Alves de Sá Lousada	Graduate	Technician
Isabel Cristina Ramos Peixoto Guimarães	PhD	Investigator, Associate Professor
Joana Margarida do Nascimento Fagundes Carvalho	Graduate	Investigator
João Costa	MD/PhD	Investigator, Hospital da Luz, MD, Faculdade Medicina da Universidade de Lisboa, Assistant Professor
João Pedro da Silva Almeida	Graduate	MSc Student
Josefa Domingos	Master	Investigator, Campus Neurologico Senior (CNS)
Kelli Destri	Master	Technician
Leonor Correia Guedes	Master	PhD Student, CHLN, MD
Márcio Correia Barra	Master	Administrative
Margarida Borges	Graduate	Investigator, Faculdade Medicina da Universidade de Lisboa, MD, Teaching Assistant
Margherita Fabbri	Graduate	PhD Student, DIBINEM Department of Biomedical and Neuromotor Science, University of Bologna, ALMA MATER STUDIORUM, MD
Maria Dulce dos Santos Neutel	Graduate	Investigator, Hospital do Espírito Santo, Évora, MD
Maria Isabel Boaventura de Atouguia	Graduate	Investigator, Celgene, MD, Faculdade Medicina da Universidade de Lisboa, Teaching Assistant
Maria João Bettencourt Pereira Forjaz	PhD	Investigator

Mário Miguel Coelho da Silva Rosa	PHD	Investigator, FML, Teaching Assistant, Clinical Specialist
Miguel Coelho	PHD	Investigator, FMUL, Teaching Assistant, Clinical Specialist
Nádia Filipa Cruz Lourenço	Graduate	MSc Student
Nilza Karina Cabral Gonçalves	Master	Investigator
Nuno Miguel Dias Almeida	Graduate	MSc Student
Olga Sofia de Oliveira Caetano	Graduate	Administrative, Faculdade Medicina da Universidade de Lisboa
Pedro Miguel Guedes de Oliveira	Graduate	Investigator (Left July)
Raquel de Queirós Bouça Ribeirinho Machado	Master	MSc Student
Raquel Filipa de Oliveira Rodrigues	Graduate	MSc Student
Raquel José Ladeira Lobo	Master	Investigator
Ricardo Miguel Ribeiro Marques Cunha Fernandes	PhD	Investigator, CHLN, MD, Faculdade Medicina da Universidade de Lisboa, Invited Assistant
Sofia Cristina Pereira Coutinho Reimao	PHD	Investigator, FMUL, Teaching Assistant, Clinical Specialist
Tânia Sofia Santos Silva	Master	Investigator (Started December)
Tiago Heleno Mendes	Master	Investigator
Tiago Mestre	Master	PhD Student, University of Ottawa, Assistant Professor, MD
Tiago Rodrigues Teodoro	Master	PhD Student, CHLN, MD
Tiago Soares	Master	MSc Student
Vanda Filipa Viseu Cândido Freitas Castro	Master	Investigator, Campus Neurologico Senior (CNS), Clinical Specialist
Verónica Candeias Caniça	Graduate	Investigator (Started August)

Laboratory Keywords / Research Areas

Parkinson's disease, Huntington Disease, Movement Disorders, Neuropharmacology, Clinical trials, Systematic reviews.

Major Scientific Achievements

In 2016 our major achievements were the publication of 3 manuscripts:

1. Ferreira JJ, Lees A, Rocha JF, Poewe W, Rascol O, Soares-da-Silva.Bi-Pk 1 Investigators. Opicapone as an adjunct to levodopa in patients with Parkinson´s disease end end-of-dose motor fluctuations: a randomised, double-blind controlled trial. Lancet Neurology 2016, 15(2): 154-165. IF: 21.90.

2. Rodrigues FB, Neves JB, Caldeira D, Ferro JM, Ferreira JJ, Costa J. Endovascular treatment versus medical care alone for ischaemic stroke: systematic review and meta-analysis. BMJ 2016, 353: i1754. IF: 59.558.

3. Caldeira D, Costa J, FERREIRA JJ. Bridging anticoagulation in patients with atrial fibrillation. New England Journal of Medicine 2016, 374(1):91-92.

Selected Publications

FERREIRA JJ, Lees A, Rocha JF, Poewe W, Rascol O, Soares-da-Silva (2016) Bi-Pk 1 Investigators. Opicapone as an adjunct to levodopa in patients with Parkinson´s disease end end-of-dose motor fluctuations: a randomised, double-blind controlled trial. Lancet Neurology 15(2), 154-165. (Journal IF: 21.90, Citations: 1).

Reimão S, Ferreira, S, Nunes RG, Lobo PP, Neutel D, Abreu D, Gonçalves N, Campos J, FERREIRA JJ (2016) Magnetic resonance correlation of iron content with neuromelanin in the substantia nigra of early-stage Parkinson's disease. European Journal of Neurology 368-374, 23(2). (Journal IF: 4.06, Citations: 6).

Rodrigues FB, Neves JB, Caldeira D, Ferro JM, FERREIRA JJ, Costa J. (2016) Endovascular treatment versus medical care alone for ischaemic stroke: systematic review and meta-analysis. Medical Journal 353, i1754. (Journal IF: 59.558, Citations: 7).

Valadas A, Contarino MF, Albanese A, Bhatia KP, Falup-Pecurariu C, Forsgren L, Friedman A, Giladi N, Hutchinson M, Kostic VS, Krauss K, Lokkegaard A, Marti MJ, Milanov I, Pirtosek Z, Relja M, Skorvanek M, Stamelou M, Stepens A, Tamas G, Taravari A, Tzoulis C, Vandenberghe W, Vidailhet M, FERREIRA JJ, Tijssen MA. (2016) Management of dystonia in Europe: a survey of the European network for the study of the dystonia syndromes. European Journal of Neurology 23(4), 772-779. (Journal IF: 4.06, Citations: 0).

Caldeira D, Costa J, FERREIRA JJ (2016) Bridging anticoagulation in patients with atrial fibrillation. New England Journal of Medicine 374(1), 91-92. (Journal IF: 59.558, Citations: 0).

Ongoing Research Projects

2014/2016: Acompanhamento, referenciação e avaliação de doentes com doença de Parkinson. Coordinator: Joaquim Ferreira. Agency: Medtronic Portugal, Lda. Reference: Medtronic - Acompanhamento de Doentes. Amount: 12000.00. Amount (total): 0.00.

2015/2020: Conservative iron chelation as a disease-modifying strategy in Parkinson's disease: a multicentric, parallel-group, placebo-controlled, randomized clinical trial of deferiprone. Coordinator: Joaquim Ferreira. Agency: Comissão Europeia. Reference: PHC - 633190 - FairParKII. Amount: 187083.00. Amount (total): 0.00.

2014/2017: Avaliação Abrangente e Não Enviesada de Fatores de Risco Genéticos e Ambientais para a Doença de Parkinson. Coordinator: Joaquim Ferreira. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: JPND-RF/0001/2012. Amount: 130000.00. Amount (total): 130000.00.

2014/2017: Cuidados para Parkinsonismo em Estádio Avançado. Coordinator: Joaquim Ferreira. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: JPND-HC/0002/2012. Amount: 110000.00. Amount (total): 110000.00.

2013/2016: Research Design and Data Analysis in Support of Clinical Trial Design and Clinical Research Projects. Coordinator: Joaquim Ferreira. Agency: CHDI Foundation, Inc. Reference: CHDI. Amount: 525762.00. Amount (total): 525762.00.

2014/2016: Ablynx N.V. Coordinator: Ricardo Miguel Ribeiro Marques Cunha Fernandes. Agency: Ablynx N.V. Reference: Ablynx. Amount: 4800.00. Amount (total): 3000.00.

2015/2016: Actividades de Investigação Clinicas, e de acompanhamento de doentes com doença de Parkinson. Coordinator: Joaquim Ferreira. Agency: Medtronic Portugal, Lda. Reference: Medtronic - Acompanhamento de Doentes II. Amount: 12000.00. Amount (total): 12000.00.

Other Projects

2014/2018: Dysarthria in Parkinson's disease: Lusophony vs. Francophony comparison Financiamento solicitado. Coordinator: Joaquim Ferreira. Coordinator Institution: Laboratoire Parole et Langage - Centre National de la Recherche Scientifique. Coordinator PI: Serge Pinto.

Publications in Peer Review Journals

Almeida D, Cristovam E, Caldeira D, Ferreira JJ, Marques T. (2016) Are there effective interventions to prevent hospital-acquired Legionnaires' disease or to reduce environmental reservoirs of Legionella in hospitals? A systematic review. American Journal of Infection Control, 44 (11): E183-E188. IF:1.995. 0 Citations.

Caldas AC, Guedes LC, Ferreira JJ, Coelho M. (2016) Musician's Dystonia as the Initial Presentation of Parkinson's Disease, Movement Disorders Clinical Practice, 3(6): 624-625. IF: 6.010. 0 Citations.

Poewe W, Burbaud P, Castelnovo G, Jost W, Ceballos-Baumann A, Banach M, Potulska-Chromik A, Ferreira JJ, Bihari K, Ehler E, (et al.) (2016) Efficacy and safety of a botulinum toxin A liquid formulation in cervical dystonia: A randomized-controlled trial. Movement Disorders, 31(11): 1649-1657. (Journal IF: 6.01, Citations 0).

Alves PN, Reimão S, Campos C, Maruta C, Rocha L, Graça SA, Fonseca AC, Martins IP. (2016) Loss of object ownership feeling following a left hemisphere infarct. Cortex, 84: 132-134. (Journal IF: 7.229, Citations 0).

Chendo I, Ferreira JJ. (2016) Pimavanserin for the treatment of Parkinson's disease psychosis. Expert Opinion on Pharmacotheraphy, 17(15): 2115-2124. (Journal IF: 3.543, Citations: 0).

Mestre T, Van DE, Davis AM, Bachoud-Levi AC, Busse M, Anderson K, Ferreira JJ, Mahlknecht P, Turmas V, Sampaio C, (et al). MDS Comm Rating Scales Dev. (2016), Rating scales for behavioral symptoms in Huntington's disease: Critique and recommendations. Movement Disorders, 31(10): 1466-1478. (Journal IF: 6.01, Citations: 0).

Fabbri M, Rosa MM, Ferreira JJ. (2016) Clinical pharmacology review of opicapone for the treatment of Parkinson's disease. Neurodegenerative Disease Management, 6(5):349-362. (Journal IF: not indexed, Citations: 0).

Sanchez-Ferro A, Elshehabi, M, Godinho, C, Salkovic, D, Hobert, MA, Domingos J, Van Uem, JMT, Ferreira JJ Maetzler, W. (2016) New methods for the assessment of Parkinson´s disease (2005 to 2015): a systematic review. Movement Disorders 31(9):1283-1292. (Journal IF: 6.01, Citations: 1).

Van Uem J, Maier KS, Hucker S, Scheck O, Hobert M, Santos AT, Fagerbakke O, Larsen, Ferreira JJ, Maetzler W. (2016) Twelve-week sensor assessment in Parkinson's disease: Impact on quality of life. Movement Disorders, 31(9): 1337-1338. (Journal IF: 6.01, Citations: 1).

Cerreta F, Ankri J, Bowen D, Cherubini A, Cruz Jentoft AJ, Guomundsson A, Haberkamp M, Jansen P, Marchionni N, Morgan S, Ronneamaa E, Petrovic M, Pilotto A, Rosa MM, Wildiers H. (2016) Baseline frailty evaluation in drug development. Journal of Frailty & Aging, 5(3): 139-140.

Rodrigues FB, Neves JB, Caldeira D, Ferro JM, Ferreira JJ, Costa J (2016) Endovascular treatment versus medical care alone for ischaemic stroke: systematic review and meta-analysis. Medical Journal, 353:11754. IF: 59.558, 1 Citation.

Ferreira JJ, Mestre T, Guedes LC, Coelho M, Rosa MM, Santos AT, Sampaio C, Rascol O. (2016) Expresso coffee for the treatment of somnolence in Parkinson´s Disease: results of n-of-1 trials. Frontiers in Neurology, 7(27). IF: 3.184, 0 Citations.

Godinho C, Domingos J, Cunha G, Santos AT, Fernandes RM, Abreu D, Goncalves N, Matthews H, Isaacs T, Duffen J, Al-Jawad A, Larsen F, Serrano A, Weber P, Thoms A, Sollinger S, Graessner H, Maetzler W, Ferreira JJ. (2016) A systematic review of the characteristics and validity of monitoring technologies to assess Parkinson's disease. Journal of Neuroengineering and rehabilitation. 13(24). (Journal IF: 2.419, Citations: 0).

Macerollo A, Meppelink AM, Teodoro T, Ricciardi L, Cordivari C, Edwards MJ. (2016) Isolated task-specific lip tremor. Parkinsonism & Related Disorders, 29:138-139. (Journal IF: 3.794, Citations: 0).

Teodoro T, Edwards MJ. (2016) Functional movement disorders. Current opinion in Neurology, 29(4): 519-525. (Journal IF: 4.469, Citations:0).

Fernandes RM, Andrade MG, Constant C, Malveiro D, Magalhães M, Abreu D, Azevedo I, Sousa E, Salgado R, Bandeira T. (2016) Acute viral bronchiolitis: Physician perspectives on definition and clinically important outcome. Pediatric Pulmonology, 51(7): 724-732. (Journal IF: 2.85, Citations: 0).

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Fabbri M, Leodori G, Fernandes RM, Bhidayasiri, R, Marti, MJ, Colosimo, C, Ferreira JJ. (2016) Neutralizing Antibody and Botulinum Toxin Therapy: A Systematic Review and Meta-analysis. Neurotoxicity Research 29 (1): 105-107. (Journal IF: 3.14, Citations: 0).

Warner JH, Sampaio C. (2016) Modeling Variability in the Progression of Huntington's Disease A Novel Modeling Approach Applied to Structural Imaging Markers from TRACK-HD. CPT-PHARMACOMETRICS & SYSTEMS PHARMACOLOGY, 5(8): 437-445. (Journal IF: not indexed. Citations: 0).

Invited Lectures and Seminars

Ferreira JJ. Investigação clínica. VI Reunião Fórum das Sociedades Médicas. Novartis, TagusPark, Porto Salvo, 25 de Novembro, 2016.

Ferreira JJ. Doença de Parkinson. 37º Congresso Português de Geriatria e Gerontologia. Lisboa, 25 de Novembro de 2016.

Rosa, MM. Clinical development - Safety, Efficacy; Stats; Pharmacovigilance; Market Access. Clinical Development Course Module V CAML. Lisbon, 5-2-2016.

Ferreira JJ. A visão do Clínico Investigador. Ensaios Clínicos – Capacitar doentes – Uma participação informada. Faculdade de Farmácia de Lisboa. 25 de Novembro de 2016.

Ferreira JJ. Are we fullfilling need of patient with motor fluctuations? New COMT inhibitors – Opicapone. Spanish Congress of Neurology. Valencia, November 16, 2016.

Fernandes R. Indicações e experiência de Alto Fluxo na Urgência Pediátrica. Curso de Urgências, 17º Congresso Nacional de Pediatria, Sociedade Portuguesa de Pediatria. Porto, 2 November 2016.

Ferreira JJ. What´s new in the treatment of PD. 9º Fórum Bial de Neurologia. Lisboa, 28-29 Outubro 2016.

Ferreira JJ. Are we fulfilling the needs of patients with motor fluctuations? The role of COMT inhibitors: an expert panel discussion, Bial Symposium at MDS, Berlin, June 22, 2016.

Ferreira JJ. Concept and therapeutic interventions for late-stage PD, VIII Sumposium – Transtornos cognitivos en la enfermedad de Parkinson, San Sebastian, September 30, 2016.

Rosa MM, Drug-induced Movement Disorders. 9th Annual MDS-ES Summer School for Young Neurologists, Lisboa, Portugal, July 15-17 2016.

Ferreira JJ, Pharmachological treatment of Parkinson's disease. 9th Annual MDS-ES Summer School for Young Neurologists, Lisboa, Portugal, July 15-17 2016.

Reimão s, Introduction to imaging of Movement Disorders. 9th Annual MDS-ES Summer School for Young Neurologists, Lisboa, Portugal, July 15-17 2016.

Costa J, Introduction to neurophysiological evaluations in Movement Disorders. 9th Annual MDS-ES Summer School for Young Neurologists, Lisboa, Portugal, July 15-17 2016.

Fernandes R. Ácaros de armazenamento, que importância? 5º Congresso de Alergologia Pediátrica, Sociedade Portuguesa de Alergologia Pediátrica, Lisboa, 13 -14 May 2016.

Fernandes R. Alergia e Rinite, Sibilância e Asma. Voz e Via Aérea na Criança, Serviço de Otorrinolaringologia, Faculdade de Medicina da Universidade de Lisboa, Lisboa, 6 May 2016.

Ferreira JJ. Optimizing interventional trial designs for MSA. 5th International MSA Congress, Salerno, Italy, April 23, 2016.

Ferreira JJ. Doença de Parkinson – dos investigadores aos cuidadores, Colégio Mente-cérebro, Faculdade de Medicina de Lisboa, 15 de Abril de 2016.

Ferreira JJ. Is what we have always what we need in PD treatment and evaluation? Lecturer at the 10th World Congress on Controversies in Neurology, Lisbon, Portugal, March 17-20, 2016.

Ferreira JJ. Fisiopatologia na Doença de Parkinson. Lecturer at 3ªs Jornadas de Fisioterapia da Escola Superior de Saúde Egas Moniz, Lisbon, March 5, 2016.

Ferreira JJ. Novas perspectivas na intervenção no Parkinsonismo, Convenção Multidisciplinar da Associação Portuguesas de Terapeutas da Fala, Lisboa, Fundação Portuguesa das Comunicações, March 5, 2016.

Fernandes R. Alergia Medicamentosa - testes laboratoriais, orientações clínicas após o diagnóstico. 3ª Reunião Temática da Sociedade Portuguesa de Alergologia Pediátrica - Alergia Medicamentosa, Sociedade Portuguesa de Alergologia Pediátrica, Évora, 20 Fevereiro 2016.

Fernandes R. Definition, intervention and outcomes in bronchiolitis trials. Conferência Programa de Formação Médica Avançada - uma perspectiva de meio percurso. Fundação Gulbenkian, Lisboa, January 2016.

Fernandes R. Casos clínicos e exercícios práticos. Curso de Farmacologia Clínica Pediátrica. XXII Jornadas de Pediatria, Departamento de Pediatria, Hospital de Santa Maria, Faculdade de Medicina de Lisboa, Lisboa, 20 January 2016.

Communications in International Conferences

Constant C, Cosme J, Fernandes RM, Alves C, Bandeira T. ESTUDO ESPIROPED - Avaliação do conhecimento sobre espirometria entre os médicos que seguem crianças com asma em Portugal. XXXII Congresso de Pneumologia, Sociedade Portuguesa de Pneumologia. Algarve, 10-12 November 2016. P047.

t Pollock M, Fernandes RM, Hartling L. Evaluation of AMSTAR to assess methodological quality of systematic reviews in overviews of reviews. 4th Cochrane Colloquium. Cochrane Collaboration. Seoul, 23-27 October 2016. (long oral).

Carolina Constant, Joana Cosme, Ricardo M. Fernandes, Pedro Fonte, João A. Fonseca, Carlos Alves, Teresa Bandeira. Practice of spirometry among physicians caring for children with asthma in Portugal – The EspiroPed survey. International Congress London 2016, European Respiratory Society, London, 3-7 September 2016. European Respiratory Journal 2016 48: PA1314.

Pollock M, Fernandes RM, Becker LA, Featherstone R, Hartling L. Guidance for conducting overviews of reviews: results from a scoping review and qualitative metasummary. 24th Cochrane Colloquium. Cochrane Collaboration. Seoul, 23-27 October 2016. (Short oral)

Caldeira D, Almeida A, Pinto FJ, Ferreira JJ. Recommendations and levels of evidence underlying the current guidelines of the European Society of Cardiology. ESC Congress, August 2016, Rome, Italy.

Caldeira D, Morgado JM, Cruz Î, Martins C, Pereira H on behalf of the Investigators of Portuguese Registry of Acute Coronary Syndromes. The impact of anemia in patients with St-Segment elevation myocardial infarction. ESC Congress, August 2016, Rome, Italy.

Caldeira D, Morgado JM, Cruz Î, Martins C, Pereira H on behalf of the Investigators of Portuguese Registry of Acute Coronary Syndromes. The impact of thrombocytopenia in patients with ST-segment elevation myocardial infarction. ESC Congress, August 2016, Rome, Italy.

FB Rodrigues, M Silva, Duarte GS, Camara R, Fernandes R, Abreu D, Costa J, Ferreira JJ. Systematic review and meta-analysis of randomized controlled trials to evaluate placebo response in restless legs syndrome. 20th International Congress, International Parkinson and Movement Disorder Society, June 19-23, 2016, Berlin, Germany. Movement Disorders, 2016; 31 (Poster 954).

Constant C, Fernandes R, Silva AM, Descalco A, Bandeira T. The impact of new reference equations (GLI 2012) on spirometry interpretation un children and adolescent. XV CIPP Meeting, International Congress on Pediatric Pulmunology, June 23-26, 2016, Naples. Pediatric Pulmonology, 2016; 51:S81.

Communications in National Conferences

Ferreira JJ. Parkinson's disease phenomenology and progression. Speech theraphy in Parkinson´s disease and Parkinsonism, Autumn School, Campus Neurológico Sénior, Torres Vedras, 28-30 October, 2016. (Oral Presentation)

Coelho M. Atypical Parkinsonism. Autumn School, Speech theraphy in Parkinson´s disease and Parkinsonism, Campus Neurológico Sénior, Torres Vedras, 28-30 October, 2016. (Oral Presentation)

Lobo PP. Surgical management in PD. Speech theraphy in Parkinson´s disease and Parkinsonism, Autumn School, Campus Neurológico Sénior, Torres Vedras, 28-30 October, 2016. (Oral Presentation)

Coelho M. The chalenge of axial signs in PD. Speech theraphy in Parkinson´s disease and Parkinsonism, Autumn School, Campus Neurológico Sénior, Torres Vedras, 28-30 October, 2016. (Oral Presentation)

Valadas A. Dystonia and other movement disorders affecting speech. Speech theraphy in Parkinson´s disease and Parkinsonism, Autumn School, Campus Neurológico Sénior, Torres Vedras, 28-30 October, 2016. (Oral Presentation)

Cardoso R. Oromotor assessment in Parkinsonism. Speech theraphy in Parkinson´s disease and Parkinsonism, Autumn School, Campus Neurológico Sénior, Torres Vedras, 28-30 October, 2016. (Oral Presentation)

Ferreira JJ. How to design clinical studies for speech theraphy interventions in Parkinsonism. Speech theraphy in Parkinson´s disease and Parkinsonism, Autumn School, Campus Neurológico Sénior, Torres Vedras, 28-30 October, 2016. (Oral Presentation)

Cosme J, Constant C, Fernandes R, Alves C, Bandeira T. ESTUDO ESPIROPED - Avaliação do conhecimento atual sobre espirometria em idade pediátrica em Portugal. 16º Congresso Nacional de Pediatria, Sociedade Portuguesa de Pediatria. Albufeira, 22-24 October 2015. PAS-033 - (16SPP-2642).

Cosme J, Constant C, Fernandes R, Alves C, Bandeira T. ESTUDO ESPIROPED Avaliação do conhecimento atual sobre espirometria em idade pediátrica em Portugal. 37ª Reunião Anual, Sociedade Portuguesa de Alergologia e Imunologia Clínica. Lisboa, 7-9 October 2016. CO 02.

Organisation of Conferences

Fernandes R. Organizing Comittee - II Workshop de farmacologia clínica na criança e no adolescente, Departamento de Pediatria, Hospital de Santa Maria, November 2016.

Costa J. Organizer and lecturer at Comparações Indirectas e Meta-análises em rede, Faculdade de Medicina da Universidade de Lisboa, Lisboa, Portugal, November 25-26 2016.

Fernandes RM. Organizing Committee - Curso de Pediatria – Do Básico à Diferenciação, Módulo III – Imunoalergologia. Núcleo de Formação e Investigação do Departamento de Pediatria, Hospital Santa Maria, Centro Hospitalar Lisboa Norte e Centro Académico de Medicina de Lisboa, Associação para as Crianças de Santa Maria, Lisboa, 11 November 2016.

Ferreira JJ. Organizer and lecturer at Speech theraphy in Parkinson´s disease and Parkinsonism, Autumn School, Campus Neurológico Sénior, Torres Vedras, 28-30 October, 2016.

Ferreira JJ. Organizer and lecturer at 9th Annual MDS-ES Summer School for Young Neurologists, Lisboa, Portugal, July 15-17 2016.

Costa J. Organizer and lecturer at Apoio à Investigação Clínica: Medicina Baseada na Evidência, Faculdade de Medicina de Universidade de Lisboa, Lisboa, Portugal, June 22.

Costa J. Organizer and lecturer at Introduction to Systematic Reviews and Meta-analysis, Faculdade de Medicina da Universidade Lisboa, April 8-9 2016.

Prizes, Honours and Awards

Caixa Geral de Depósitos Science Award 2016 to Joaquim Ferreira.

Advanced Teaching

Fernandes R. Reacções Adversas Medicamentosas em Pediatria. Curso Intensivo de Farmacovigilância, Unidade de Farmacovigilância de Lisboa e Vale do Tejo, Lisboa, 15 November 2016.

Fernandes R. Assessing risk of bias. Cochrane Course - Introduction To Systematic Reviews And Meta-Analysis, Cochrane Portugal, Junior Doctor's International Meeting, Centro Hospitalar Lisboa Norte, Lisboa, 13 November 2016.

Fernandes R. Princípios de imunoterapia específica. Curso de Pediatria – Do Básico à Diferenciação, Módulo III – Imunoalergologia. Núcleo de Formação e Investigação do Departamento de Pediatria, Hospital Santa Maria, Centro Hospitalar Lisboa Norte e Centro Académico de Medicina de Lisboa, Associação para as Crianças de Santa Maria. Lisboa, 11 November 2016.

Fernandes R. Anafilaxia na idade pediátrica. Curso de Pediatria – Do Básico à Diferenciação, Módulo III – Imunoalergologia. Núcleo de Formação e Investigação do Departamento de Pediatria, Hospital Santa Maria, Centro Hospitalar Lisboa Norte e Centro Académico de Medicina de Lisboa, Associação para as Crianças de Santa Maria. Lisboa, 11 November 2016.

Ferreira JJ. Proposta de projectos colaborativos Brasil-Portugal. 10º Encontro Nacional de Distúrbios do Movimento, Brasil, Natal, 3-5 Novembro 2016.

Ferreira JJ. Drogas modificadoras da evolução da doença. 10º Encontro Nacional de Distúrbios do Movimento, Natal, 3-5 Novembro 2016.

Caldeira D. Quando e como agregar dados. Ler e interpretar meta-análise. Curso de Revisões Sistemáticas como projecto de Investigação clínica, GAPIC, Faculdade de Medicina de Lisboa, 22 de Setembro de 2016.

Hartling L, Pollock M, Fernandes R, Brennan S. Integrating evidence across reviews: an introduction to overviews of reviews. 24th Cochrane Colloquium, Cochrane Collaboration. Seoul, 23 October 2016.

Pollock M, Fernandes R, Brennan S, Hartling L. When, why, and how to conduct a Cochrane overview of reviews. 4th Cochrane Colloquium, Cochrane Collaboration. Seoul, 27 October 2016.

Ferreira JJ. Troubles du sommmeil et patholgie du mouvement (RLS, MPJ, RBD). International Parkinson and Movement Disorder Society & Les Amis du Mouvement Anormal, Marrakech, Maroc, 13-15 Octobre, 2016.

Fernandes R. Selecção de estudos. Avaliação de qualidade/viés. Curso de Revisões Sistemáticas como projecto de Investigação clínica, GAPIC, Faculdade de Medicina de Lisboa, 22 de Setembro de 2016.

Fernandes R. Análise crítica / Avaliação qualidade dos artigos incluidos. Curso Revisões Sistemáticas como Projecto de Investigação Clínica, GAPIC, Faculdade de Medicina, Universidade de Lisboa, 21 September 2016.

Alarcão J. Revisão sistemática - o que é? Escrever o protocolo. Estratégias de pesquisa bibliográfica. Curso de Revisões Sistemáticas como projecto de Investigação clínica, GAPIC, Faculdade de Medicina de Lisboa, 22 de Setembro de 2016.

Ferreira JJ. Assessing the Parkinsonian patient. Parkinson´s disease educational course for industry professionals, Berlin, June 2016.

Ferreira JJ. Management od advanced (Motor Complications) and late Stage PD. Parkinson´s disease educational course for industry professionals, Berlin, June 2016.

Sampaio C. Outcome measures, clinical scales and other assessment tools for the evaluation of PD. Parkinson´s disease educational course for industry professionals, Berlin, June 2016.

Sampaio c. Regulatory procedures for approval and reimbursement: EU vs US. Parkinson´s disease educational course for industry professionals, Berlin, June 2016.

Fernandes R. Clinical epidemiology module - presentation on multiple topics. Programa de Formação em Investigação Clínica, Internato Médico, Centro Hospitalar Lisboa Norte. 1-31 May 2016.

Ferreira JJ, Frozen gait. 2nd Congress of the European Academy of Neurology, Copenhaghen, Denmark, May 28-31, 2016.

Fernandes R. Clinical outcomes and biomarkers. Module Therapeutic Research in Neurosciences, Master in Neurosciences, Faculdade de Medicina da Universidade de Lisboa, Lisboa, 31 May 2016.

Fernandes R. Reacções Adversas Medicamentosas em Pediatria. Curso Básico de Farmacovigilância, Unidade de Farmacovigilância de Lisboa e Vale do Tejo, Lisboa, 23 May 2016.

Ferreira JJ, Pain in Non-Parkinson Disorders, Pathogenesis and Management of Pain in Parkinson´s Disease, Padua, Italy, April 18-19, 2016.

Fernandes R. Assessing risk of bias. Systematic Reviews Module, Introduction to Clinical Research: a practical course, Centro Académico de Medicina de Lisboa - CAML Doctoral Program, Lisboa, 8 and 9 April 2016.

Ferreira JJ, Tratamento nas Doenças do Movimento – Ensaios Clínicos que há de novo? Fórum de Neurologia, Palace Hotel – Monte Real (Leiria), 19-21 Maio 2016.

Rosa MM, Clinical development, Introduction to clinical research: a practical course, Module V - Clinical trials, Faculty of Medicine, University of Lisbon, February 5, 2016.

Fernandes R, Assessment tools and outcomes, Introduction to clinical research: a practical course, Module V - Clinical trials, Faculty of Medicine, University of Lisbon, February 5, 2016.

Caldeira D, Critical appraisal of clinical trials, Introduction to clinical research: a practical course, Module V - Clinical trials, Faculty of Medicine, University of Lisbon, February 5, 2016.

Caldeira D, Design of clinical trials and protocol development, Introduction to clinical research: a practical course, Module V - Clinical trials, Faculty of Medicine, University of Lisbon, February 5, 2016.

Ferreira JJ, Medical management of Parkinson disease, The 15 th International Parkinson´s Disease Symposium in Takamatsu, Takamatsu, Japan, February 6, 2016.

Science and Society

Costa J. Curso de Revisões Sistemáticas como projecto de Investigação clínica, GAPIC, Faculdade de Medicina de Lisboa, Course Director, Lisbon, Portugal.

Ferreira J. MDS Parkinson´s Disease Educational Course, Berlin Germany.

Ferreira J. MDS-ES Summer School for Young Neurologists, Course Director, Lisbon, Portugal.

Valadas A Diário da Manhã, TVI24. 11 Abril 2016.

Ferreira J Fala Portugal, RTP1. 12 Abril 2016.

Ferreira J Maratona da Saúde, RTP1. 1 Maio 2016.

Ferreira J Diário da Manhã, TVI. 3 Maio 2016.

Ferreira J Serviços de saúde têm de adaptar-se a nova realidade de doentes de Parkinson, LUSA. 22 Novembro 2016.

PhD Thesis Completed

Mário Miguel Coelho da Silva Rosa 08/07/2016 Padrão de prescrição de agentes antiparkinsónicos: caracterização do uso pelos clínicos University of Lisbon Cristina Sampaio.

Miguel Vilhena Coelho 27/04/2016 Later stages of Parkinson´s Disease University of Lisbon Joaquim Ferreira.

MSc Thesis Completed

Raquel de Querós Bouça Ribeirinho Machado 25/05/2016 Assessment of methodological characteristics and quality reporting of clinical trials in palliative care University of Lisbon Joaquim Ferreira.

Tiago Filipe Soares 19/07/2016 Tradução e validação da MDS - UPDRS para a língua portuguesa Faculdade de Medicina de Lisboa Joaquim Ferreira.

Ferro, José

Major Interests / Objectives

The general objective is to increase the knowledge and foster the prevention and treatment of major prevalent and disabling disorders involving the brain, such as stroke and Alzheimer's disease. The main advantage is the strong collaboration among the experienced PIs, based on common clinical investigation methodologies and particular features of research expertise, expanded by multiple national and international collaborations in the areas of basic neurosciences, clinical genetics, advanced statistical methods, biological engineering, and neuroimaging. The researchers of UNIC conducted clinical trials and assessed the clinical impact of different interventions in multinational efforts to get new targeted and personalized treatments for these prevalent and disabling brain disorders.

Head of Laboratory

José Manuel Morão Cabral Ferro, PhD.

Research Team

Alcina Fraga Luz	No degree	Administrative
Alexandre Valério de Mendonça	PhD	Principal Investigator
Ana Catarina Gaspar Fonseca	MD/PhD	Investigator
Ana Isabel Figueira Verdelho	MD/PhD	Investigator
Bruno André e Silva Miranda	PhD	Investigator
Carolina Pires Maruta	PhD	Investigator
Catarina Beatriz Silva Ferreira	Master	MSc Student, PhD Student NeurULisboa
Diana de Aguiar Dias de Sousa	Master	PhD Student
Elisabete Mendes Lopes	Undergraduate	Investigator
Frederico Simões do Couto	Graduate	Investigator
Isabel Pavão Martins	MD/PhD	Investigator
José Manuel Borges Fonseca	Master	PhD Student
Lara Isabel Pires Melo Caeiro	PhD	Investigator
Maria Gabriela Mariano Leal	Graduate	Investigator
Maria Luisa Albuquerque	MD	Investigator
Maria Luisa Mendonça Correia Pires	Undergraduate	Administrative
Maria Manuela Gil Guerreiro	PhD	Investigator
Marisa Marina Fatuda Costa	Undergraduate	Administrative
Patrícia Canhão	MD/PhD	Investigator
Pedro Miguel Nascimento Alves	Master	PhD Student
Sara Cunha Leal Rocha Coelho	Master	PhD Student
Sofia Madureira	Master	PhD Student
Teresa Pinho e Melo	MD	Investigator

Vanda Filipa Viseu Cândido De Freitas	Master	MSc Student
Vitor Oliveira	MD/PhD	Investigator

Laboratory Keywords / Research Areas

Stroke, Aphasia, Cognitive decline, Complex diseases, Genetics, Clinical trials.

Major Scientific Achievements

The researchers of lab made significant scientific contributions expressed in full papers published in international peer-reviewed journals. Important results were obtained regarding cerebral venous thrombosis, age-related white matter changes and cryptogenic stroke. Advances were made on the definition of cryptogenic stroke the identification of new serum biomarkers of cardioembolic stroke. New data was published describing cognitive dysfunction during migraine attacks. New mutations in genes involved in complex neurodegenerative disorders were characterized.

Selected Publications

Aguiar de Sousa D, Canhão P, Ferro JM. (2016) Safety of pregnancy after cerebral venous thrombosis: a systematic review. Stroke 47, 713. (Journal IF: 5787, Citations: 3).

Amarenco P, Lavallée PC, Labreuche J, Albers GW, Bornstein NM, Canhão P, Caplan LR, Donnan GA, Ferro JM, Hennerici MG, Molina C, Rothwell PM, Sissani L, Školoudík D, Steg PG, Touboul PJ, Uchiyama S, Vicaut É, Wong LK; TIA registry.org Investigators (2016) One-year risk of stroke after transient ischemic attack or minor stroke. N Engl J Med 374, 1533. (Journal IF: 59.558, Citations: 0).

Rodrigues FB, Neves JB, Caldeira D, Ferro JM, Ferreira JJ, Costa J. (2016) Endovascular treatment versus medical care alone for ischaemic stroke: systematic review and meta-analysis. BMJ 353, i1754. (Journal IF: 19697, Citations: 4).

Dávalos A, Alvarez-Sabín J, Castillo J, Díez-Tejedor E, Ferro J, Martínez-Vila E, Serena J, Segura T, Cruz VT, Masjuan J, Cobo E, Secades JJ; International Citicoline Trial on acUte Stroke (ICTUS) trial investigators. (2012) Citicoline in the treatment of acute ischaemic stroke: an international, randomised, multicentre, placebo-controlled study (ICTUS trial). Lancet 380, 349. (Journal IF: 44.002, Citations: 74).

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Ongoing Research Projects

2010/2016: Coordinator: Patrícia Canhão. Agency: SOS Attaque Cérébrale. Reference: TIA Registry. Amount: 14520.00. Amount (total): 8620.00.

2013/2017: ISCVT-2. Coordinator: José Manuel Morão Cabral Ferro. Agency: Congrex Schweiz AG. Reference: ISCVT-2. Amount: 155000.00. Amount (total): 155000.00.

2014/2016: Metastroke. Coordinator: José Manuel Morão Cabral Ferro. Agency: Bayer Portugal, S.A. Reference: Bayer. Amount: 11000.00. Amount (total): 6000.00.

2014/2017: Setting the stage for prevention trials in Genetic Frontotemporal Lobar Degeneration. Coordinator: Alexandre Valério de Mendonça. Agency: Ana Paula dos Santos Marques da Costa. Reference: GenFi. Amount: 10000.00. Amount (total): 10000.00.

2014/2017: Formação Jovens Neurologistas. Coordinator: José Manuel Morão Cabral Ferro. Agency: Biogen Idec. Reference: Formação Jovens Neurologistas. Amount: 5000.00. Amount (total): 5000.00.

2014/2017: Avaliação de Intervenções e Estratégias na Demência do Jovem. Coordinator: Alexandre Valério de Mendonça. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: JPND-HC/0003/2012 - Rhapsody. Amount: 125000.00. Amount (total): 125000.00.

2015/2016: 1º Prémio de Comunicação Oral – 9º Congresso AVC. Coordinator: Diana de Aguiar Dias de Sousa. Agency: Sociedade Portuguesa do Acidente Vascular Cerebral. Coordinator Institution: 0. Reference: 1º Prémio de Comunicação Oral – 9º Congresso AVC. Amount: 1500.00. Amount (total): 0.00.

2016/2018: Fundo de Investigação para a Saúde - FPJ001028.

2016/2019: Impacto da atividade física no defeito cognitivo vascular. Coordinator: Ana Isabel Figueira Verdelho. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/DTP-DES/3706/2014. Amount: 199588.00. Amount (total): 199588.00.

2016/2019: NEUROCLINOMICS2 - Descoberta de marcadores de prognóstico em doenças neuro degenerativas através da integração de dados clínicos e genómicos. Coordinator: Alexandre Valério de Mendonça. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/EEI-SII/1937/2014. Amount: 48791.00. Amount (total): 197346.00.

Other Projects

2012/2017: To - Act Trial - Thrombolysis or Anticoagulation for Cerebral Venous Thrombosis study. Coordinator: José M. Ferro. Coordinator Institution: Academic Medical Centre Department of Neurology, Amsterdam the Netherlands. Coordinator PI: Jan Stam.

2013/2017: ISCVT-2 Pregnancy - Assessing the Safety of pregnancy after Cerebral Venous Thrombosis. Coordinator: José M. Ferro.

2013/2017: DECOMPRESSIVE-2- Prospective Registry of Decompressive surgery for patients with Cerebral Venous Thrombosis. Coordinator: José M. Ferro.

2014/2016: Avaliação de capacidades cognitivas na afasia. Coordinator: José Fonseca.

2014/2017: Pathophysiology of Venous infarction. Coordinator: José M. Ferro.

2014/2017: EXCOA-CVT - Benefit of EXending oral antiCOAgulant treatment after Cerebral Venous Thrombosis. Coordinator: José M. Ferro.

2016/2017: Cardioembolic imaging in acute stroke. Coordinator: Ana Catarina Fonseca.

2016/2017: RE-SPECT-CVT: Randomised, Open-label, Exploratory Trial with Blinded Endpoint Adjudication (PROBE), Comparing Efficacy and Safety of Oral Dabigatran Etexilate Versus Oral Warfarin in Patients with Cerebral Venous and Dural Sinus Thrombosis Over a 24-week Period. Coordinator: José Ferro - Global Principal Investigator.

2016/2017: Cognition and brain amyloid deposition in transthyretin-related familial amyloid polyneuropathy". Coordinator: Isabel Pavão Martins.

2016/2017: The Relation between attention and visual memory in Mild Cognitive Impairment. Coordinator: Isabel Pavão Martins.

2016/2017: Neural mechanisms of word learning: Contributions from amnesic patients and fMRI on healthy ageing. Coordinator: Isabel Pavão Martins.

2016/2017: Cardioembolic imaging in acute stroke. Coordinator: Ana Catarina Fonseca.

2016/2018: "Fisiopatologia do Enfarte Venoso", que tem como objetivo principal determinar marcadores imagiológicos e bioquímicos relacionados com o desenvolvimento de lesões cerebrais nos doentes com Trombose Venosa Cerebral. Coordinator: Diana de Aguiar Sousa.

2016/2019: Participation in PRECISE Project – Programa de Atividades Conjuntas – Project number 016394 Precise (Promoção do avanço significativo do conhecimento na área de medicina de precisão e sua translação para benefício da sociedade), financed by the Comissão Diretiva do Programa Operacional Regional de Lisboa and by Fundação para a Ciência e a Tecnologia, I.P. Coordinator: Maria Carmo-Fonseca.

Publications in Peer Review Journals

Aguiar de Sousa D, Canhão P, Ferro JM. (2016) Safety of pregnancy after cerebral venous thrombosis: a systematic review. Stroke 47,713-718. (Journal IF: 5.787, Citations: 3).

Albuquerque M, Martins M, Coelho M, Guedes L, Ferreira JJ, Rosa M, Martins IP (2016) Advanced Parkinson disease patients have impairment in prosody processing. J Clin Exp Neuropsyc, 38:208–216. (Journal IF 1.693, Citations: 1).

Amarenco P, Lavallée PC, Labreuche J, Albers GW, Bornstein NM, Canhão P, Caplan LR, Donnan GA, Ferro JM, Hennerici MG, Molina C, Rothwell PM, Sissani L, Školoudík D, Steg PG, Touboul PJ,

Uchiyama S, Vicaut É, Wong LK; TIA registry.org Investigators (2016) One-year risk of stroke after transient ischemic attack or minor stroke. N Engl J Med 374:1533-1542. (Journal IF 59.558, Citations: 0).

Azevedo L, Costa MR, Fonseca AC, Pinho e Melo T. (2016) Recurrent cerebral ischaemic events in the setting of paroxysmal nocturnal haemoglobinuria. BMJ Case Rep. 4;2016.

Camm AJ, Amarenco P, Haas S, Hess S, Kirchhof P, Kuhls S, van Eickels M, Turpie AG; XANTUS Investigators. (2016) XANTUS: a real-world, prospective, observational study of patients treated with rivaroxaban for stroke prevention in atrial fibrillation. Eur Heart J 37:1145-1153. (Journal IF 15.064, Citations: 47).

Campos C, Magalhães AD, Peralta R, Antunes AP, Falcão F, Pimentel J, Albuquerque L (2016) Non-convulsive status epilepticus presenting with hiccups. Eur J Neurol 23: (Suppl. 1) 111–358. (Journal IF 3.956, Citations: 0).

Castro J, Miranda B, Castro I, de Carvalho M, Conceição I. (2016) The diagnostic accuracy of Sudoscan in transthyretin familial amyloid polyneuropathy. Clin Neurophysiol 127:2222-2227. (Journal IF 3.426, Citations: 1).

Coelho S, Guerreiro M, Chester C, Silva D, Maroco J, Coelho M, Paglieri F, de Mendonça A. (2016) Time perception in Mild Cognitive Impairment: interval length and subjective passage of time. J Int Neuropsychol 22:755-64. (Journal IF 2.633, Citations: 0).

Coelho S, Guerreiro M, Chester C, Silva D, Maroco J, Paglieri F, de Mendonça A. (2016) Delay discounting in Mild Cognitive Impairment. J Clin Exp Neuropsychol 12:1-11 (Journal IF 1.693, Citations: 0).

Cotlarciuc I, Marjot T, Khan MS, Hiltunen S, Haapaniemi E, Metso TM, Putaala J, Zuurbier SM, Brouwer MC, Passamonti SM, Bucciarelli P, Pappalardo E, Patel T, Costa P, Colombi M, Canhão P, Tkach A, Santacroce R, Margaglione M, Favuzzi G, Grandone E, Colaizzo D, Spengos K, Arauz A, Hodge A, Ditta R, Debette S, Zedde M, Pare G, Ferro JM, Thijs V, Pezzini A, Majersik JJ, Martinelli I, Coutinho JM, Tatlisumak T, Sharma P; ISGC (International Stroke Genetics Consortium) and BEAST investigators. (2016) Towards the genetic basis of cerebral venous thrombosis-the BEAST Consortium: a study protocol. BMJ Open. 6:e012351. (Journal IF 2.562, Citations: 0).

Dionisio MR, Pereira P, Vieira AF, Polonia A, Castro A, Costa L, Paredes J, Albuquerque L (2016) New clues to decision tree in glioblastoma relapse? An institutional experience. Neuro-Oncology 18(suppl4):58. (Journal IF 7.371, Citations: 0).

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Ferro JM, Canhão P, Aguiar de Sousa D. (2016) Cerebral venous thrombosis. Presse Med. 45:e429-e450. (Journal IF 1.015, Citations: 0).

Ferro JM, Viana P, Santos P. (2016) Management of Neurologic Manifestations in Patients with Liver Disease. Curr Treat Options Neurol. 18:37. (Journal IF 1.150, Citations: 0).

Gonçalves MA, Moura O, Castro-Caldas A, Simões MR. Searching for a neurologic injury's Wechsler Adult Intelligence Scale-Third Edition profile. Appl Neuropsychol: adult. 2016, 00:1–8 (Journal IF:0694, Citations: 0).

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JL, Zeppenfeld K. (2016) 2016 ESC Guidelines for the management of atrial fibrillation developed in collaboration with EACTS. Europace. 18:1609-1678. (Journal IF 4.021, Citations: 0).

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Madureira S, Verdelho A, Moleiro C, Santos C, Scheltens P, Gouw A, Ferro J. White Matter Changes and Cognitive Decline in a Ten-Year Follow-Up Period: A Pilot Study on a Single-Center Cohort from the Leukoaraiosis and Disability Study. (2016) Dement Geriatr Cogn Disord. 41:303-313. (Journal IF 3.408, Citations: 0).

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Other Publications International

Ferro JM, Canhão P. Cerebral venous thrombosis. Tsiskaridze A, Lindgren A, Qureshi AI (eds). Treatment-related stroke. Including iatrogenic and in-hospital strokes. Cambridge University Press 2016;241-253.

Other Publications National

Martins IP, Marinho RT (2016). Introdução. Manual da Pedagogia da Faculdade de Medicina de Lisboa. Faculdade Medicina da Universidade de Lisboa.

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Fonseca J, Miranda F, Moura O, Raposo A, Martins IP (2016) Camelos e Catos: Valores normativos preliminares num teste de memória semântica para a população portuguesa. Sinapse vol. 16, nº 2, 5-13.

Ferro JM. 100 Perguntas chave na Neurologia. Acidente vascular cerebral. Permanyer Portugal, 2016. (Coordenador).

Ferro JM. Acidente vascular cerebral hemorrágico: hemorragia intracerebral. 100 Perguntas chave na Neurologia. Acidente vascular cerebral. Permanyer Portugal, 2016.

Ferro JM. Sequelas não motoras do acidente vascular cerebral. 100 Perguntas chave na Neurologia. Acidente vascular cerebral. Permanyer Portugal, 2016.

Fonseca AC. Acidente vascular cerebral criptogénico. 100 Perguntas chave na Neurologia. Acidente vascular cerebral. Permanyer Portugal, 2016.

Fonseca AC. Acidente vascular cerebral: o pré-hospitalar. 100 Perguntas chave na Neurologia. Acidente vascular cerebral. Permanyer Portugal, 2016.

Fonseca AC. Deteção e prevenção do acidente vascular cerebral com fibrilação auricular. 100 Perguntas chave na Neurologia. Acidente vascular cerebral. Permanyer Portugal, 2016.

Invited Lectures and Seminars

Ferro JM. Depressão e ansiedade pós AVC. Co- Morbilidades psiquiátricas e AVC. 10º Congresso Português do AVC. Porto, February 5, 2016.

Fonseca AC. Fibrilação Auricular: A mesma realidade, diferentes perspetivas – da Neurologia. 10º Congresso Português do AVC. Porto, Portugal, February 5, 2016.

Fonseca AC. Hipertensão na hemorragia intracerebral aguda. 10º Congresso Português de Hipertensão e risco cardiovascular global. Vilamoura, Portugal, February 26, 2016.

Ferro JM. Anticoagulants should be used. Carotid dissection: Should anticoagulants be used? CONY – The 10th World Congress on Controversies in Neurology. Lisbon, Portugal, March 17, 2016.

Oliveira V. Egas Moniz and his role in 20th Century Neurology. CONY – The 10th World Congress on Controversies in Neurology. Lisbon, Portugal, March 17, 2016.

Ferro JM. No. Testing for thrombophilia in cryptogenic stroke in the young: Is it useful? CONY – The 10th World Congress on Controversies in Neurology. Lisbon, Portugal, March 18, 2016.

Ferro JM. Secondary prevention after cerebral infarction among young adults. Stroke in the Young, Bergen, Norway, April 7, 2016.

Fonseca C. Associação Demência/Fibrilação auricular: qual a carga arrítmica necessária? Congresso Português de Cardiologia 2016. Vilamoura, Portugal, April 25, 2016.

Fonseca AC. Multimodalidade de Imagem e Válvula aórtica percutânea. Quando envolver a Neurologia: na dúvida RMN-CE para todos os doentes? Congresso Português de Cardiologia 2016. Vilamoura, Portugal, April 26,2016.

Ferro JM. Uma agenda ULisboa para o ageing (FM/HSM, Neurologia). 3ª Conferência Anual. Rede Temática Interdisciplinar Saúde. Lisbon, Portugal, May 3, 2016.

Fonseca AC. Workshops em casos clínicos, Abordagem prática - Acidente Vascular Cerebral. Curso de hipocoagulação, uma abordagem do dia-a-dia. Lisbon, Portugal, May 7, 2016.

Canhão P. Drug induced stroke. 2nd European Stroke Organisation Conference, Barcelona, Spain, May 10, 2016.

Oliveira V. Egas Moniz – Um homem do Séc. XX. Forum de Neurologia. Leiria, Portugal, May 19, 2016.

Ferro JM. Cerebral venous thrombosis diagnostic and therapeutic challenges. Novel approaches to management. ESO Stroke Summer School, Madrid, Spain, July 20, 2016.

Ferro JM. Cerebral sino-venous thrombosis: incremental progress in defining causes and management. Colloque des neurosciences cliniques. Lausanne, Switzerland, September 28, 2016.

Ferro JM. Prévention secondaire. Symposium annuel Centre cérébrovasculaire – CHUV «L'après-stroke: State of the Art». Lausanne, Switzerland, September 29, 2016.

Maruta C. "Eu sei o que é e quem é mas não me lembro do nome: Envelhecimento e Comunicação". Conference Cicle "Conversas da Memória", Campus Neurológico Sénior, Torres Vedras, October 15, 2016.

Martins IP, Lopes da Silva R Perturbações da Linguagem: do Congénito ao Adquirido. III Congresso Internacional, CADIN Aprendizagem, Comportamento, Emoções em Tempos de Mudança. ISCTE-IUL, Lisboa October 20-22, 2016.

Fonseca J. Cognição e afasia no adulto. 1as Jornadas de Terapia da Fala do Centro Hospitalar de Lisboa Central, EPE. October 22, 2016.

Leal G. A Terapia da Fala no Centro Hospitalar de Lisboa Norte. 1as Jornadas de Terapia da Fala do Centro Hospitalar de Lisboa Central, EPE. October 22, 2016.

Ferro JM. Case 2. Carotid Stenosis. Discuss cases with experts: A difficult case of stroke prevention. 10th World Stroke Congress. Hyderabad, India, October 27, 2016.

Ferro JM. Case 4. Venous infarction and issues around discussion of cerebral venous thrombosis. Discuss cases with experts: Acute stroke cases. 10th World Stroke Congress. Hyderabad, India, October 29, 2016.

Ferro JM. Treatment (based on the new ESO Guidelines following grade method). Sinus venous thrombosis in Asia. 10th World Stroke Congress. Hyderabad, India, October 29, 2016.

Maruta C. "O Cérebro e a Memória". "Promoção da Saúde" of the Social Services of Public Administration at Instituto Português do Mar e da Atmosfera, Lisbon, November 9, 2016.

Ferro JM. Diagnostic and therapeutic management of stroke in SSA. 8th Regional Teaching Course (RTC) in Sub-Saharan Africa. Maputo, Moçambique, November 10, 2016.

Fonseca J. VITHEA – plataforma online para tratamento da nomeação oral. III Simpósio de Terapia da Fala. Aula Magna da Faculdade de Medicina de Lisboa. November 18, 2016.

Ferro JM. Stroke in Portugal – Present reality. 7th Lisbon vascular Forum. XX International Meeting. Lisbon, Portugal, December 9, 2016.

Communications in International Conferences

Aguiar de Sousa D, Canhão P, Crassard I, Coutinho JM, Arauz A, Conforto A, Giroud M, Ferro JM and The ISCVT investigators. Safety of pregnancy following cerebral venous thrombosis – ISCVT 2 –PREGNANCY. 2nd European Stroke Organisation Conference, Barcelona, Spain, May 2016 (Oral Presentation).

Aguiar de Sousa D, Neto L, Canhão P, Ferro JM. Recanalization in cerebral venous thrombosis – Systematic review and meta-analysis. 2nd European Stroke Organisation Conference, Barcelona.

Aguiar de Sousa D, Reimão S, Leal G, Almeida J, Pavão Martins I. Limb Apraxia - Neuropsychological and imaging study of two cases. 2nd Congress of the European Academy of Neurology, Copenhagen, Denmark, May 2016. (Poster Presentation)

Amorim I, Silva C, Santos M, Antunes AP, Falcao F, Albuquerque L (2016) Lumbar puncture associated with corticotherapy as a predisposing factor of Cerebral Venous Thrombosis. 2nd Congress of the European Academy of Neurology, Copenhagen, Denmark, May 28 – 31. (Poster Presentation)

Campos C, Magalhaes AD, Peralta R, Antunes AP, Falcao F, Pimentel J, Albuquerque L (2016) Non-convulsive status epilepticus presenting with hiccups. 2nd Congress of the European Academy of Neurology, Copenhagen, Denmark, May 28 – 31. (Poster Presentation)

Coutinho JM, Ferro JM, Zuurbier SM, Canhão P, Crassard I, Majoie CB, Reekers JÁ, Houdart E, De Haan RJ, Bousser MG, Stam J. Thrombolysis or anticoagulant for cerebral venous thrombosis (TO-ACT TRIAL) 2nd European Stroke Organisation Conference, Barcelona, Spain, May 2016. (Poster Presentation)

Ferro JM, Miranda B, Aguiar de Sousa D. Extending oral anticoagulante treatment after acute cerebral vein thrombosis (EXCOA-CVT): A cluster randomised study. 2nd European Stroke Organisation Conference, Barcelona, Spain, May 2016. (Poster Presentation)

Ferro JM. Canhão P, Coutinho J, Stam J, Bousser MG, Aaron S. Prospective registry of decompressive surgery for CVT patients – DECOMPRESS -2. 2nd European Stroke Organisation Conference, Barcelona, Spain, May 2016. (Poster Presentation)

Fonseca AC, Fernandes I, Guimarães T, Canhão P, Almeida AG, Pinho e Melo T. Diagnostic accuracy of atrial natriuretic peptide and n-terminal of the brain natriuretic peptide to diagnose atrial fibrillation in patients with ischemic stroke. 2nd European Stroke Organisation Conference, Barcelona, Spain, May 2016. (Poster Presentation)

Fonseca J, Martins IP, Raposo A (2016) Cognitive assessment of person with aphasia. 30th World Congress of the IALP – International Association of Logopedics and Phoniatrics. Dublin, August 21-25. (Poster Presentation)

Fonseca J. (2016) Cognition is a predictor of recovery of aphasia? International Aphasia Rehabilitation Conference, London, UK, December, 14-16. (Poster Presentation)

Magalhaes AD, Campos C, Simao D, Antunes AP, Falcao F, Albuquerque L, Pimentel, JGDBC (2016) Nonidiopathic hypertrophic pachymeningitis. 2nd Congress of the European Academy of Neurology, Copenhagen, Denmark, May 28 – 31. (Poster Presentation)

Mariana D, Casimiro C, Canhão P. Brain abscess of remote parenchymal hemorrhage following intravenous thrombolysis in acute ischemic stroke. 2nd European Stroke Organisation Conference, Barcelona, Spain, May 2016. (Poster Presentation)

Martins IP, Westerfield M, Lopes M, Maruta C, Gil-da-Costa R (2016) Brain state monitoring for the prediction of migraine attacks. 5th European Headache and Migraine Trust International Congress. Glasgow, Scotland, September, 15-18. (Poster Presentation)

Putaala J Strbian D, Letourneau- Guillon L, Ferro JM, Calabrese L, Frosch MP, Seifer-Held T, Hieraharju A, Geraldes R, Mackey A, Pagnoux C, Sarmiento-Pineda JR, Poppe AY, Singhal AB, Lanthier S. The international study on primary angiitis of the central nervous system (INTERSPACE) – More study sites are needed. 2nd European Stroke Organisation Conference, Barcelona, Spain, May 2016. (Poster Presentation)

Reis Costa M, Alves P, Teodoro T, Antunes P, Albuquerque L (2016) A case of very late onset neuromyelitis optica spectrum disease. 2nd Congress of the European Academy of Neurology, Copenhagen, Denmark, May 28 – 31. (Poster Presentation)

Reis Costa M, Teodoro T, Faria de Abreu LP, Alves P, Albuquerque L, Antunes P (2016) Susac's syndrome – a ultidisciplinary approach. 2nd Congress of the European Academy of Neurology, Copenhagen, Denmark, May 28 – 31. (Poster Presentation)

Salgado P, Moreira I, Albuquerque L, Martins Silva A (2016) Anti-NMDAR encephalitis after herpetic encephalitis in an adult patient. 2nd Congress of the European Academy of Neurology, Copenhagen, Denmark, May 28 – 31. (Poster Presentation)

Santos M, Canhão P. Vascular prognosis of focal and mixed transient neurological attacks. 2nd European Stroke Organisation Conference, Barcelona, Spain, May 2016. (Poster Presentation)

Sousa Nanji L, Ngo TQ, Ferro JM. Subarachnoid haemorrhge and sports – systematic review and meta-analysis. 10th World Stroke Congress. Hyderabad, India, October 2016. (Poster Presentation)

Vargas M, Reis M. Fonseca AC. Repercussions of changes in the neurology emergency work schedules on the admission of stroke mimics. 25th European Stroke Conference. Veneza, Italy, May 2016. (Oral Presentation)

Williams LR, Ali M, VandenBerg K, Godwin J, Elders A, Abel S, Abo M, Becker F, Bowen A, Brandenburg C, Breitenstein C, Copland D, Cranfill T, di Pietro-Bachmann M, Fillingham J, Gandolfi M, Glize B, Godecke E, Hilari K, Hinckley J, Horton S, Howard D, Jaecks P, Jesus LMT, Jungblut M, Kambanaros M, Khedr E, Kukkonen T, Kang EK, Lambon Ralph MA, Laganaro M, Laska A-C, Leeman B, Lima RR, Lorenz A, MacWhinney B, Martins IP, Mattioli F, Mavi I, Meinzer M, Noé Sebastián E, Nilipour R, Palmer R, Patricio B, Price C, Prizl Jakovic T, Rose M, Rosso C, Ruiter M, Shisler Marshall R, Smania N, Snell C, Szaflarski JP, Thomas S, van de Meulen I, van de Sandt-Koenderman M, Visch-Brink E, Worrall L, Wright Harris H, Brady MC. (2016) Establishing an international shared aphasia individual patient dataset for the RELEASE project. International Aphasia Rehabilitation Conference (IARC) University of London. December 14-16. (Poster Presentation)

Zuurbier SM, Coutinho JM, Stam J, Canhão P, Barinagarrementeria F, Bousser MG Ferro JM. Clinical outcome of anticoagulant treatment in head or nek infections associated cerebral venous thrombosis. 2nd European Stroke Organisation Conference, Barcelona, Spain, May 2016. (Poster Presentation)

Communications in National Conferences

Alves P, Maruta C, Albuquerque L, Martins IP. Dissociação cognitivo-imagiológico na encefalite límbica. Fórum de Neurologia. Lisboa, November 26, 2016. (Oral Presentation)

Alves P, Reimão S, Campos C, Maruta C, Rocha L, Graça Sá, Fonseca AC, Martins IP. Perda do sentimento de posse de objetos após Acidente Vascular Cerebral isquémico do hemisfério esquerdo. Fórum de Neurologia. Palace Hotel, Monte Real, Leiria, May 19-21, 2016. (Poster Presentation)

Alves P, Reimão S, Campos C, Maruta C, Rocha L, Sá G, Fonseca AC, IP Martins. Perda do sentimento de posse de objetos após AVC isquémico do hemisfério esquerdo. Fórum de Neurologia. Leiria, Portugal, May 2016. (Poster Presentation)

Amorim IL, Alves P, Dias M, Antunes AP, Falcão F, Albuquerque L Botulismo – a importância do diagnóstico clinico associado ao contexto epidemiológico. Fórum de Neurologia. Palace Hotel, Monte Real, Leiria, May 19-21, 2016. (Poster Presentation)

Amorim IL, Antunes, AP, Nunes GS, Martins IP. Edema cortical reversível na enxaqueca hemiplégica familiar. Fórum de Neurologia. Lisboa, November 26, 2016. (Poster Presentation)

Amorim IL, Fonseca AC, Melo TP. Associação entre doenças inflamatórias intestinais e doenças cerebrovasculares. 10º Congresso Português do AVC. Porto, Portugal, February 2016. (Poster Presentation)

Campos C, Coelho M, Canhão P. Hemicoreia-hemibalismo de instalação súbita submetida a trombólise endovenosa. Fórum de Neurologia. Leiria, Portugal, May 2016. (Poster Presentation)

Campos C, Reimão S, Franco A, Neto L, Belo D, Pimentel J, Canhão P. Enfarte medular associado a tumor fibroso solitário. 10º Congresso Português do AVC. Porto, February 2016. (Oral Presentation)

Dias M, Martins T, Basílio G, Neto L, Caeiro L, Fonseca C, Canhão P, Melo TP, Ferro JM, Verdelho A. Cefaleia associada ao AVC na fase aguda – impacto da terapêutica com rt-PA IV. Congresso de Neurologia 2016. Lisbon, November 2016. (Oral Presentation)

Fonseca J, Raposo A, Martins IP. Avaliação cognitiva não-verbal da pessoa com afasia. 10 Congresso da Sociedade Portuguesa do Acidente Vascular Cerebral. Porto de February 4-6, 2016. (Oral Presentation)

Fonseca J, Raposo A, Martins IP. Cognição não-verbal na afasia vascular crónica. Anfiteatro Almeida Lima, Serviço de Neurologia. Hospital de Santa Maria, Lisboa. September 29, 2016. (Oral Presentation)

Fonseca J, Raposo A, Martins IP. Cognição Não-Verbal na Recuperação da Afasia. Estudo prospetivo e longitudinal. 1º Congresso Internacional da Sociedade Portuguesa de Terapia da Fala. Fábrica de Santo Thyrso, Santo Tirso, Porto May 13-15, 2016. (Oral Presentation)

Fonseca J, Raposo A, Martins IP. Desempenho Cognitivo na recuperação da afasia. Fórum de Neurologia. Palace Hotel, Monte Real, Leiria, May 19-21, 2016. (Oral Presentation)

Fonseca J. Cognição e afasia. Convenção Multidisciplinar da APTF - Perspetivas na Intervenção no Adulto, Associação Portuguesa de Terapeutas da Fala. Fundação Portuguesa das Comunicações, Lisboa, 4-5 de March, 2016. (Oral Presentation)

Franco A, Reimão S, Melo TP. Lesão isquémica dos pedúnculos cerebelosos médios como apresentação de AVC vertebrobasilar. 10º Congresso Português do AVC. Porto, Portugal, February 2016. (Poster Presentation)

Gabriel D, Aguiar de Sousa D, Silva E, Fonseca M, Raimundo M, Correia M. Quadros mimetizadores de AVC isquémico no Serviço de Urgência - análise secundária do "International Stroke Trial". Congresso de Neurologia 2016. Lisbon, November 2016. (Oral Presentation)

Kauppila LA, Melo TP, Magalhães A, Fonseca AC. Trombólise endovenosa por AVC isquémico em doentes com enfarte agudo do miocárdio nos 3 meses precedentes. Fórum de Neurologia. Leiria, Portugal, May 2016. (Oral Presentation)

Miranda B, Delmonte M, Pereira P, Roque R, Pimentel J. Avaliação do índice proliferativo celular nos astrocitomas difusos supratentoriais. Congresso de Neurologia 2016. Lisbon, November 2016. (Oral Presentation)

Miranda F, Fonseca J, & Leal G. Relação entre o nível macro e microlinguístico do discurso. 1ª Jornadas de Terapia da Fala do Centro Hospitalar Lisboa Central EPE. October 22, 2016. (Poster Presentation)

Miranda F, Leal G. Análise Microlinguística da Descrição da Figura 'O Ladrão De Biscoitos'. Convenção Multidisciplinar da APTF - Perspetivas na Intervenção no Adulto, Associação Portuguesa de Terapeutas da Fala. Fundação Portuguesa das Comunicações, Lisboa, March 4-5, 2016. (Oral Presentation)

Parreira S, Viana P, Franco A, Antunes AP, Falcão F, Albuquerque L. Polineuropatia aguada em grávida com Lupus Eritematoso sistémico. Fórum de Neurologia. Lisboa, November 26, 2016. (Poster Presentation)

Parreira S, Viana P, Franco A, Antunes AP, Falcão F, Albuquerque L. Polineuropatia aguada em grávida com Lupus Eritematoso sistémico. Fórum de Neurologia. Lisboa, November 26, 2016. (Poster Presentation)

Pompili A, Moniz H, Abad A, Batista F, Trancoso I Speech and language technologies for active ageing" - "Unidade de Acompanhamento" INESC-ID September, 2016. (Oral Presentation)

Trancoso I, Abad A, Coheur L, Pompili A, Amorim C, Mendonça V. Virtual Therapists. April, 2016. (Poster Presentation)

Vargas M, Reis M. Fonseca AC. Análises dos Falsos AVCs admitidos na Unidade de AVC do Hospital Santa Maria entre 2007 e 2013. 10º Congresso Português do AVC. Porto, Portugal, February 2016. (Oral Presentation)

Vargas M, Reis M. Fonseca AC. Efeitos de alterações na escala de urgência de neurologia no internamento de falsos AVCs. 10º Congresso Português do AVC. Porto, Portugal, February 2016. (Oral Presentation)

Organisation of Conferences

Aguiar de Sousa D. Organizing Committee "ESO ESMINT EAN SAFE survey on Stroke care in Europe". Nice, France, September 2016.

Canhão P. Member organizing committee- 10º Congresso Português do AVC. Porto, Portugal, February 2016.

Canhão P. Member Scientific Committee- 10º Congresso Português do AVC. Porto, Portugal, February 2016.

Ferro JM. President Scientific Committee – 10º Congresso Português do AVC. Porto, Portugal, February 2016.

Martins IP, Leal G, Farrajota L, Fonseca J, Organizers. I Curso de Actualização em Avaliação da Afasia com a BAAL. Laboratório de Estudos de Linguagem, Edifício Egas Moniz, Faculdade de Medicina da Universidade de Lisboa, November/15-January-December16.

Oliveira V. Chairperson - CONY – The 10th World Congress on Controversies in Neurology. Lisbon, Portugal, March 2016.

Oliveira V. Member organizing committee. Congresso de Neurologia 2016. Lisbon, November 2016.

Oliveira V. Member organizing committee. Fórum de Neurologia 2016. Leiria, Portugal, May 2016.

Internationalisation

Ana Catarina Fonseca - Member of the Young stroke physicians committee da European Stroke Organization.

José M. Ferro - Member of the Scientific Panel for Health do Directorate- General for Research and Innovation (Directorate E – Health) EU- Horizon 2020.

Prizes, Honours and Awards

Young Investigator Award – European Stroke Organization 2016 to Aguiar de Sousa.

“EAN Research Experience Fellowship 2016”, para concretização do projecto "New directions in acute stroke management: improving workflows and ultrasound applications”, orientado pelo Prof. Dr. Marcel Arnold e Prof. Dr. Simon Jung, a decorrer no “Inselspital - University Clinic for Neurology”, Bern, Switzerland to Aguiar de Sousa D.

Menção Honrosa – Prémios Científicos Universidade de Lisboa/Caixa Geral de Depósitos 2016 to Ferro JM.

Menção Honrosa - Comunicação Oral - Fonseca J, Raposo A, Martins IP. (2016) Avaliação cognitiva não-verbal da pessoa com afasia. 10 Congresso da Sociedade Portuguesa do Acidente Vascular Cerebral. Porto 4 a 6 de Fevereiro de 2016.

Prémio de Melhor Comunicação Livre - Fonseca J, Raposo A, Martins IP (2016) Cognição Não-Verbal na Recuperação da Afasia. Estudo prospectivo e longitudinal. 1º Congresso Internacional da Sociedade Portuguesa de Terapia da Fala. Fábrica de Santo Thyrso, 13-15 Maio, Santo Tirso, Porto.

Prémio de Mérito Cientifico – Laboratório de Estudos de Linguagem. Faculdade de Medicina de Lisboa. 1º Congresso Internacional da Sociedade Portuguesa de Terapia da Fala. Fábrica de Santo Thyrso, 13-15 Maio, Santo Tirso, Porto.

Prémio de melhor poster do congresso - Alves P, Reimão S, Campos C, Maruta C, Rocha L, Graça Sá, Fonseca AC, Martins IP. (2016) Perda do sentimento de posse de objectos após Acidente Vascular Cerebral isquémico do hemisfério esquerdo. Forum de Neurologia. Palace Hotel, Monte Real, Leiria, 19-21 Maio. (Poster Presentation).

1º Premio Tecnifar Investigação em Cefaleias 2016 – Gil-Gouveia R, Oliveira AG, Martins IP (2016) Subjective cognitive symptoms during the migraine – A prospective study of a clinic based sample. Reunião de Outono da Sociedade Portuguesa de Cefaleias 2016.

Industry Contract Research

APOLLO trial: randomized, double-blind, placebo-controlled study to evaluate the efficacy and safety of Patisiran in ATTR patients with Familial Amyloidotic Polyneuropathy, Unblinded Intensivist, Diana Aguiar de Sousa – Investigator.

EXPAND: "Exploring the Efficacy and Safety of Siponimod in Patients with Secondary Progressive Multiple Sclerosis", Diana Aguiar de Sousa – Investigator.

ORATORIO: "Study to evaluate the efficacy and safety of ocrelizumab in adults with Primary Progressive MS", Diana Aguiar de Sousa – Investigator.

2014-2017: A multicenter, multinational, randomized, double-blind, placebo controlled, parallel group study to evaluate the efficacy and safety of Laquinimod (0.5, 1.0 and 1.5 mg/Day) as treatment in patients with Huntington's disease" Ferreira J, Guedes L, Freitas V, Maruta C, (Teva TV5600-CNS-20007 LEGATO-HD, 2015).

2014-2016: A multicenter, double-blind, parallel-group, randomized controlled study to investigate efficacy, safety and tolerability of orally administered BI 409306 once or twice daily during a 12-week treatment period compared to placebo in patients with prodromal Alzheimer's disease. Freitas V, Maruta C, in colaboration with Grupo de demências (Boeringer-Ingelheim BI 1289.5, 2015).

2014-2016: A Phase III, randomized, double-blind, placebo-controlled, parallel-group, multicenter efficacy and safety study of Gantenerumab in patients with Mild Alzheimer's disease. Freitas V, Maruta C, in colaboration with Grupo de demênicas (Roche WN28745 Marguerite RoAD Study, 2014).

2014-2016: Randomized, placebo controlled, parallel-group, double blind efficacy and safety trial of MK-8931 in subjects with Mild to Moderate Alzheimer's disease. Freitas V, Maruta C, in colaboration with Grupo de demênicas, (Merck Sharp & Dohme, Protocol No. MK – 8931 – 017 – 07, also known as SCH 900931, P07738, 2014).

2015-2017: A Phase 3 randomized, double-blind, placebo-controlled study to evaluate the efficacy and safety of AMG 334 in migraine prevention" Martins IP, Maruta C. (Amgen AMG334 STRIVE, 2015).

2015-2017: A Phase 3 multicenter, randomized, double-blind, placebo-controlled, parallel-group study to evaluate the efficacy and safety of Aducanumab (BIIB037) in subjects with early Alzheimer's disease. Maruta C, in colaboration with Grupo de demênicas (Biogen Idec BIIB037-221AD301 ENGAGE & 221AD302 EMERGE, 2015).

2015-2017: A randomized, placebo controlled phase 2b/3 study of ABT-414 with concurrent chemoradiation and adjuvant Temozolomide in subjects with newly diagnosed glioblastoma (GBM) with epidermal growth factor receptor (ECFR) amplification. Albuquerque L, Maruta C. (AbbVie M13-813 Intellance 1; 2016).

Advanced Teaching

Canhão P. Coordinator Module VII- Causation Studies. CAML Advanced Course on Introduction to clinical research: a pratical course. 2016.

Canhão P. GAPIC - Cursos de Verão - Curso Preparação de Casos Clínicos para Publicação, 2016.

Canhão P. How to design prognostic studies. Module VII - Prognostic studies- CAML Advanced Course- Introduction to Clinical Research: a pratical course. Lisbon, March 18, 2016.

Canhão P. How to design prognostic studies. Module VII - Prognostic studies- CAML Advanced Course- Introduction to Clinical Research: a pratical course. Lisbon, March 18, 2016.

Canhão P. Impact of prognostic models in clinical practice. Module VII - Prognostic studies- CAML Advanced Course- Introduction to Clinical Research: a pratical course. Lisbon, March 19, 2016.

Canhão P. Pratical exercises with SPSS software. Module VII - Prognostic studies- CAML Advanced Course- Introduction to Clinical Research: a pratical course. Lisbon, March 19, 2016.

Canhão P. Pratical exercises. Module VII - Prognostic studies- CAML Advanced Course- Introduction to Clinical Research: a pratical course. Lisbon, March 18, 2016.

Ferro JM. Consciência e conceito de pessoa: problemas éticos do estado vegetativo persistente. Decisões éticas em fim de vida. VII Curso Pós-Graduado de atualização. Lisbon, March 10, 2016.

Ferro JM. Coordinator Module IV- Causation Studies. CAML Advanced Course on Introduction to clinical research: a pratical course. 2016.

Ferro JM. Coordinator. Advanced Course on Introduction to clinical research: a pratical course. 2016.

Ferro JM. Introduction. Module IV-Causation studies. CAML Advanced Course on Introduction to clinical research: a pratical course. Lisbon, January 8, 2016.

Ferro JM. Pratical examples and case studies. Module IV- Causation studies. CAML Advanced Course on Introduction to clinical research: a pratical course. January 9, 2016.

Fonseca AC. Multivariate analysis. Módulo IV- Causation studies. CAML Advanced Course- Introduction to Clinical Research: a pratical course. Lisbon, January 8, 2016.

Fonseca AC. Testes de diagnóstico. Mestrado de Neurociências da Faculdade de Medicina de Lisboa. Lisbon, April 28, 2016.

Fonseca AC. Validation of prognostic models. Module VII - Prognostic studies- CAML Advanced Course- Introduction to Clinical Research: a pratical course. Lisbon, March 19, 2016.

Martins IP Princípios gerais de tratamento. Curso Avançado de Cefaleias (módulo 1 - Enxaqueca). Sociedade Portuguesa de Cefaleias. Porto, December 2-3. 2016.

Martins IP. Como...escrever um resumo científico (abstract). Curso de Investigação Clínica – Programa Doutoral do CAML 2016 / 2017, Programa do módulo 1. Lisbon, November 8, 2016.

Martins IP. Language organization and breakdown following brain lesions. Master in Neurosciences, Faculdade de Medicina da Universidade de Lisboa, Lisboa, Edifício Egas Moniz, April 7, 2016.

Martins IP. Linguagem. Curso de Neurologia Do Comportamento, Secção de Neurologia do Comportamento. Fórum de Neurologia. Leiria, May 20, 2016.

Maruta C. Executive functions and its disorders. Master in Neurosciences, Faculdade de Medicina da Universidade de Lisboa, Lisboa, Edifício Egas Moniz, April 24, 2016.

Maruta C. Funções executivas. Curso de Neurologia Do Comportamento, Secção de Neurologia do Comportamento. Fórum de Neurologia. Leiria, May 20, 2016.

Oliveira V. Morte: definições e indefinições. Decisões éticas em fim de vida. VII Curso Pós-Graduado de atualização. Lisbon, March 10, 2016.

Oliveira V. Princípios físicos e técnicos gerais. Noções teóricas básicas em neurossonologia. Curso de introdução ao estágio de neurossonologia. Lisbon, November 23, 2016.

Science and Society

Canhão P (2016) Manter o cérebro saudável no envelhecimento. Artigo de opinião. Público, July 22.

Canhão P (2016) O que fazer para manter o cérebro saudável. Artigo. Revista Prevenir. November.

Canhão P. (2016) Organização do dia Nacional do AVC. Divulgação dos sinais de alerta de AVC; divulgação dos fatores de risco vascular; aconselhamento personalizado de hábitos alimentares à população. Lisbon, March 31.

Fonseca AC - Colaboração no site oficial da "European Academy of Neurology" (EAN pages), como representante da "Resident and Research Fellow Section (RRFS)", tendo sido responsável por duas publicações a propósito do "2nd Congress of the European Academy of Neurology".

Fonseca AC - "MOSTREM - Jornadas de Internato Médico 2016", como representante da Especialidade de Neurologia pelo Conselho Nacional do Médico Interno. Secção Regional do Sul da Ordem dos Médicos, May 2- 4.

MSc Thesis Completed

Mariana Vargas 29/04/2016 Análise dos Falsos AVCs admitidos na Unidade de AVC do Hospital de Santa Maria entre 2007 e 2013 Faculdade de Medicina da Universidade de Lisboa Ana Catarina Fonseca.

Mónica Santos 05/07/2016 Vascular prognosis of focal and mixed transiente neurological attacks Faculdade de Medicina da Universidade de Lisboa. Patrícia Canhão.

Jorge Ferreira 05/07/2016 Interim result analysis of the ongoing registry on Decompressive Surgery in Cerebrovenous Thrombosis – Part 2 (DECOMPRESS – 2) Multicentric International Prospective Cohort Study. Faculdade de Medicina da Universidade de Lisboa José M. Ferro.

Ana Gorgulho 05/07/2016 Cardiac alterations in perimesencephalic subarachnoid hemorrhage Faculdade de Medicina da Universidade de Lisboa. José M. Ferro.

Teresa Martins 05/07/2016 Cefaleia após acidente vascular cerebral isquémico. Estudo prospetivo por um período de 6 meses. Faculdade de Medicina da Universidade de Lisboa Ana Verdelho.

Filipe Godinho 05/07/2016 Influência da Escolaridade na Avaliação Neuropsicológica do Defeito Cognitivo Ligeiro. Faculdade de Medicina da Universidade Lisboa Isabel Pavão Martins.

Miguel Esperança Martins 05/07/2016 Avaliação neurocognitiva de doente submetida a DBSANT para tratamento de epilepsia refractária: contributo do núcleo anterior do tálamo na cognição. Faculdade de Medicina da Universidade Lisboa. Isabel Pavão Martins.

Figueiredo, Luísa

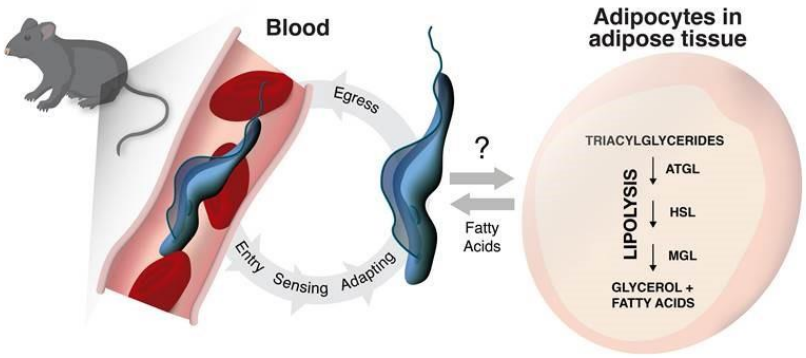
Major Interests / Objectives

Sleeping sickness is a neglected tropical disease caused by Trypanosoma brucei, a unicellular protozoa parasite. Parasites exploit their host to increase their reproductive success and to enhance their transmission efficiency. Efficient parasitism depends on the cross-talk between parasite, host and environment. In T. brucei, such mechanisms include antigenic variation, circadian rhythms and parasite tissue tropism. In our group, we use genetic, biochemical and molecular approaches to study these interactions with the prospect to uncover fundamental exploitable differences that can lead to new diagnostic and therapeutic tools.

Head of Laboratory

Luisa Miranda Figueiredo, PhD.

Graphic Abstract



Research Team

Ana Catarina Dias Pena	Master	Post-Doctoral Investigator
Ana Filipa de Almeida Rijo Ferreira	Master	Post-Doctoral Investigator
Ana Margarida Roque Sanches Vaz	Master	LisbonBioMed PhD Student
Adriana Calaça Serrão	Undergraduate	Undergraduate Student (IST)
Daniel Pinto de Oliveira Gonçalves Neves	Bachelor	MSc Student
Fabien Marc Guegan	PhD	Post-Doctoral Investigator
Fábio Pereira Bento	Master	Research Fellow
Francisco Maria dos Santos e Silva Aresta Branco	Master	PhD Student
Helena Isabel Gomes Pires Manso	PhD	Post-Doctoral Investigator
Idálio de Jesus Contreiras Viegas	Master	LisbonBioMed PhD Student
João Miguel Barbosa Nina	Bachelor	MSc Student
Leonor Duarte Pinho	Master	Lab Manager
Sandra Isabel Gonçalves Trindade	PhD	Post-Doctoral Investigator

Sílvia Maria de Jesus Pimenta Teixeira da Silva	Undergraduate	GAPIC MD Student
Tiago Bizarra Rebelo	Bachelor	MSc Student

Glycobiology Group

Eleonora Aquilini	PhD	Post-Doctoral Investigator
Jessica Grace Morgan Bevan	Master	PhD Student
João Alexandre Guarita da Silva Rodrigues	PhD	Senior Staff Scientist & ITN Coordinator
Miguel Correia Botelho Chaves Ferreira	PhD	GlycoPar ITN Project Manager
Tiago António Casaca da Rocha Vaz	Master	PhD Student

Laboratory Keywords / Research Areas

Antigenic Variation, Parasite, Gene Expression, Glycobiology, Metabolism, Circadian Rhythm.

Major Scientific Achievements

- Graduation of two PhD students with highest possible ranking (Filipa Rijo Ferreira and Francisco Aresta Branco).

- Vice-chair at Gordon Conference on the Biology of Host-Parasite interactions, Salve Regina, RI, USA.

- Scientific coordinator of Histopathology unit.

- Invitation to present work in four major European institutions (Institut Pasteur, The University of Edinburgh, University of Glasgow, University of Bern).

Selected Publications

Trindade S & Rijo-Ferreira F, Carvalho T, Pinto-Neves D, Guegan F, Aresta-Branco F, Bento F, Young SA, Pinto A, van Den Abbeele J, Ribeiro RM, Dias S, Smith TK, Figueiredo LM (2016) Trypanosoma brucei parasites occupy and functionally adapt to the adipose tissue in mice. Cell Host and Microbe 19 (6), 837–848. (Journal IF: 12.552, Citations: 16) Research Highlight in Nat Rev Microbiol 2016 doi:10.1038/nrmicro.2016.86; Preview in Cell Host & Microbe. 2016 (in press); Highlight in HHMI news. May. 2016; Recommended by Faculty of 1000. Ranking: exceptional (http://f1000.com/prime/726388249).

Tanowitz HB, Scherer PE, Mota MM and Figueiredo LM (2016) “Adipose tissue: A safe haven for parasites?”. Trends Parasitol in Press, Corrected Proof, doi: http://dx.doi.org/10.1016/j.pt.2016.11.008. (Journal IF: 7.295, Citations: 0).

Cicova Z, Dejung M, Skalicky T, Eisenhuth N, Hanselmann S, Morriswood B, Figueiredo LM, Butter F, Janzen CJ (2016) Two flagellar BAR domain proteins in Trypanosoma brucei with stage-specific regulation. Sci Rep in Press, Corrected Proof, 6, 35826. doi: http://dx.doi.org/10.1016/j.pt.2016.11.008. (Journal IF: 5.228, Citations: 0).

Aresta-Branco F, Pimenta S, Figueiredo LM (2015) A transcription-independent epigenetic mechanism is associated with antigenic switching in Trypanosoma brucei. Nucl Acids Res 44(7), 3131-46. doi:10.1093/nar/gkv1459. (Journal IF: 9.202, Citations: 4) Recommended by Faculty of 1000. Ranking: exceptional (http://f1000.com/prime/726019294).

Pena AC, Pimentel MR, Manso H, Vaz-Drago R, Pinto-Neves D, Aresta-Branco F, Rijo-Ferreira F, Guegan F, Pedro Coelho L, Carmo-Fonseca M, Barbosa-Morais NL, Figueiredo LM (2014) Trypanosoma brucei histone H1 inhibits RNA polymerase I transcription and is important for parasite fitness in vivo. Molecular Microbiology 93(4), 645-6. (Journal IF: 3.761, Citations: 11).

Ongoing Research Projects

2011/2016: The role of chromatin in antigenic variation of African Trypanosomes. Coordinator: Luisa Miranda Figueiredo. Agency: EMBO. Reference: Embo Instalation Grant LF. Amount: 250000.00. Amount (total): 250000.00.

2012/2017: How parasites use epigenetics to evade host defenses. Coordinator: Luisa Miranda Figueiredo. Agency: Howard Hughes Medical Insti. Reference: Howard Hughes Medical Institute. Amount: 467289.34. Amount (total): 560000.00.

2014/2016: Embo Small Grant. Coordinator: Luisa Miranda Figueiredo. Agency: EMBO. Reference: YIP - Small Grant. Amount: 8000.00. Amount (total): 8000.00.

2015/2019: Projecto de Investigação Exploratória. Coordinator: Luisa Miranda Figueiredo. Agency: Fundação para a Ciência e a Tecnologia, IP. Coordinator Institution: 0. Reference: Projecto de Investigação Exploratória. Amount: 46000.00. Amount (total): 50000.00.

2013/2017: Parasite glycobiology and anti-parasitic strategies. Coordinator: João Alexandre Guarita da Silva Rodrigues. Agency: Comissão Europeia. Reference: ITN-608295 - Glycopar. Amount: 666969.80. Amount (total): 3450856.23.

2016/2019: Metabolic consequences of an infection by African trypanosomes. Coordinator: Luisa Miranda Figueiredo. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/BIM-MET/4471/2014. Amount: 186946.00. Amount (total): 0.00.

2016/2019: An integrated systems approach to uncover the key players in complex protein N-glycosylation in Trypanosoma brucei. Coordinator: João Alexandre Guarita da Silva Rodrigues. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/BBB-BSS/0827/2014. Amount: 94106.00. Amount (total): 149450.00.

2016/2018: Long non¬coding RNAs as new diagnostic biomarkers for African sleeping sickness. Coordinator: Luisa Miranda Figueiredo. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/DTP-EPI/7099/2014. Amount: 165079.00. Amount (total): 165079.00.

Other Projects

2016/2017: Small Grant EMBO. Coordinator: Luisa Miranda Figueiredo.

2016/2018: Participation in project TWINNING (H2020) "Unleash iMM's research excellence in immunity and infection through twinning to infect Lisbon and Portugal with its increase in competitiveness and innovation" – TwinToInfect, financed by the European Commission. Coordinator: Maria M. Mota.

Publications in Peer Review Journals

Trindade S & Rijo-Ferreira F, Carvalho T, Pinto-Neves D, Guegan F, Aresta-Branco F, Bento F, Young SA, Pinto A, van Den Abbeele J, Ribeiro RM, Dias S, Smith TK, Figueiredo LM (2016) Trypanosoma brucei parasites occupy and functionally adapt to the adipose tissue in mice. Cell Host and Microbe 19 (6), 837–848. (Journal IF: 12.552, Citations: 16) Research Highlight in Nat Rev Microbiol 2016 doi:10.1038/nrmicro.2016.86; Preview in Cell Host & Microbe. 2016 (in press); Highlight in HHMI news. May. 2016; Recommended by Faculty of 1000. Ranking: exceptional (http://f1000.com/prime/726388249).

Tanowitz HB, Scherer PE, Mota MM and Figueiredo LM (2016) "Adipose tissue: A safe haven for parasites?" Trends Parasitol. In Press, Corrected Proof, doi: http://dx.doi.org/10.1016/j.pt.2016.11.008 (Journal IF: 7.295, Citations: 0).

Other Publications International

Tanowitz HB, Scherer PE, Mota MM and Figueiredo LM (2016) "Adipose tissue: A safe haven for parasites?" Trends Parasitol. In Press, Corrected Proof, doi: http://dx.doi.org/10.1016/j.pt.2016.11.008 (Journal IF: 7.295, Citations: 0).

Cicova Z, Dejung M, Skalicky T, Eisenhuth N, Hanselmann S, Morriswood B, Figueiredo LM, Butter F, Janzen CJ (2016) Two flagellar BAR domain proteins in Trypanosoma brucei with stage-specific regulation. Sci Rep., 6:35826 (Journal IF: 5.228, Citations: 0).

Pena AC, Aresta-Branco F and Figueiredo LM (2016) "Epigenetic regulation in T. brucei: changing coats is a chance to survive" in Epigenetics and Infectious Diseases eds Walter Doerfler, Petra Böhm, Mario Noyer-Weidner, Josep Casadesús (Springer, Berlin Heidelberg).

Invited Lectures and Seminars

Luisa M Figueiredo. "Parasites in blood and adipose tissue are phenotypically different". 1st Expert Meeting on T.B. gambiense Human Trypanotolerance and Animal Reservoir, Îles des Embiez, Marseille, France, September 2016.

João Rodrigues. Host-Parasite Interactions: a Mass Spectrometrist's Perspective. 40th Meeting of the London Biological Mass Spectrometry Interest Group, Imperial College, London, United Kingdom, September 2016.

João Rodrigues. Parasite Glycobiology: insights from functional glycomics. Liverpool School of Tropical Medicine, University of Liverpool, UK, September 2016.

Luisa M Figueiredo. Trypanosoma brucei: A New Life Beyond the Bloodstream. Gordon Research Conference on the Biology of Host-Parasite Interactions, Newport, RI, USA, June 2016 Luisa M Figueiredo. African Trypanosomes: a new life beyond the bloodstream. IV Trypanosomatid parasites: From the Field to the Lab, Institut Pasteur, Paris, France, May 2016.

Luisa M Figueiredo. African Trypanosomes: a new life beyond the bloodstream. Infection External Seminars at Institute of Infection, Immunity and Inflammation, University of Glasgow, Glasgow, United Kingdom, April 2016.

Luisa M Figueiredo. African Trypanosomes: a new life beyond the bloodstream. Institute of Immunology and Infection Research Seminar Series, University of Edinburgh, Edinburgh, United Kingdom, April 2016.

Luisa M Figueiredo. Seminar Trypanosomes at Institute of Cell Biology. African Trypanosomes: a new life beyond the bloodstream. University of Bern, Bern, Switzerland, April 2016.

Luisa M Figueiredo. African Trypanosomes: a new life beyond the bloodstream. CEDOC - Chronic Diseases Research Center, Faculdade de Ciências Médicas, Universidade Nova de Lisboa, Lisboa, Portugal, March 2016.

Luisa M Figueiredo and Bárbara Pacheco. Bio-informatics: a key to discover new biology in disease. II Semana de Bioengenharia, Instituto Superior Técnico, Lisboa, Portugal, March 2016.

Luisa M Figueiredo. Trypanosome parasites: a new life beyond the bloodstream. Instituto Gulbenkian de Ciência, Oeiras, Portugal, January 2016.

Communications in International Conferences

Trindade S & Rijo-Ferreira F, Carvalho T, Pinto-Neves D, Guegan F, Aresta-Branco F, Bento F, Young SA, Pinto A, van Den Abbeele J, Ribeiro RM, Dias S, Smith TK, Figueiredo LM. Adipose Tissue is a Major Reservoir of Functionally Distinct Trypanosoma brucei parasites, 65th Annual Meeting of the American Society for Tropical Medicine & Hygiene, Atlanta, GA, USA, November 2016. (Oral Presentation)

Aquilini E, Ghorbal M, Lopez-Rubio J, Izquierdo L, Rodrigues JA. Plasmodium short N-glycans are critical for parasite survival and development, 2nd International ParaFrap conference: “From basic research to intervention strategies against parasites” Les Embiez – France, October 2016. (Poster Presentation)

Trindade S & Rijo-Ferreira F, Carvalho T, Pinto-Neves D, Guegan F, Aresta-Branco F, Bento F, Young SA, Pinto A, van Den Abbeele J, Ribeiro RM, Dias S, Smith TK, Figueiredo LM. Adipose Tissue is a Major Reservoir of Functionally Distinct Trypanosoma brucei parasites, 27th Molecular Parasitology Meeting. Woods Hole, MA, USA, September 2016. (Oral Presentation)

Bevan J, Lourenço E, Rodrigues JA, Ventura R. Chemical Probes to uncover novel glycosyltransferases in Trypanosoma brucei, BOSS XV – 15th Belgian Organic Synthesis Symposium, Antwerp, Belgium, July, 2016. (Poster Presentation)

Rijo-Ferreira F, Vaz MS, Takahashi JS, Figueiredo LM. Trypanosoma brucei accelerates the mouse circadian clock, Society for Research on Biological Rhythms, Palm Harbor, Florida, USA, May 2016. (Oral Presentation)

Viegas I, Rodrigues JA, Nina J, Aresta-Branco F, Figueiredo LM. RNA modifications in a parasite, The EMBL Conference: The Epitranscriptome, Heidelberg, Germany, April 2016. (Poster Presentation)

Organisation of Conferences

Figueiredo L. Vice-chair at Gordon Conference on the Biology of Host-Parasite interactions, Salve Regina, RI, USA, June 2016.

Internationalisation

Our research group acts internationally at several levels. First, by presenting our work and acting as discussion group in international meetings including Molecular Parasitology meeting and Gordon Research Conference on the Biology of Host-Parasite Interactions. Second by establishing and maintaining collaborations (Joseph Takahashi, University of Texas Southwestern Medical Center, USA; Terry Smith, University of St Andrews, Scotland; Cedric Notredame, Center for Genomic Regulation, Spain). Third by acting as editor in international journals including PLoS Genetics and Frontiers in Microbiology, as invited reviewer for Nucleic Acids Research, Journal of Cell Science, PLoS Neglected Tropical Diseases, Molecular Microbiology, Cellular Microbiology, Eukaryotic Cell, Molecular and Biochemical Parasitology and Briefings in Functional Genomics. Fourth, being main examiner in a PhD juri in Institut Pasteur and as an examiner in a juri of “Habilitation à diriger des recherches (HDR)”, France. Fifth, by participating in a collaborative grant to the Wellcome Trust Fund.

Through the FP7 GlycoPar ITN we currently collaborate with Mike Ferguson (Univ. Dundee), Markus Aebi (ETH Zurich), Luis Izquierdo (ISGlobal, Barcelona), Alvaro Acosta-Serrano (Liverpool School of Tropical Medicine), Rita Gerardy-Schwan (Hannover) and three SMEs, SilicoLife (Braga,

PT), Ludger (Abingdon, UK) and SOMBiotech (Barcelona) and have access to GlaxoSmithKline Tres Cantos site (Madrid) devoted to neglected tropical diseases.

Prizes, Honours and Awards

Best full length talk awarded by American Committee of Molecular, Cellular and Immunoparasitology from ASTMH. September 2016 to Sandra Trindade.

Advanced Teaching

Figueiredo, L. as main examiner in PhD juri of:

Shuai Ding. Characterization of P. falciparum histone methyltransferases: biological role and possible targets for new intervention strategies. Université Pierre et Marie Curie, École doctorale Complexité du Vivant, Paris, France, 15 December 2016

Supervisor: Artur Scherf

Sima Drimi. Characterization of HRP4: An unusual Leishmania major HSP70-related protein. Université Paris Diderot – Paris 7, École Doctorale Bio Sorbonne Paris Cite, Paris, France, 30 September 2016.

Supervisor: Gerald Spath

Rodrigues, J. participation in External Thesis Committees:

Luis Carvalho, Doctoral Progamme in Pharmacy, Faculdade de Farmácia da Universidade de Lisboa, April 2016.

Supervisor: Rui Moreira

Sushil Kumarsha, Doctoral Program in Chemical and Biological Engineering University of Minho, Braga, March 2016. Supervisor: Sónia Carneiro e Isabel Rocha.

Rodrigues, J. as main examiner in MSc Thesis:

Maria Inês Marreiros, Mestrado em Biologia Molecular e Genética, Faculdade de Ciências da Universidade de Lisboa, 27 October 2016.

Supervisor: Maria Mota

Science and Society

Aquilini E, Vaz T and Rodrigues J (2106) “Marie Curie European Researcher’s night”, Lisboa, Portugal.

PhD Thesis Completed

Francisco Aresta-Branco 06/12/2016 Understanding chromatin dynamics during antigenic variation in Trypanosoma brucei FMUL, iMM, Luisa Figueiredo.

Filipa Rijo-Ferreira 20/07/2016 Circadian rhythms in a Trypanosoma brucei infection: host, parasite or both? ICBAS-Universidade do Porto Luisa Figueiredo Joseph Takahashi.

MSc Thesis Completed

João Nina 23/11/2016 Understanding the role of parasites epitranscriptome FCUL Luisa Figueiredo.

Daniel Neves 21/10/2016 Post-transcriptional circadian gene expression regulation in Trypanosoma brucei FCUL Luisa Figueiredo.

Filipe, Paulo

Major Interests / Objectives

We devote our efforts to the search of clinically useful markers and drug targets in common skin diseases afflicting humans such as psoriasis and superficial mycosis. Psoriasis is a common (~2% in western populations), chronic immune-mediated inflammatory disease associated with lowered quality of life and relevant co-morbidities, namely an increased risk of cardiovascular disease and mortality. We aim at elucidating the earliest molecular signatures in the skin of psoriatic patients for a better selection of biologic therapeutic agents and prevention of relapse. We are particularly interested in elucidating the role of cells such as keratinocytes, neutrophils, cross-talk between Th9 and Th17 cells in the initiation and maintenance of the inflammatory process associated with psoriasis.

Head of Laboratory

Paulo Manuel Leal Filipe, MD/PhD, Assistant Professor.

Research Team

Ana Isabel da Costa Martins Teixeira	Master	Investigator
João António Augusto Ferreira	MD/PhD	Investigator
João Borges da Costa	PhD	Investigator, Assistant Professor
João Nuno Maia Rodrigues Silva	MD/PhD	Investigator, Assistant Professor
Luís Miguel dos Santos Reis Soares de Almeida	PhD	Principal Investigator
Maria Clara Gomes da Fonseca Pedro Bicho	MD/PhD	Investigator
Pedro Henrique Dobrões da Fonseca	Master	Trainee (Started December)

Laboratory Keywords / Research Areas

Human Th9 and Tc9 cells, Psoriasis, Phototoxicity, Psoriasis, Pityriasis versicolor.

Major Scientific Achievements

We devote our efforts to the search of clinically useful markers and drug targets in common skin diseases afflicting humans such as psoriasis. After healing, psoriasis tends to recur within previously affected skin areas invoking some sort of tissue immunological memory. Manipulation of this immunological memory may contribute to a better long-term management of human psoriasis. We aim at characterizing the cellular components of this memory compartment in clinical samples from psoriatic patients, its response to psoriasis treatments

(namely phototherapy), as well as the population of target keratinocytes that proliferate in response to memory lymphocytes. We are also using proteomics analyses of serum proteins to identify early markers of disease recurrence.

Selected Publications

Teixeira A, Morlière P, Ferreira J, Conte MA, Galmiche A, Mazière JC, Santus R, Filipe P. Toxicol Sci. pii: kfw159, 2016. PMID: 2756644 IF: 3.880; Citations: 1 (2016) Interplay Between Membrane Lipid Peroxidation and Photoproduct Formation in the Ultraviolet A-Induced Phototoxicity of Vemurafenib in Skin Keratinocytes. Toxicol Sci. pii: kfw159, 2016. PMID: 2756644 IF: 3.880; Citations: 1, 154, 289-295. (Journal IF: 3.880, Citations: 1).

Morlière P, Hug GL, Patterson LK, Mazière JC, Ausseil J, Dupas JL, Ducroix JP, Santus R, Filipe P. Biochim Biophys Acta. 2014 Oct; 1840 (10): 3190-7. doi: 10.1016/j.bbagen.2014.07.002. Epub 2014 Jul 10. (2014) Chemistry of free radicals produced by oxidation of endogenous? -aminoketones. A study of 5 aminolevulinic acid and aminoacetone by fast kinetics spectroscopy. Biochim Biophys Acta. 2014 Oct; 1840 (10): 3190-7. doi: 10.1016/j.bbagen.2014.07.002. Epub 2014 Jul 10. 1840, 3190-7. (Journal IF: 5.083, Citations: 1).

Pinheiro T, Silva R, Fleming R, Gonçalves A, Barreiros MA, Silva JN, Morlière P, Santus R, Filipe P. Acta Derm Venereol. 2014 Jan; 94 (1): 14-9. doi: 10.2340/00015555-1601. (2014) Distribution and quantitation of skin iron in primary haemochromatosis: correlation with total body iron stores in patients undergoing phlebotomy. Acta Derm Venereol. 2014 Jan; 94 (1): 14-9. doi: 10.2340/00015555-1601, 94, 14-9. (Journal IF: 4.244, Citations: 3).

Figueiredo N, Chora A, Raquel H, Pejanovic N, Pereira P, Hartleben B, Neves-Costa A, Moita C, Pedroso D, Pinto A, Marques S, Faridi H, Costa P, Gozzelino R, Zhao JL, Soares MP, Gama Carvalho M, Martinez J, Zhang Q, Döring G, Grompe M, Simas JP, Huber TB, Baltimore D, Gupta G, Green DR, Ferreira J, Moita LF. Immunity 2013; 39: 874-84. PMID: 24184056 (2013) Anthracyclines induce DNA damage response-mediated protection against severe sepsis. Immunity 2013; 39: 874-84. PMID: 24184056, 39, 874-84. (Journal IF: 24.082, Citations: 15).

Silva JN, Galmiche A, Tomé JP, Boullier A, Neves MG, Silva EM, Capiod JC, Cavaleiro JA, Santus R, Mazière JC, Filipe P, Morlière P. Biochem Pharmacol. 2010 Nov 1; 80 (9): 1373-85. doi: 10.1016/j.bcp.2010.07.033. Epub 2010 Aug 4. (2010) Chain-dependent photocytotoxicity of tricationic porphyrin conjugates and related mechanisms of cell death in proliferating human

skin keratinocytes. Biochem Pharmacol. 2010 Nov 1; 80 (9): 1373-85. doi: 10.1016/j.bcp.2010.07.033. Epub 2010 Aug 4, 80, 1373-85. (Journal IF: 5.091, Citations: 15).

Ongoing Research Projects

2015/2016: Molecular mechanisms of phototoxicity of Vemurafenib. Coordinator: PAULO MANUEL LEAL FILIPE. Agency: Janssen-Cilag Farmacêutica, Lda. Coordinator Institution: 0. Reference: Education Grant-Programa de Estágio - Ana Teixeira. Amount: 5000.00. Amount (total): 140000.00.

2016/2016: Th9-IL9-IL9R axis: a role in tissue memory in plaque-type psoriasis. Coordinator: PAULO MANUEL LEAL FILIPE. Agency: Clientes Diversos. Reference: Th9-IL9-IL9R axis. Amount: 30400.00. Amount (total): 0.00.

Other Projects

2012/2017: Influence of Etanercept® in the Serum Proteome of Psoriatic Patients. A SELDI Approach format. Coordinator: Paulo Filipe.

2012/2017 Influence of Etanercept® in the Serum Proteome of Psoriatic Patients. A SELDI Approach format. Coordinator: Paulo Filipe.

2013/2017 Clastogenic Plasma Factors in psoriatic patients submitted to narrow-band UVB phototherapies. Coordinator: Paulo Filipe.

2013/2017 Clastogenic Plasma Factors in psoriatic patients submitted to narrow-band UVB phototherapies. Coordinator: Paulo Filipe.

2016/2019: Participation in PRECISE Project – Programa de Atividades Conjuntas – Project number 016394 Precise (Promoção do avanço significativo do conhecimento na área de medicina de precisão e sua translação para benefício da sociedade), financed by the Comissão Diretiva do Programa Operacional Regional de Lisboa and by Fundação para a Ciência e a Tecnologia, I.P. Coordinator: Maria Carmo-Fonseca.

Publications in Peer Review Journals

Teixeira AI, Neno M, Badura R, Borges-Costa J, Filipe PL (2016) Kaposi Sarcoma of the eyelid as an initial manifestation of AIDS. Dermatol Online J. 22(7). pii: 13030/qt2jw6t7cs.

DE Vasconcelos P, Soares-Almeida L, Filipe P (2016) Subungual keratoacanthoma in a pianist. G Ital Dermatol Venereol.151(4):455-6.

Vasconcelos Pd, Ferreira C, Soares-Almeida L, Filipe P (2016) Multifocal primary cutaneous extranodal NK/T lymphoma nasal type. An Bras Dermatol. 91(2):219-21.
Linear Immunoglobulin A Bullous Dermatosis. Gouveia AI, Teixeira A, Freitas JP, Soares-de-Almeida L, Filipe P, Sacramento-Marques M (2016) Linear Immunoglobulin A Bullous Dermatosis. J Pediatr. 2;170:338.

Bullous hemorrhagic dermatosis induced by enoxaparin. Gouveia AI, Lopes L, Soares-Almeida L, Filipe P (2016) Bullous hemorrhagic dermatosis induced by enoxaparin. Cutan Ocul Toxicol. ;35(2):160-2.

Alpalhão M, Uva L, Soromenho G, Filipe P (2016) Dermatological emergencies: one-year data analysis of 8,620 patients from the largest Portuguese tertiary teaching hospital. Eur J Dermatol. ;26(5):460-464.

Torres T, Ferreira A, Ferreira P, Henriques M, Leite L, Magina S, Marques Pinto G, Oliveira H, Sousa Basto A, Tavares Bello R, Varela P, Massa A, Selores M, Filipe P (2016) Portuguese Position Paper on the use of Biosimilars in Psoriasis. Acta Med Port. 29(9):574-577. doi: 10.20344/amp.8118.

Costa C, Gonçalo M; GPEU – Grupo Português de Estudos de Urticária (2016). [Diagnostic and Therapeutic Approach of Chronic Spontaneous Urticaria: Recommendations in Portugal]. Acta Med Port. ;29(11):763-781. doi: 10.20344/amp.8294. Epub 2016 Nov 30.

Borges-Costa J, Lopes L, Soares-Almeida L, Guerra J (2016) Kaposi's sarcoma presenting as violaceous macules on the chest of a kidney transplanted patient. BMJ Case reports 2016L.

Lopes L, Ferro rodrigues R, Llobet S, Lito L, Borges Costa J (2016) Syphilis: prevalence in a hospital in Lisbon. Acta Med Port 29(9):52-5.

Teixeira Ai, Nemo M, Badura R, Borges Costa J (2016) Kaposi sarcoma of the eyelid as an initial manifestation of AIDS. Dermatol Online 15: 22(7).

Marcos Pinto A, Marques T, Machado A, Soares-Almeida L, Filipe P (2016) Concomitant metastatic cutaneous tuberculous abcesses and pott disease in an immunocompetent patient. Dermatol Online 22(10).

Gouveia AI, Sousa M, Osório-Valente R, Araújo A, Soares-de-Almeida L, Freitas JP (2016) Papulonodular mucinosis: an unusual presenting feature of systemic lupus erythematosus. Int J Dermatol. 55(11):e607-e608.

Duarte AF, Maia Silva J, Costa Pereira A, Nagore E, Picoto A, Correia O (2016) Sunbed use among portuguese beach goers - a crave group while waiting sunbeds to be abolished. Sunbed use among Portuguese beach goers: a crave group while waiting sunbeds to be abolished. j eur acad dermatol venereol DOI: 10.1111/jdv.14070.

Other Publications National

Célia Costa A, Campina S, Andrade P, Filipe P, Guilherme A, Gonçalo m (2016) urticária crónica - do diagnóstico ao tratamento. Revista da sociedade Portuguesa de Dermatologia e Venereologia 74(4):315-325.

Travassos AR, Mendonça Sanches M, Soares almeida L (2016) O impacto do conceito de campo de cancerização no desenvolvimento de cancro cutâneo. Revista da sociedade Portuguesa de Dermatologia e Venereologia 74(4):327-333.

Teixeira AI, Filipe P (2016) Protocolos de Fototerapias no tratamento de psoríase. Revista da sociedade Portuguesa de Dermatologia e Venereologia 74(4):371-374.

Teixeira A, Gouveia AI, Brás S, Soares Almeida L (2016) Infiltrados linfocitários cutâneos simuladores de linfoma. Revista da sociedade Portuguesa de Dermatologia e Venereologia 74(1): 15-24.

Invited Lectures and Seminars

Filipe, Paulo. Principais Alterações anátomo-fisiológicas do envelhecimento e suas implicações. Curso Básico de Geriatria. Lisboa, Portugal, November 12, 2016.

Filipe, Paulo. Psoriasis. Update on Dermatology treatments, 19th International Meeting, Porto, April 8, 2016.

Communications in International Conferences

Gouveia AI, Borges Costa, J. Medial nail dystrophy associated with ritonavir. EADV Foresting Resident Course Nails and Nail Diseases, Bolonha, 18-20 Fevereiro de 2016 (Oral Presentation).

Ortins Pina, A, Soares Almeida, L. Strange foreign body granulomas on the face. 13th EADV Spring Symposium – Athens Greece May 2016 (Oral Presentation).

Ortins Pina, A, Maia Silva, J, Soares Almeida, L. Basal cell carcinoma recurrence after incomplete excision. 13th EADV Spring Symposium – Athens Greece May 2016 (Oral Presentation).

Borges Costa, J. Lues maligna: report of three cases in HIV-infected patients. 74th Meeting of American Academy of Dermatology, Washington, Março 2016 (Poster).

Garrido, P, Borges Costa, J. Skin disorders in renal transplant recipients: a retrospective study. 25th Meeting of the European Academy of Dermatology and Venereology, Austria, Setembro 2016 (Poster).

Marcos Pinto, A, Custódio, A, Borges Costa, J. Gonorrhea and genital infection by Chlamydia trachomatis in a Southern Europe Venereology Clinic. 25th Meeting of the European Academy of Dermatology and Venereology, Austria, Setembro 2016 (Poster).

Marcos Pinto, A, Custódio, A, Soares Almeida, L, Borges Costa, J. Non-venereal penile dermatoses: a retrospective study. 25th Meeting of the European Academy of Dermatology and Venereology, Austria, Setembro 2016 (Poster).

Duarte, J, Marcos Pinto, A, Borges Costa, J. Cutaneous paraneoplastic manifestations of hematological malignancies. 15th Congress of Internal Medicine, Amsterdão, Setembro 2016 (Poster).

Communications in National Conferences

Borges Costa, J. balanopostite ou dermatoses inflamatórias o pénis.
Curso de Patologia Genital Masculina – Grupo de Estudo e Investigação das doenças sexualmente Transmissíveis, Porto, Fevereiro de 2016. (Oral Presentation)

Borges Costa J. Lesões cutâneas em viajantes.
Curso de Medicina do viajante do Instituto de Higiene e Medicina Tropical, Universidade Nova de Lisboa, Março 2016. (Oral Presentation)

Pinto A, Borges Costa, J. Casos clínicos de Dermatoses em viajantes.
Curso de Medicina do viajante do Instituto de Higiene e Medicina Tropical, Universidade Nova de Lisboa, Março 2016. (Oral Presentation)

Borges Costa, J. Sífilis. VIII Jornadas de Dermatologia e Dermocosmética em Medicina Famliar, Lisboa, Abril 2016. (Oral Presentation)

Borges Costa, J. Uretrites: abordagem diagnóstica e tratamento. VIII Jornadas de Dermatologia e Dermocosmética em Medicina Famliar, Lisboa, Abril 2016. (Oral Presentation)

Borges Costa, J. Ecos da reunião da Academia Americana de Dermatologia 2016. Reunião de Primavera da Sociedade Portuguesa de Dermatologia e Venereologia, Porto, Maio 2016. (Oral Presentation)

Borges Costa, J. Condilomas e infeção masculina por HPV. Jornadas de Infeções Sexualmente Transmissíveis do Instituto Nacional de Saúde Dr. Ricardo Jorge, Lisboa, Junho 2016. (Oral Presentation)

Marcos Pinto, A, Soares Almeida, L, Borges Costa, J. Dermatoses penianas não venéreas: estudo retrospetivo. Congresso Nacional SPDV, Lisboa, Dezembro 1-3 ,2016. (Oral Presentation)

Marcos Pinto A, Borges Costa, J. Uretrites e cervicites. Curso de Doenças sexualmente Transmissíveis do HSM, Novembro 24, 2016. (Oral Presentation)

Marcos Pinto, A, Borges Costa, J. Corrimentos vaginais. Curso de Doenças sexualmente Transmissíveis do HSM, Novembro 24, 2016. (Oral Presentation)

Marcos-Pinto, A, Sanches, M, Duarte, JA, Soares Almeida, L, Borges Costa, J. Sarcoidose subcutânea. Reunião de Primavera da Sociedade Portuguesa de Dermatologia e Venereologia, Porto, Maio 2016. (Poster)

Gravata A, Castro, R, Borges Costa, J. Estudo de fatores associados à aquisição de infeções transmissíveis em estudantes em intercâmbio universitário em Portugal. Encontro Ciência, Lisboa, Junho 2016. (Poster)

Ortins Pina, A, Soares Almeida, L, Sacramento, M, Filipe, P. Phototoxicity and pseudoporphyria related to voriconazole.
Reunião de Primavera da Sociedade Portuguesa de Dermatologia e Venereologia, Porto, Maio 2016. (Poster)

Ortins Pina, A, Ferreira, J, Filipe, P. Majocchi's granuloma in imunocompetente adolescente.
Reunião de Primavera da Sociedade Portuguesa de Dermatologia e Venereologia, Porto, Maio 2016. (Poster)

Ortins Pina, A, Viana, I, Filipe, P, Soares Almeida L. Painful papules and pustules on hands and feet 16º Congresso Nacional da Sociedade Portuguesa de Dermatologia e Venereologia, Lisboa, 1- 3 Dezembro 2016. (Poster)

Ortins Pina, A, Maia Silva, J, Filipe, P. Nasal wing tumors: surgical experience of diferente flaps. 16º Congresso Nacional da Sociedade Portuguesa de Dermatologia e Venereologia, Lisboa, 1- 3 Dezembro 2016. (Poster)

Ortins Pina, A, Soares Almeida, L, Filipe, P. Erosive pustulosis of the scalp: infections as cause or complication?
16º Congresso Nacional da Sociedade Portuguesa de Dermatologia e Venereologia, Lisboa, 1- 3 Dezembro 2016. (Poster)

Marcos Pinto, A, Soares Almeida, L, Tapadinhas, C. Líquen escleroso extra-genital: caso clínico. 16º Congresso Nacional da Sociedade Portuguesa de Dermatologia e Venereologia, Lisboa, 1- 3 Dezembro 2016. (Poster)

Marcos Pinto, A, Sores Almeida, L, Freitas, J, Filipe, P. Paniculite eosinofílica após injeção de penicilina. 16º Congresso Nacional da Sociedade Portuguesa de Dermatologia e Venereologia, Lisboa, 1- 3 Dezembro 2016. (Poster)

Internationalisation

1 - Patrice Morlière, INSERM, U1088, Laboratoire de Biochimie, Amiens, France & Université de Picardie Jules Verne-Faculté de Médecine et de Pharmacie & Chu Amiens-Laboratoire de Biochimie.

2 - Francisco Bosca. Instituto Universitario Mixto de Tecnologia Quimica (UPV-CSIC), Universitat Politecnica de Valencia, Avenida de los Naranjos s/n, 46022 Valencia, Spain.

3 - Ingrid Emerit, Université Paris VI/CNRS, Paris, France.

4 - James Krueger and Joseph Fernandes, Rockfeller University, Laboratory of Investigative Dermatology, Proteomics, New York, US.

5 - L.K. Patterson, Radiation Laboratory, University of Notre Dame, Indiana, US.

Industry Contract Research

Promoter: Associação para o Desenvolvimento da Dermatologia e Université Paris VI Clastogenic Plasma Factors in psoriatic patients submitted to narrow-band UVB phototherapies Period: 2013-2016 Budget: 15000 Euros.

Promoter: Pfizer Inc. Influence of Etanercept® in the Serum Proteome of Psoriatic Patients. A SELDI Approach Format Period: 2012-2016 Budget: 37000 Euros.

Promotor: Abbvie EPI – IMM 12-0069. "Impact of moderate to severe psoriasis in Portugal"– IMM-12-0069/ EPI psoriase PT". Promotor: Abbvie. ALIGN- IMM11- 0138.

Promotor: Abbvie. ALIGN- IMM11- 0138. "International study to address to what extent patient beliefs regarding medication affect adhesion to treatment in chronic inflammatory diseases".

Promotor: Novartis. Gesture - Cain457A2312. "A randomized, double blind, placebo-controlled, multicenter study to demonstrate the efficacy at 16 weeks of secukinumab 150 and 300 mg s.c. and to assess tolerability and long term efficacy up to 132 weeks in subjects with moderate to severe palmoplantar psoriasis".

Promotor: Pfizer. Purpose – B1801035. "A longterm prospective, observational cohort study of the safety and effectiveness of etanercept in the treatment of paediatric psoriasis patients in a naturalistic setting (PASS)".

Promotor: Abbvie. EPIC. "Effectiveness of Adalimumab in moderate to severe plaque psoriasis patients with distinct co-morbidities".

Promotor: Amgen. AMAGINE2. “A phase 3 study to evaluate the efficacy and safety of induction and maintenance regimens of brodalumab compared with placebo and ustekinumab in subjects with moderate to severe psoriasis”.

Advanced Teaching

Ferreira J, Filipe P. Lisbon Biomed session: "Child Syndrome", IMM, Lisbon February, 2016.

Science and Society

Maia Silva, J (2016) Reunião sobre atualidades em oncologia cutânea, Lecturer at Associação Portuguesa de Cancro Cutâneo, Lisbon, Portugal.

Maia Silva, J (2016) Reunião sobre Sol e Pele para profissionais de Educação e de Saúde, Lecturer, Lisbon, Portugal.

Maia Silva, J (2016) Rastreio de cancro de pele, Vilamoura, Portugal.

Borges Costa, J (2016) Atualizações em IST, Lisboa, Portugal.

Filipe, P (2016) Euromelanoma Day, Hospital Santa Maria, Lisbon, Portugal.

Fonseca, João Eurico

Major Interests / Objectives

The Rheumatology Research Unit (RRU) results from a partnership between the IMM/FML and the Rheumatology Department of the Santa Maria Hospital, CHLN. Basic scientists and clinicians closely work together to promote translational research and clinical excellence in the field of Rheumatology. Our specific research objectives are the study of the impact of inflammatory joint diseases (such as Rheumatoid Arthritis (RA), Juvenile Idiopathic Arthritis (JIA), Spondyloarthritis (SpA) and Systemic Lupus Erythematosus (SLE)) on bone and vessel in order to characterize potential tools for early diagnosis and prognosis and potential targets for novel therapies. The long-term objective of the RRU is to achieve recognition as a European League Against Rheumatism Centre of Excellence in Rheumatology.

Head of Laboratory

João Eurico Fonseca, MD/PhD.

Research Team

Alexandre Figueiredo Brito	Graduate	MSc Student (Started September)
Ana Filipa Mourão	Graduate	PhD Student, Hospital Egas Moniz, MD
Ana Filipa Rodrigues Lopes	Master	Lab Manager (Left September)
Ana Maria Ferreira Rodrigues	Graduate	PhD Student, Faculdade Medicina da Universidade de Lisboa
Ana Raquel Conduto Dias Maia	Graduate	Trainee
Ana Rita Cascão Rodrigues	PhD	Post-Doctoral Investigator
Ânia Robim Costa e Sousa	Graduate	MSc Student
Bruno Miguel Costa Vidal	Graduate	PhD Student
Cristina Dias Botelho da Ponte	Graduate	PhD Student
Diana de Almeida Carmona Fernandes	Master	PhD Student
Elsa Cristina Vieira de Sousa	Graduate	Investigator, Faculdade Medicina da Universidade de Lisboa
Helena Cristina de Matos Canhão	MD/PhD	Principal Investigator, Faculdade Medicina da Universidade de Lisboa, Assistant Professor
Inês Alexandra Pascoal Lopes	Master	Lab Manager
Inês Pedro Perpétuo	Master	PhD Student
Joana Ribeiro Caetano Lopes	PhD	Post-Doctoral Investigator
Joaquim Miguel Polido Pereira	Graduate	Investigator, CHLN, MD
Marco Aurélio Carmelino Cardoso Sarmento	Graduate	PhD Student, Faculdade Medicina da Universidade de Lisboa, Teaching Assistant

Maria Helena Regalo da Fonseca	MD/PhD	Principal Investigator, Faculdade Medicina da Universidade de Lisboa, Associate Professor
Maria João Gonçalves	Master	PhD Student, CHLN , MD , NA
Maria José Parreira dos Santos	MD/PhD	Principal Investigator, Faculdade Medicina da Universidade de Lisboa, Assistant Professor
Pedro Nuno Lopes Mendes Calheiros Andrade	Master	Investigator (Started October)
Rafael António Moiteiro da Cruz	Graduate	MSc Student (Left April)
Raquel Patrícia Campanilho Marques Ruivo	Master	Consultant
Rita Alexandra Pedra Aguiar de Moura	PhD	Post-Doctoral Investigator
Soraia Patrícia Caetano da Silva	Master	MSc Student
Susana Maria da Silva Oliveira	Graduate	MSc Student (Started July)
Vânia Raquel Gomes Glória	PhD	Investigator (Started April)
Vasco Madeira Crispim Romão	Master	PhD Student, CHLN, MD

Laboratory Keywords / Research Areas

Joint inflammatory diseases - pathogenesis, early diagnosis, prognosis and pharmacogenetics- Rheumatoid Arthritis, Psoriatic Arthrits, Ankylosing spondylitis and Juvenile Idiopathic Arthritis, Systemic effects of inflammation and effects of inflammation on bone- Osteoporosis, Osteoarthritis and Rheumatoid Arthritis, Bone biology, structure, biomechanics, Chronic Inflammation and cardiovascular risk- atherosclerosis and bone, Epidemiology of Rheumatic Diseases, Cohorts, Registries and Databases. Recommendations and Guidelines, Collaboration in Clinical Trials.

Major Scientific Achievements

1. Characterization of Juvenile Idiopathic Arthritis in adulthood: fulfillment of classification criteria for adult rheumatic diseases, long-term outcomes and predictors of inactive disease, functional status and damage.

2. Characterization of the effect of TNF antagonists on osteoclasts from rheumatoid arthritis and ankylosing spondylitis patients.

3. Involvement in the organization of major scientific meetings in the field of rheumatology.

4. Involvement in the organization of training of rheumatology at a national level.

5. Engagement with patient's organizations.

6. Multidisciplinary Portuguese recommendations on DXA request and indication to treat in the prevention of fragility fractures.

7. Zoledronate efficacy and safety in active Paget´s disease. Long-term follow-up and retreatment in clinical practice.

8. Characterization of Celastrol effect on bone quality in arthritic rats and determination of the effective and safe oral dose of pure celastrol in AIA rats.

Selected Publications

Carmona-Fernandes D, Santos MJ, Canhão H, Fonseca JE (2013) Anti-ribosomal P Protein IgG autoantibodies in patients with systemic lupus erythematosus: diagnostic performance and clinical profile. BMC Med 11, R196. (Journal IF: 8.005, Citations: 27).

Moura RA, Cascão R, Canhão H, Sousa E, Mourão AF, Polido-Pereira J, Rodrigues AM, Queiroz MV, Souto-Carneiro MM, Rosário HS, Graça L, Fonseca JE (2011) Cytokine pattern in early Rheumatoid arthritis favors B cell activation and survival. Rheumatology. Rheumatology 50(2), 278-82. (Journal IF: 4.524, Citations: 25).

Cascão R, Rosário HS, Souto-Carneiro MM, Fonseca JE. (2010) Neutrophils in rheumatoid arthritis: More than simple final effectors. Autoimmun Rev. 9, 531-535. (Journal IF: 8.490, Citations: 74).

Cascão R, Moura RA, Perpétuo I, Canhão H, Vieira-Sousa E, Mourão AF, Rodrigues AM, Polido-Pereira J, Queiroz MV, Rosário HS, Souto-Carneiro MM, Graca L, Fonseca JE. (2010) Identification of a cytokine network sustaining neutrophil and Th17 activation in untreated early rheumatoid arthritis. Arthritis Res Ther 12(5), R196. (Journal IF: 3.979, Citations: 39).

Caetano-Lopes J, Nery AM, Canhão H, Duarte J, Cascão R, Rodrigues A, Perpétuo I, Abdulghani S, Amaral PM, Sakaguchi S, Konttinen YT, Graça L, Vaz MF, Fonseca JE (2010) Chronic arthritis leads to disturbances in the bone collagen network. Arthritis Res Ther 12(1), R9. (Journal IF: 3.979, Citations: 14).

Ongoing Research Projects

2012/2016: Understanding physician's decision to switch or keeping treatment regimen -is it dependent on patient's outcome measures? Coordinator: Helena Cristina de Matos Canhão. Agency: Laboratórios Pfizer, Lda. Reference: Pfizer WS2120109. Amount: 85000.00. Amount (total): 85000.00.

2012/2016: Predictors of atherosclerosis progression in patients with rheumatoid arthritis over a period of 5 years: focus on adipose tissue and inflammation. Coordinator: Maria José Santos. Agency: Fundação AstraZeneca. Reference: Atherosclerosis progression - AstraZeneca. Amount: 15000.00.

2012/2017 How inflammation early affects bone's nano-properties at arthritis onset. Coordinator: João Eurico Fonseca. Agency: UCB Celltech. Reference: UCB_IIS_Cimzia - Pre Clinical. Amount: 50000.00.

2012/2017 Golimumab as first line DMARD therapy in MTX naive psoriatic arthritis - a 24 weeks efficacy and safety study focusing on dactylitis and enthesitis. Coordinator: Elsa Sousa. Agency: Merck Sharp & Dohme. Reference: GO-DACT. Amount: 36087.50. Amount (total): 144350.00.

2013/2016: Tuberculosis prevention in patients with immune mediated inflammatory diseases treated with biological therapy. Coordinator: João Eurico Fonseca. Agency: Bolsa CHLN 2012. Reference: BioTB. Amount: 2500.00. Amount (total): 2500.00.

2013/2017: Synovial pathobiology and clinical differences in elderly and younger-onset of rheumatoid arthirtis. Coordinator: João Eurico Fonseca. Agency: Sociedade Portuguesa de Reumatologia. Coordinator Institution: 0. Reference: BioTB. Amount: 3850.00. Amount (total): 3850.00.

2013/2017: IL-6 blockade in rheumatoid arthritis patients: impact on Tfh subsets and humoral responses. Coordinator: João Eurico Fonseca. Agency: Bolsa Pfizer. Coordinator Institution: 0. Reference: BioTB. Amount: 2500.00. Amount (total): 2500.00.

2013/2017 Inhibition of bone and cartilage degradation in rat induced arthritis treated with tofacitinib. Coordinator: João Eurico Fonseca. Agency: Laboratórios Pfizer, Lda. Reference: Aspire - Pfizer WI 180320. Amount: 60000.00. Amount (total): 60000.00.

2014/2016: Post-transcriptional regulation of response to Etanercept in patients with rheumatoid arthritis. Coordinator: Helena Cristina de Matos Canhão. Agency: Laboratórios Pfizer, Lda. Reference: Pfizer - WI187429. Amount: 40000.00. Amount (total): 40000.00.

2014/2017: Linking Biomechanics, Inflammation and Bone Formation in Psoriatic Arthritis. Coordinator: João Eurico Fonseca. Agency: UCB Pharma, Lda. Reference: UCB ES. Amount: 51350.00. Amount (total): 51350.00.

2014/2017: Estudo aleatorizado, aberto, para investigar os mecanismos de resposta-resistência ao rituximab versus tocilizumab em doentes com artrite reumatóide com resposta inadequada aos antagonistas do TNF (R4RA). Coordinator: João Eurico Fonseca. Agency: Centre for Experimental Medicine and Rheumatology. Reference: R4RA. Amount: 2235.35. Amount (total): 2235.35.

2014/2016: EWRR. Coordinator: João Eurico Fonseca. Agency: Eli Lilly SA. Reference: EWRR. Amount: 5000.00. Amount (total): 5000.00.

2014/2017: European Calcified Tissue Society/Amgen Bone Biology Research Fellowship. Coordinator: João Eurico Fonseca. Agency: ECTS Ltd. Reference: ECTS - Bruno Vidal. Amount: 100000.00. Amount (total): 100000.00.

2015/2016: Disease course and adult outcomes of childhood-onset rheumatic diseases. Coordinator: João Eurico Fonseca. Agency: Sociedade Port. Reumatologia. Reference: Bolsa de Inovação Diagnóstica. Amount: 5000.00. Amount (total): 0.00.

2015/2018 Evaluation of celastrol as a candidate for the treatment of rheumatoid arthritis. Coordinator: João Eurico Fonseca. Agency: Sociedade Port. Reumatologia. Coordinator Institution: 0. Reference: CELAR. Amount: 10000.00. Amount (total): 10000.00.

2016/2016: Paget's disease of bone (PDB) – a family study and a family aggregation study in Spondiloarthritis. Coordinator: João Eurico Fonseca. Agency: Sociedade Port. Reumatologia. Reference: Paget SF. Amount: 3000.00. Amount (total): 0.00.

2016/2019: Nanoagentes de monoxido de carbono COGSs para combater a Artrite Reumatoide. Coordiantor: João Eurico Fonseca. Agency: FCT. Reference: PTDC/QEQ-MED/1902/2014. Amount: 22 000.00. Amount (total): 22 000.00.

Other Projects

2016/2019: Participation in PRECISE Project – Programa de Atividades Conjuntas – Project number 016394 Precise (Promoção do avanço significativo do conhecimento na área de medicina de precisão e sua translação para benefício da sociedade), financed by the Comissão Diretiva do Programa Operacional Regional de Lisboa and by Fundação para a Ciência e a Tecnologia, I.P. Coordinator: Maria Carmo-Fonseca.

Publications in Peer Review Journals

Cortes M, Fernandes S, Teixeira V. Upper gastrointestinal bleeding in a patient with Sjögren syndrome. Rev Esp Enferm Dig. 2016. 108(9):576. Times Cited: 0 IF: 1.455.

Barreto Cortes M, Teixeira V, Fernandes SR, Rego F. Haemophilus parainfluenzae endocarditis with systemic embolisation following maxillary sinusitis. BMJ Case Rep. 2016 -216473. Times Cited:0 IF: ND.

Sousa S, Gonçalves MJ, Inês LS, Eugénio G, Jesus D, Fernandes S, Terroso G, Romão VC, Cerqueira M, Raposo A, Couto M, Nero P, Sequeira G, Nóvoa T, Melo Gomes JA, Canas da Silva J, Costa L, Macieira C, Silva C, Silva JAP, Canhão H, Santos MJ. Clinical features and long term outcomes of systemic lupus erythematosus: comparative data of childhood, adult and late onset disease in a national register. Rheumatol Int. 2016; 36: 955-60. Times Cited:0 IF: 1.702.

Sousa S, Duarte AC, Cordeiro I, Ferreira J, Gonçalves MJ, Meirinhos T, Rocha TM, Romão VC, Santos MJ. Efficacy and Safety of Vaccination in Pediatric Patients with Systemic Inflammatory Rheumatic Diseases: a systematic review of the literature. Acta Reumatol Port 2016; 41: Times Cited: 0 IF: 0.553.

Cordeiro I, Duarte AC, Ferreira JF, Gonçalves MJ, Meirinhos T, Rocha TM, Romão VC, Sousa S, Guedes M, Conde M, Abreu C, Aleixo MJ, Santos MJ. Recommendations for Vaccination in Adult Patients with Systemic Inflammatory Rheumatic Diseases from the Portuguese Society of Rheumatology. Acta Reumatol Port. 2016; 41: 112-130. Times Cited: 0 IF: 0.553.

Santos MJ, Conde M, Mourão AF, Ramos F, Cabral M, Brito I, Ramos MP, Marques R, Melo-Gomes S, Guedes M, Gonçalves MJ, Estanqueiro P, Zilhão C, Henriques C, Salgado M, Canhão H, Fonseca JE, Melo-Gomes J. 2016 update of the Portuguese recommendations for the use of

biological therapies in children and adolescents with Juvenile Idiopathic Arthritis. Acta Reumatol Port. 2016; 41:194-212. Times Cited: 0 IF: 0.553.

Fernandes S, Almeida P, Melo-Gomes J, Romeu JC. Brown Tumors in Secondary Hyperparathyroidism in a Patient with Lupus Nephritis. J Clin Rheumatology. 2016. 22: 438-39. IF: 1.245 Times Cited: 0.

Araujo, F; Goncalves, J; Fonseca, JE. Biosimilar DMARDs: What Does the Future Hold? Drugs. 2016. 76: 629-637. Times Cited: 1 IF: 4.883.

Araujo, GR; Fujimura, PT; Vaz, ER; Silva, TA; Rodovalho, VR; Britto-Madurro, AG; Madurro, JM; Fonseca, JE; Silva, CHM; Santos, PS; Mourao, AF; Canhao, H; Goulart, LR; Goncalves, J; Ueira-Vieira, C. A novel reactive epitope-based antigen targeted by serum autoantibodies in oligoarticular and polyarticular juvenile idiopathic arthritis and development of an electrochemical biossensor. Immunobiology. 2016. 224:634-640. Times Cited: 0 IF:2.781.

Araujo, FC; Goncalves, J; Fonseca, JE. Pharmacoeconomics of Biosimilars: What Is There to Gain from Them? Curr Rheumatol Rep. 2016; 18, 50. Times Cited: 0 IF: 2.976.

Gonçalves J, Araújo F, Cutolo M, Fonseca JE. Biosimilar monoclonal antibodies: preclinical and clinical development aspects. Clin Exp Rheumatol. 2016; 34: 698-705. Times Cited: 0 IF: 2.495.

Barreira SC, Fonseca JE. The Impact of Conventional and Biological Disease Modifying Antirheumatic Drugs on Bone Biology. Rheumatoid Arthritis as a Case Study. Clin Rev Allergy Immunol. 2016; 51:100-109. Times Cited: 0 IF: 5.313.

Santos, MJ; Canhao, H; Faustino, A; Fonseca, JE. Reuma.pt: A Case Study. Acta Med Port. 2016; 29: 83-84. Times Cited: 0 IF: 0.304.

Xerinda S, Oliveira O, Lucas R, Fonseca JE, Varela P, Cotter J, Duarte R. Gaps and barriers to tuberculosis screening among anti-tumor necrosis factor prescribers. Acta Reumatol Port. 2016; 41: 382-4. Times Cited: 0 IF: 0.553.

Steenbergen HW van, Aletaha D, van de Voorde LJJB, Brouwer E, Codreanu C, Combe B, Fonseca JE, Hetland ML, Humby F, Kvien TK, Niedermann K, Nuño L, Oliver S, Rantapää-Dahlqvist S, Raza K, van Schaardenburg D, Schett G, De Smet L, Szücs G, Vencovský J, Wiland P, de Wit M, Landewé RL, van der Helm-van Mil AHM. Extended report: EULAR definition of arthralgia suspicious for

progression to rheumatoid arthritis. Ann Rheum Dis Published Online First: 6 October 2016 doi:10.1136/annrheumdis-2016-209846 Times Cited: 0 IF 12.384.

Humby F, Kelly S, Bugatti S, Manzo A, Filer A, Mahto A, Fonseca JE, Lauwerys B, D'Agostino MA, Naredo E, Lories R, Montecucco C, Tak PP, Fitzgerald O, Smith MD, Veale DJ, Choy EH, Strand V, Pitzalis C. Evaluation of Minimally Invasive, Ultrasound-guided Synovial Biopsy Techniques by the OMERACT Filter--Determining Validation Requirements. J Rheumatol. 2016; 43: 208-13. Times Cited:4 IF: 3.236.

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Castro AM, Fernandes DC, Rodrigues AM, Pedro LM, Santos MJ, Canhão H, Fonseca JE. Incidence and predictors of cardiovascular events in a cohort of patients with rheumatoid arthritis. Acta Reumatol Port. 2016; 41:213-219. Times Cited: 0 IF: 0.553.

Fernandes S, Vieira-Sousa E, Furtado C, Costa A, Barros R, Fonseca JE. A diagnosis of disseminated tuberculosis based on knee arthroscopic guided synovial biopsy in the context of monoarthritis. Acta Reumatol Port. 2016; 41:256-259. Times Cited: 0 IF: 0.553.

Oliveira-Ramos F, Eusébio M, M Martins F, Mourão AF, Furtado C, Campanilho-Marques R, Cordeiro I, Ferreira J, Cerqueira M, Figueira R, Brito I, Canhão H, Santos MJ, Melo-Gomes JA, Fonseca JE. Juvenile idiopathic arthritis in adulthood: fulfilment of classification criteria for adult rheumatic diseases, long-term outcomes and predictors of inactive disease, functional status and damage. RMD Open 2016;2:e000304. doi: 10.1136/rmdopen-2016-000304. Times Cited: 0 IF: NA.

Azevedo V, Hassett B, Fonseca JE, Atsumi T, Coindreau J, Jacobs I, Mahgoub E, O'Brien J, Singh E, Vicik S, Fitzpatrick B. Differentiating biosimilarity and comparability in biotherapeutics. Clin Rheumatol. 2016; 35: 2877-86. Times Cited: 0 IF: 2.042.

Parker LK*, Ponte C*, Howell KJ, Ong VH, Denton CP, Schreiber BE. (*these authors contributed equally to this work). Clinical features and management of erythromelalgia: long term follow-up of 46 cases. Clin Exp Rheumatol. 2016 Aug 2. [Epub ahead of print]. Times Cited: 0 IF: 2.495.

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Other Publications International

Romão VC. RA III - Other biologics and new drugs beyond biologics. EMEUNET Newsletter - EULAR Highlights, July 2016.

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Other Publications National

Romão VC. Investigação na Síndrome de Sjögren. Boletim da Liga Portuguesa Contra as Doenças Reumáticas, April 2016.

Romão VC. Consulta Multidisciplinar de Síndrome de Sjögren. Boletim da Liga Portuguesa Contra as Doenças Reumáticas, October 2016.

Romão VC. EMEUNET - The Emerging EULAR Network. Manual do Interno, 2ª Edição, October 2016.

Liga Portuguesa Contras as doenças reumáticas e associações de doentes. II Manual do Interno da Sociedade Portuguesa de Reumatologia, 2016.

L Narciso, C Resende, A Cordeiro, MJ Salvador, P Clemente-Coelho, E Vieira-Sousa, A Castro, MJ Gonçalves, V Teixeira, JE Fonseca. Manual informativo para o doente com Esclerose Sistémica. Sociedade Portuguesa de Reumatologia. Fevereiro 2016.

Castro A. Manual do Interno da Sociedade Portuguesa de Reumatologia. Liga Portuguesa Contras as doenças reumáticas e associações de doentes. II 2016.

Invited Lectures and Seminars

2º Curso de Reumatologia Pediátrica para Internos de Reumatologia. Lisboa, 15th January 2016.
Campanilho-Marques R. Vasculites Juvenis.
Oliveira Ramos F. Artrites Idiopáticas Juvenis.

14th Medinterna International Meeting, Porto, Portugal; 4th February 2016.

Ponte C. Giant Cell Arteritis.

World Congress on Scleroderma, Lisboa, 18-20th February 2016.

Fonseca JE. Chair the session "Models of scleroderma".

2ª Reunião - Doenças Imunomediadas em Idade Pediátrica: Visão Multidisciplinar. Porto, 11th March 2016.

Fonseca JE. Doenças reumáticas imunomediadas - o delicado equilíbrio dos genes, sistema imunitário e ambiente.

Oliveira Ramos F. Caracterização clínica das manifestações renais: implicação terapêutica e prognóstica.

Pfizer Grange Castle Manufactoring Facility. Dublin, Ireland, 30th March 2016.

Fonseca JE. How biologics and biosimilars are developed?

7th AIMS Meeting, Lisbon, Portugal, 11-13th March.

Fonseca JE. Abstracts sessions.

Autoimmunity, Leipzig, Germany, 6-10th April 2016.

Fonseca JE. Chair the session: "T-Reg, B-Reg, Tolerance and Autoimmunity".

Fonseca JE. The impact of conventional and biological DMARDs on bone biology.

Jassen Meeting – Hospital Garcia de Orta, Lisbon, Portugal, 7th April 2016.

Vieira-Sousa E. "Unmet needs in Psoriátic Arthritis – Ustekinumab in clinical practice".

Pfizer Summitt. Évora, Portugal 16-17th April 2016.

Fonseca JE. Novas vias de sinalização intracellular.

Fonseca JE. Biossimilares- desafios na prática clínica.

Pfizer Grange Castle Manufactoring Facility. Dublin, Ireland, 20th April 2016.

Fonseca JE. Biosimilars an overview.

Fonseca JE. Interchangeability and Switiching.

XV Jornadas Internacionais de Reumatologia Pediátrica. Lisboa, Portugal, 21-22nd April 2016.

JEFonseca. Opening session.

Santos MJ. Utilização "off-label" de agentes biológicos em reumatologia pediática.

Oliveira Ramos F. Terapêutica das Artrites Idiopáticas Juvenis.

Campanilho-Marques R. Dermatomiosite juvenil.

Clinical Research Bootcamp – Ordem dos Médicos da Região Norte, Porto, Portugal, 30th April 2016.

Vieira-Sousa E. "Pitch your Project".

XVIII Congresso Português de Reumatologia, Vilamoura, Portugal, 4th-7th May 2016.

FonsecaJE. The Future of Osteoarthritis.

Veira.Sousa E. Chair the session: "Apremilast: Uma Nova Terapêutica Oral Na Artrite Psoriática".

Polido-Pereira J. Chair the session: "Signaling The Future IN Ra Management".

Santos MJ. JAK Pathway: Clinical Trial Programme.

Santos MJ. Real World Data as The Evidence.

Santos MJ. Como prevenir e tratar as infecções em doentes reumáticos.

Romeu JC. Personalização da teapêutica da osteoporose: será possível tratar com um alvo/objectivo?

Campanilho-Marques, R. Poster session moderator.

Pfizer EU Research Forum. Paris, France, 13th may 2016.

Fonseca JE. Inhibition of bone and cartilage degradation in rat induced arthritis treated with tofacitinib".

Masters Meeting, Porto de Galinhas, Brasil, 21st may 2016.

Fonseca JE. Algoritmo do European Society for Clinical and Economic Aspects of Osteoporosis, Osteoarthritis and Musculoskeletal Diseases para o tratamento da osteoartrose.

Pizza Seminar, Instituto de Medicina Molecular, Lisbon Portugal, 24th may 2016.

Romão VC. Clinical and Pathobiological Differences in Elderly- and Younger-onset Rheumatoid Arthritis.

Pfizer Grange Castle Manufactoring Facility. Dublin, Ireland, 25th may 2016.

Fonseca JE. Biosimilars an overview.

Jassen Meeting – Hospital de Egas Moniz, Lisboa, 25th may 2016.

Vieira-Sousa E. "Unmet needs in Psoriátic Arthritis – Ustekinumab in clinical practice".

European League Against Rheumatism Annual Congress, London, United Kingdom, 8th-11th June 2016.

Romão VC. Chair the session “The Young Rheumatologist Session: Teaching Clinical Skills”.
Fonseca JE. Chair the session “Clinical Basic Translational Highlight Session”.

EUVAS investigators meeting, Leiden, Netherlands; 16th June de 2016.
Ponte C, Sznajd J, Little M. European Vasculitis registries: Current state.

European Inflammation Payer Academy. Barcelona, Spain, 17 June 2016.
Fonseca JE. Biosimilars an overview and introduction.

II Fórum de Imunologia, Janssen Lisboa, Portugal, 17-18th june 2016.
Vieira-Sousa E e Maia, JS. “EFFICACY OR PERSISTENCE? - What matters most with current biological therapies?”.
Fonseca JE. Chair the session “Eficácia e persistência”.

Conferência Infarmed: Medicamentos biossimilares - estado da arte. Lisboa, 30th june 2016.
Fonseca JE. Medicamentos biossimilares: Experiência na sua utilização.

Lançamento do primeiro biossimilar mAB no Brasil. São Paulo, Brasil, 23rd july 2016.
Fonseca JE. Switch de biossimilares: eficacia e segurança.

44º Congresso Alemão de Reumatologia, Frankfurt, Germany, 31st august and 1st September 2016.
Fonseca JE. The quest for the magic bullet in the treatment of arthritis.

Comemorações do dia da Criança e Adolescente no Centro Hospitalar Lisboa Norte, Lisbon, Portugal, 7th September 2016.
Oliveira Ramos F. Apresentação da Unidade de Reumatologia Pediátrica do CHLN.

Connecting Kids Care, Lisbon, Portugal, 17th September 2016.
Oliveira Ramos F. Importância dos Registos na prática clínica.

XIX Fórum de Apoio ao Doente Reumático, Lisbon, Portugal, 15th October 2016.
Oliveira Ramos F. Consequências da Artrite Idiopática Juvenil na idade adulta.

Curso de Reumatologia Pediátrica para internos de Pediatria da Sociedade Portuguesa de Pediatria. Lisbon, Portugal, 15th October 2016.
Oliveira Ramos F. Lupus Eritematoso Sistémico Juvenil.

V Paradigma Shift, Lisboa, Portugal, 15th october 2016.

"Artrite Psoriática: da pele limpa à inibição da progressão radiográfica".

10th European Workshop on Immune-Mediated Inflammatory Dieseases, Toulosse, France, 19-21st October 2016.

Fonseca JE. Chair of the Speed Data Session, group 4.

Pfizer Grange Castle Manufactoring Facility. Dublin, Ireland, 26th October 2016.

Fonseca JE. Biosimilars an overview.

Celgene Meeting, Psoriatic Disease Update, Lisboa, Portugal, 30th October, 2016.

Vieira-Sousa E. "Psoriatic Disease Update".

V Simposium da Acta Médica Portuguesa, Ordem dos Médicos da Região Norte, Porto, Portugal, 4th november, 2016.

Vieira-Sousa E. "Acta Reumatológica Portuguesa"

ACR/ARHP Annual Meeting 2016 Washington DC, USA; 16 de November de 2016.

Ponte C, Robson J, Grayson P, Suppiah R, Merkel PA, Watts RA, Luqmani RA. CLINICAL SYMPOSIUM - New ACR/EULAR Classification Criteria for ANCA-Associated Vasculitis: Implications for Clinical Practice. New ACR-EULAR Classification Criteria for ANCA-associated Vasculitis: Why and How?

Fonseca JE chaired the ACR-EULAR Synovitis Study Group meeting.

Congresso Nacional da Sociedade Italiana de Reumatologia, Rimini, Italy, 23rd – 26th November 2016.

Fonseca JE. Biosimilars: the position of the Portuguese Society of Rheumatology.

ImmunoScience Forum, Bucharest, Romania, 25th-26th November 2016.

Fonseca JE. Challenges in the Management of RA.

XXIV Jornadas Internacionais de Reumatologia do IPR, Lisboa Novembro de 2016.

Rosa, CM. Intestino e Espondilartrites.

Romeu, JC. (chair) Flash Reumatológico.

Campanilho-Marques, R. Poster session Jury.

Communications in International Conferences

4th Systemic Sclerosis World Congress, Lisbon, Portugal, 18th-20th February 2016 Posters: Romão VC, Gonçalves MJ, Castro A, Ponte C, Canhão H, Resende C, Pereira da Silva JA. Systemic sclerosis is associated with poor sleep quality and decreased quality of life.

Gonçalves MJ, Romão VC, Castro A, Ponte C, Canhão H, Resende C, Pereira da Silva JA. Restless leg syndrome prevalence is not increased in Systemic Sclerosis patients.

Castro A, Resende C, Ferreira L, Moniz D, Ponte C, Pereira da Silva JA. Systemic sclerosis and interstitial lung disease: Predictors of progression of ILD in patients with SSc.

Cordeiro A, Ponte C, Couto M, Cordeiro I, Salvador MJ, Araújo F, Clemente-Coelho P, Eusébio M, Martins F, Santos MJ. Reuma.pt/SScl – The Portuguese Registry for Scleroderma patients.

I Foeldvari, J Klotsche, V Stanevicha, E Alexeeva, MM Katsicas, MT Terreri, AP Sakamoto, R Cimaz, M Kostik, T Avcin, MJ Santos, M Moll, D Nemkova, F Sztajnbok, C Battagliotti, J Brunner, D Eleftheriou, AS Giraldo, L Harel, M Janarthanan, T Kallinich, K Minden, SM Nielsen, KS Torok, Y Uziel, N Helmus. Update on the Juvenile Systemic Sclerosis Inception Cohort Project. Characteristics of the First 50 Patients at First Assessment.

I Foeldvari, J Klotsche, V Stanevicha, E Alexeeva, MM Katsicas, MT Terreri, AP Sakamoto, R Cimaz, M Kostik, T Avcin, MJ Santos, M Moll, D Nemkova, F Sztajnbok, C Battagliotti, J Brunner, D Eleftheriou, AS Giraldo, L Harel, M Janarthanan, T Kallinich, K Minden, SM Nielsen, KS Torok, Y Uziel, N Helmus. Performance of the Adult Systemic Sclerosis Classification in Juvenile Systemic Sclerosis Patients. Results from the Juvenile Systemic Sclerosis Inception Cohort.

I Foeldvari, J Klotsche, V Stanevicha, MM Katsicas, MT Terreri, AP Sakamoto, R Cimaz, M Kostik, T Avcin, MJ Santos, M Moll, D Nemkova, F Sztajnbok, C Battagliotti, J Brunner, D Eleftheriou, AS Giraldo, L Harel, M Janarthanan, T Kallinich, K Minden, SM Nielsen, KS Torok, Y Uziel, N Helmus. Is There a Difference in the Presentation of Diffuse and Limited Subtype of Juvenile Systemic Sclerosis in Childhood? Results from the Juvenile Scleroderma Inception Cohort.

I Cordeiro, A Duarte, S Sousa, L Teixeira, J Canas da Silva, A Cordeiro, MJ Santos. Immunophenotype Characterization of Systemic Sclerosis Patients: Associated Clinical Features and Prognostic Implications.

S Sousa, A Duarte, I Cordeiro, L Teixeira, J Canas da Silva, A Cordeiro; MJ Santos. Interstitial Lung Disease in Scleroderma Portuguese Patients.

A Duarte, I Cordeiro, S Sousa, L Teixeira, J Canas da Silva, A Cordeiro, MJ Santos. Cardiac Involvement in Systemic Sclerosis – a Portuguese Reality.

P Clemente-Coelho, A Cardoso, A Castro, C Resende, MJ Salvador, G Terroso, L Costa, I Silva, F Araujo, A Raposo, MJ Santos. Long-term Duration Systemic Sclerosis – we need a reclassification of capillaroscopy patterns. A multicentre study.

L Teixeira, I Cordeiro, S Sousa, AC Duarte, J Canas da Silva, A Cordeiro, MJ Santos. Nailfold Capillaroscopy Findings in Sleroderma Patients – Prognostic Implications.

I Cordeiro, A Cordeiro, T Judas Matos, M Loureiro, V Martins, S Carmona, J Canas da Silva, MJ Santos. Oligosymptomatic Pulmonary Embolism in Systemic Sclerosis Patients.

A Duarte, I Cordeiro, A Costa, MJ Santos. Tocilizumab – A Novel Promising Therapy in Systemic Sclerosis.

L Teixeira, I Cordeiro, J Canas da Lilva, MJ Santos, A Cordeiro. Nailfold Capillaroscopy in Connective Tissue Diseases – a Single Center Experience.

A Cordeiro, C Ponte, M Couto, I Cordeiro, MJ Salvador, F Araújo, P Clemente-Coelho, M Eusébio, F Martins, MJ Santos. Reuma.pt/SSc – The Portuguese Registry for Scleroderma Patients.

36th European Workshop for Rheumatology Research (EWRR), York, United Kingdom, 25th-27th February 2016 Posters:
Moura RA, Quaresma C, Vieira AR, Gonçalves MJ, Polido-Pereira J, Romão VC, Martins N, Canhão H, Fonseca JE. Increased CXCR5 B cell expression, CXCL13 and sCD23 serum levels in untreated early rheumatoid arthritis patients support B Cell activation since the initial phase of the disease.
Moura RA, Quaresma C, Vieira AR, Gonçalves MJ, Polido-Pereira J, Romão VC, Martins N, Canhão H, Fonseca JE. Peripheral blood B-cell phenotyped is affected by TNF-inhibitors and tocilizumab treatment in rheumatoid arthritis.

Symposium & Imaging Workshop on PMR, GCA & LVV 2016, Southend-On-Sea, United Kingdom; 10-12th March 2016.
Luqmani RA, Dasgupta B, Schmidt WA, Ponte C, Jurgensen C, Fortunato F, Patel JS. SIRRESTA: Efficacy and Safety Study of Sirukumab in Patients with Giant Cell Arteritis.

10th International Congress on Autoimmunity, Leipzig, Germany, 6th-10th April 2016. Posters: Moura RA, Quaresma C, Vieira AR, Gonçalves MJ, Polido-Pereira J, Romão VC, Martins N, Canhão H, Fonseca JE. Peripheral blood B-cell phenotyped is affected by TNF-inhibitors and tocilizumab treatment in rheumatoid arthritis.

XV Jornadas Internacionais de Reumatologia Pediátrica. Lisboa, Portugal, 21-22nd April 2016. Campanilho-Marques R. Dermatomiosite juvenil.
Dinis J, Valido A., Oliveira Ramos F., Campanilho-Marques R, Roxo H.; Saraiva F.; Fonseca JE. Protóxido de azoto nas técnicas de reumatologia pediátrica: eficácia e segurança.
MJ Gonçalves, JA Melo Gomes. Artrite Idiopática Juvenil associada a síndromes genéticos.
Joana da Silva Dinis, Ana Valido, Filipa Oliveira Ramos, Raquel Campanilho-Marques, Helena Roxo, Fernando Saraiva, João Eurico Fonseca. Protóxido de Azoto nas técnicas de Reumatologia Pediátrica: eficácia e segurança.

European Calcificed Tissue Society Congress 2016, Rome, Italy, 14-17th may 2016 Posters:
Vidal B, Cascão R, Vale AC, Cavaleiro I, Vaz MF, 4, Brito JA, Canhão H, Fonseca JE. Arthritis induces early bone high turnover, structural degradation and mechanical weakness.

European League Against Rheumatism Annual Congress, London, United Kingdom, 8th-11th June 2016
Campanilho-Marques R, Deakin C., Simou S., Wedderburn L. R., Pilkington C. on behalf of Juvenile Dermatomyositis Research Group (JDRG) Efficacy and safety of Tumour Necrosis Factor-lfa antagonists in a large cohort of Juvenile Dermatomyositis patients.
Teixeira L, Cordeiro I, Canas da Silva JA, Santos MJ, Cordeiro A. Nailfold capillaroscopy in rheumatology practice – a single center experience.

Posters:
Moura RA, Quaresma C, Vieira AR, Gonçalves MJ, Polido-Pereira J, Romão VC, Martins N, Canhão H, Fonseca JE. B-cell markers expression is affected by TNF-inhibitors and tocilizumab treatment in rheumatoid arthritis. (Abstract Presentation).
Ponte C, Floris A, Vaggers S, Goodfellow N, Sznajd J, O'Neill L, Piper J, Gunn J, Mankia K, Luqmani RA. The use of ultrasound in the diagnosis and management of patients with giant cell arteritis: experience of a single centre.
Duftner C, Dejaco C, Möller-Döhn U, Bruyn GA, Chrysidis S, D`Agostino MA, Dasgupta B, de Miguel E, Diamantopoulos AP, Hanova P, Hartung W, Iagnocco A, Kermani TA, Koster MJ, Macchioni P, Milchert M, Mukhtyar C, Naredo E, Ponte C, Rastalsky N, Schäfer VS, Terslev L,

Warrington KJ, Schmidt WA. UIltrasound definitions for vasculitis in cranial and large vessel giant cell arteritis: results of a delphi survey of the OMERACT ultrasound large vessel vasculitis group.

Foeldvari I, Klotsche J, Kasapcopur O, Adrovic A, Terreri MT, Stanevicha V, Katsikas MM, Alexeeva E, Sztajnbok F, Cimaz R, Kostik M, Sifuentes-Giraldo WA, Lehman T, Nemcova D, Moll M, Santos MJ, Avcin T, Battagliotti C, Brunner J, Nielsen S, Kallinich T, Minden K, Janarthanan M, Harel L, Uziel Y, Eleftheriou D, Torok KS, Helmus N. Update on the juvenile systemic sclerosis inception cohort project. Characteristics of the first 74 patients at first assessment.

Foeldvari I, Klotsche J, Kasapcopur O, Adrovic A, Terreri MT, Stanevicha V, Katsikas MM, Alexeeva E, Sztajnbok F, Cimaz R, Kostik M, Sifuentes-Giraldo WA, Lehman T, Nemcova D, Moll M, Santos MJ, Avcin T, Battagliotti C, Brunner J, Nielsen S, Kallinich T, Minden K, Janarthanan M, Harel L, Uziel Y, Eleftheriou D, Torok KS, Helmus N. Is there a difference in the presentation of diffuse and limited subtype in childhood? Results from the juvenile scleroderma inception cohort.

Foeldvari I, Klotsche J, Kasapcopur O, Adrovic A, Terreri MT, Stanevicha V, Katsikas MM, Alexeeva E, Sztajnbok F, Cimaz R, Kostik M, Sifuentes-Giraldo WA, Lehman T, Nemcova D, Moll M, Santos MJ, Avcin T, Battagliotti C, Brunner J, Nielsen S, Kallinich T, Minden K, Janarthanan M, Harel L, Uziel Y, Eleftheriou D, Torok KS, Helmus N. Is there a difference in the presentation of male and female patients with juvenile systemic sclerosis? Results from the juvenile scleroderma inception cohort.

Bone Research Society Annual Meeting 2016, Liverpool, Reino Unido; 29 Junho a 1 Julho de 2016.

Posters:

Forestier-Zhang L, Watts L, Turner A, Ponte C, Teare H, Gray D, Gray N, Popert R, Hogg J, Barrett J, Luqmani RA, Wordsworth P, Kaye J, Javaid MK. The Rare and Undiagnosed Diseases Study (RUDY) Platform – a novel approach to patient-driven research in rare musculoskeletal diseases.

10th International Congress on Spondyloarthritides, Gent, Belgium 15-17 September 2016.

Posters:

Vieira-Sousa, E., Castro, M., Samouqueiro, C., Miranda Rosa, C., Canhão H., l Tavares da Silva M., Fonseca JE. Feet biomechanics in psoriatic arthritis patients.

23rd PRES Congress; Genova, Italy, 28th September, 1st October 2016

Posters:

Teixeira V, Campanilho.Marques R., Mourão AF, Oliveira-Ramos F, Costa M. Musculoskeletal ultrasound usefulness in the diagnosis and treatment in paediatric rheumatology

Teixeira V, Oliveira-Ramos F, Costa M. Severe and refractory childhood-onset polyarteritis nodosa associated with CECR1 mutation.

Campanilho-Marques R, Deakin C., Simou S., Wedderburn L. R., Pilkington C. on behalf of Juvenile Dermatomyositis Research Group (JDRG) Efficacy and safety of Tumour Necrosis Factor-?lfa antagonists in a large cohort of Juvenile Dermatomyositis patients.

Mourão AF, Santos MJ, Eusébio M, Lopes A, Oliveira-Ramos F, Salgado M, Estanqueiro P, Melo-Gomes J, Martins F, Costa J, Furtado C, Figueira R, Brito I, Branco JC, Fonseca JE, Canhão H. Potential Biomarkers Of Disease Activity In Juvenile Idiopathic Arthritis: Data From The Portuguese Register, Reuma.Pt.

Mourão AF, Santos MJ, Eusébio M, Lopes A, Oliveira-Ramos F, Salgado M, Estanqueiro P, Melo-Gomes J, Martins F, Costa J, Furtado C, Figueira R, Brito I, Branco JC, Fonseca JE, Canhão H. Serum Receptor Activator Of Nfkb Ligand (Rankl) And Osteoprotegerin (Opg) In Juvenile Idiopathic Arthritis: Relation To Disease Activity.

10th European Workshop on Immune-Mediated Inflammatory Dieseases, Toulosse, France, 19-21st October 2016

Posters:

Moura RA, Quaresma C, Vieira AR, Gonçalves MJ, Polido-Pereira J, Romão V, Martins N, Canhão H, Fonseca JE. Effect of TNF-inhibitors and tocilizumab on B-cell phenotype and gene expression in rheumatoid arthritis.

ISPOR 19th Annual European Congress, Vienna, Austria, 29th Oct – 2nd Nov 2016

Posters:

Santos MJ. Real-world quality-adjusted life-years gains in Portuguese patients with rheumatoid arthritis following 1 year of golimumab treatment.

ACR/ARHP Annual Meeting 2016 Washington DC, USA; 16th November 2016

Chrysidis S, Duftner C, Dejaco C, Ponte C, Iagnocco A, Dasgupta B, D'Agostino MA, De Miguel E, Fredberg U, Hartung W, Hocevar A, Kermani TA, Koster MJ, Lorenzen T, Macchioni P, Milchert M, Rastalsky N, Mukhtyar C, Schaefer V, Warrington KJ, Terslev L, Bruyn GAW, Hanova P, Døhn UM, Naredo E, Scirè CA, Carrara G, Ramiro S, Diamantopoulos AP and Schmidt WA. Ultrasound definitions for cranial and large vessel giant cell arteritis: results of a reliability exercise on images and videos of the OMERACT Ultrasound large vessel vasculitis task force.

C. Deakin*, R. Campanilho-Marques*, S. Simou, L. R. Wedderburn, E. Pullenayegum, C. Pilkington. ACR – Novembro de 2016. Analysis of Efficacy and Safety of Cyclophosphamide in Juvenile Dermatomyositis Using a Large National UK Cohort.

Posters:

Courvoisier DS, Alpizar-Rodriguez D, Gottenberg JE, Iannone F, Lie E, Santos MJ, Pavelka K, Hetland ML, Turesson C, Mariette X, Choquette D, Finckh A, on behalf of PANABA. 18. Drug retention of biologics in rheumatoid arthritis patients: the role of baseline characteristics and impact of time-varying factors.

Foeldvari I, Klotsche J, Kasapcopur O, Adrovic A, Stanevicha V, Terreri MT, Alexeeva E, Katsicas MM, Cimaz R, Kostik M, Lehman T, Sifuentes-Giraldo WA, Smith V, Sztajnbok F, Avcin T, Santos MJ, Nemkova D, Battagliotti C, Eleftheriou D, Harel L, Janarthanan M, Kallinich T, Anton J, Minden K, Nielsen SM, Torok KS, Uziel Y, Helmus N. Is There a Difference in the Presentation of Diffuse and Limited Subtype in Childhood? Results from the Juvenile Scleroderma Inception Cohort

AF Mourão, MJ Santos, M Eusébio, A Lopes, F Ramos, M Salgado, P Estanqueiro, JA Melo Gomes, FM Martins, JA Costa, AC Furtado, R Figueira, I Brito, J Branco, JE Fonseca, H Canhão. Potential Biomarkers of Disease Activity in Juvenile Idiopathic Arthritis – Data from the Portuguese Register, Reuma.Pt.

Foeldvari I, Klotsche J, Kasapcopur O, Adrovic A, Stanevicha V, Terreri MT, Alexeeva E, Katsicas MM, Cimaz R, Kostik M, Lehman T, Sifuentes-Giraldo WA, Smith V, Sztajnbok F, Avcin T, Santos MJ, Nemkova D, Battagliotti C, Eleftheriou D, Harel L, Janarthanan M, Kallinich T, Anton J, Minden K, Nielsen SM, Torok KS, Uziel Y, Helmus N. Update on the Juvenile Systemic Sclerosis Inception Cohort Project. Characteristics of the First 80 Patients at First Assessment.

Foeldvari I, Klotsche J, Kasapcopur O, Adrovic A, Stanevicha V, Terreri MT, Alexeeva E, Katsicas MM, Cimaz R, Kostik M, Lehman T, Sifuentes-Giraldo WA, Smith V, Sztajnbok F, Avcin T, Santos MJ, Nemkova D, Battagliotti C, Eleftheriou D, Harel L, Janarthanan M, Kallinich T, Anton J, Minden K, Nielsen SM, Torok KS, Uziel Y, Helmus N. Medication Use in the Juvenile Systemic Sclerosis Inception Cohort. Are There Differences in the Diffuse and Limited Subset Patients?

R. Campanilho-Marques, C. Deakin, S. Simou, L. R. Wedderburn, C. Pilkington. Efficacy and safety of Tumour necrosis factor-lfa antagonists in a large cohort of Juvenile Dermatomyositis patients.

29e Congrès Français de Rhumatologie, Paris, France, 11th-13th December 2016

Posters:

Seixas MI, Teixeira V, Gonçalves MJ, Marinho RT, Fonseca JE, Macieira C. Can Direct-Acting Antiviral Agents for Chronic Hepatitis C Virus Infection induce or aggravate immune related manifestations?

Communications in National Conferences

Rheumatology in Practice. Leiria, Portugal.

Teixeira, V. Biologics discontinuation in Rheumatoid Arthritis - Retrospective analysis of reasons for discontinuation and outcomes.

XXII Jornadas de Pediatria do Departamento de Pediatria do CHLN, Lisboa, Portugal, 20 a 21 de Janeiro de 2016.

Poster:

Joana Borges, Jennifer Santos, Teresa Mirco, Teresa Fontinhas, Filipa Oliveira Ramos, Bárbara Águas, A. Siborro de Azevedo. Síndrome de Amplificação Dolorosa em Pediatria: a relevância da pluridisciplinaridade.

XVIII Congresso Português de Reumatologia, Vilamoura, Portugal, 4th-7th May 2016.

Romão VC, Gonçalves MJ, Castro A, Ponte C, Canhão H, Resende C, Pereira da Silva JA. Systemic sclerosis is associated with poor sleep quality and decreased quality of life.

Moura RA, Quaresma C, Vieira AR, Gonçalves MJ, Polido-Pereira J, Romão VC, Martins N, Canhão H, Fonseca JE. B-cell markers expression is affected by TNF-inhibitors and tocilizumab treatment in rheumatoid arthritis

MJ Gonçalves, S Moore, G Cambridge, M J Leandro. High C-Reactive Protein at Baseline is Associated with Long-term Treatment Persistence in Patients with Rheumatoid Arthritis treated with Rituximab

Mourão AF, Ribeiro C, Borges J, Gonçalves MJ, Bernardes M, Fernandes S, Dezerto R, Laires PA, Machado P, Eusébio M, Santos MJ, Canhão H. Real-life effectiveness of golimumab in biologic naïve Rheumatoid Arthritis patients – data from Reuma.pt, a Portuguese Registry

Campanilho-Marques R, Almeida B, Deakin C, Arnold K, Gallot N, de Iorio M, Nistala K, Pilkington CA, Wedderburn LR; Juvenile Dermatomyositis Research Group (JDRG) Comparison of the utility and validity of three scoring tools to detect skin disease in patients with Juvenile Dermatomyositis

Oliveira-Ramos F, Eusébio M, Martins FM, Mourão AF, Furtado C, Campanilho-Marques R, Cordeiro I, Ferreira J, Cerqueira M, Figueira R, Brito I, Canhão H, Santos MJ, Melo-Gomes JA, Fonseca JE. Juvenile Idiopathic Arthritis in adulthood: clinical pattern and long-term outcomes of 426 patients

Dinis J, Valido A., Oliveira Ramos F., Campanilho-Marques R, Roxo H.; Saraiva F.; Fonseca JE. Protóxido de azoto nas técnicas de reumatologia pediátrica: eficácia e segurança.

Sousa S, Duarte AC, Cordeiro I, Teixeira L, Canas da Silva JA, Cordeiro A, Santos MJ. Interstitial

lung disease in scleroderma portuguese patients

Clemente Coelho P, Cardoso A, Castro A, Resende C, Salvador MJ, Terroso G, Costa L, Silva I, Araújo F, Raposo A, Santos MJ. Esclerose sistémica de longa duração – precisamos de uma reclassificaçãoo dos padrões capilaroscópicos. Um estudo multicêntrico.

Mourão AF, Santos MJ, Eusébio M, Lopes A, Oliveira-Ramos f, Salgado M, Estanqueiro P, Melo-Gomes J, Martins FM, Costa J, Furtado C, Figueira R, Brito I, Branco JC, Fonseca JE, Canhão H. Serum receptor activator of NFkB ligand (RANKL) and osteoprotegerin (OPG) in Juvenile idiopathic arthritis: relation to disease activity

Rosa, CM. Human Gut Microbiome and Autoimmune rheumatic Diseases

Oliveira-Ramos F, Eusébio M, Martins FM, Mourão AF, Furtado C, Campanilho-Marques R, Cordeiro I, Ferreira J, Cerqueira M, Figueira R, Brito I, Canhão H, Maria José Santos, José A Melo-Gomes, João Eurico Fonseca. Juvenile idiopathic arthritis in adulthood: fulfilment of classification criteria for adult rheumatic diseases, long-term outcomes and predictors of inactive disease, functional status and damage

Posters:

Teixeira V., Martins N, Gonçalves MJ, Seixas MI, Saraiva F. Parasitic arthritis – are Endolimax nana and Entamoeba coli the culprits?

Teixeira V, Resende V, Lito L, Romeu JC. Haemophilus influenzae septic arthritis in the era of immunization

Teixeira V, Rosa CM, Roque M, Oliveira Ramos F, Vieira-Sousa E, Romeu JC. Inflammatory thoracic back pain in a patient with psoriasis as the initial presentation of a Takayasy arteritis

Teixeira V, Fernandes S, Oliveira Ramos F, Melo-Gomes J, Romeu JC. Síndrome do Martelo Hipotenar induzindo acrocianose persistente

Teixeira V, Martins N, Seixas MI, Saavedra MJ, Saraiva F. Is there a role for musculoskeletal ultrasound in the diagnosis of jaw osteonecrosis?

Teixeira V, Gonçalves MJ, Martins N, Vaz S, Saraiva F. Parry-Romberg Syndrome – a disease to be distinguished from morphea and many others

Teixeira V, Seixas MI, Khmelinskii N, Romeu JC. The crowned dens syndrome – 2 case reports

Teixeira V, Martins N, Seixas MI, Gonçalves MJ, Saraiva F. Man with severe recurrent housemaid's knee disease secondary to spastic tetraparesis

Ávila Ribeiro P, Macieira C, ResendeC, Ponte C, Oliveira-Ramos F, Canhão H, Polido-Pereira J, Seixas MI, Saavedra MJ, Barros R, Capela S, Romão VC, Gonçalves MJ, Khmelinskii N, Castro A, Martins N, Teixeira RL, Teixeira V, Vieira-Sousa E, Fonseca JE. Hypogammaglobulinaemia and risk of infection in patients with Rheumatoid Arthritis treated with Rituximab

Martins N, Teixeira V, Seixas MI, Gonçalves MJ, Valido A, Canhão H, Marques T, Saavedra MJ,

Fonseca JE. Esporotricose pulmonar e ganglionar associada à imunossupressão com antagonista do TNF: a propósito de um caso clínico

Romão VC, Polido-Pereira J, Vieira-Sousa E, Barros R, Saraiva F, Fonseca JE. Ultrasound-guided synovial biopsy, an emerging, minimally invasive, well-tolerated technique used in clinical practice and research: single center experience

Gonçalves MJ, Romão VC, Castro A, Ponte C, Canhão H, Resende C, Pereira da Silva JA. Restless leg syndrome prevalence is not increased in Systemic Sclerosis patients.

Vidal B, Cascão R, Finnilä M, Lopes IP, Saarakkala S, Canhão H, Fonseca JE. Analyzing the effects of early arthritis in systemic bone loss.

Castro A, Ferreira L, Moniz D, Ponte C, Resende C. Systemic Sclerosis (SSc) and Interstitial Lung Disease (ILD): Predictors of progression of ILD in patients with SSc

Cordeiro A, Ponte C, Couto M, Cordeiro I, Salvador MJ, Araújo F, Clemente Coelho P, Eusébio M, Martins FM, Santos MJ. Reuma.pt/Scl – The Portuguese registry for Scleroderma patients.

Martins N, Khmelinskii N, Teixeira RL, Ponte C, Saraiva F, Romeu JC. Osteomalácia hipofosfatémica hiperfosfatúrica induzida pela administração de carboximaltose férrica: uma doença e uma su etiologia que não podem ser esquecidas

Seixas MI, Ponte C, Fraga M, Baptista R, Marques T, Nunes da Silva MJ, Macieira C. Associação improvável entre duas patologias ou entidade única?

Duarte AC, Teixeira L, Cordeiro A, Santos MJ, Canas da Silva JÁ. Dermatomyositis and malignancy – a nonneglible relationship

Duarte AC, Cordeiro I, Cordeiro A, Santos MJ. Tocilizumab – a novel promising therapy in systemic sclerosis

Cordeiro A, Ponte C, Couto M, Cordeiro I, Salvador MJ, Araújo F, Clemente-Coelho P, Eusébio M, Martins FM, Santos MJ. Reuma.pt/Scl – the portuguese registry for scleroderma patients

Teixeira L, Duarte AC, Vinagre F, Cordeiro A, Santos MJ, Canas da Silva JÁ. Infliximab biossimilar nas doenças reumáticas

Teixeira L, Cordeiro I, Canas da Silva JA, Santos MJ, Cordeiro A. Nailfold capillaroscopy in rheumatology practice – a single center experience

Duarte AC, Sousa S, Roque R, Cordeiro A, Santos MJ. Mesenteric vasculitis in systemic lupus erythematosus

Duarte AC, Cordeiro I, Sousa S, Teixeira L, Canas da Silva JA, Cordeiro A, Santos MJ. Cardiac involvment in systemic sclerosis – a Portuguese reality

Teixeira L, Cordeiro L, Duarte AC, Sousa S, Canas da Silva JA, Cordeiro A, Santos MJ. Nailfold capillaroscopy findings in scleroderma patients – prognostic implications

Barbosa L, Cordeiro I, Cordeiro A, Santos MJ, Canas da Silva JÁ. Medications adherence in

rheumatoid arthritis and psoriatic arthritis patients.

Laires PA, Mourão AF, Ribeiro C, Borges C, Gonçalves MJ, Bernardes M, Fernandes S, Dezerto R, Eusebio M, Santos MJ, Canhão H. Real-world quality-adjusted life-years gains in portuguese patients with rheumatoid arthritis following 1 year of golimumab treatment

Duarte AC, Teixeira L, Cordeiro A, Santos MJ, Canas da Silva JÁ. Dermatomyositis and malignancy – a nonneglible relationship

Duarte AC, Cordeiro I, Cordeiro A, Santos MJ. Tocilizumab – a novel promising therapy in systemic sclerosis.

Teixeira V, Campanilho-Marques R, Mourão AF, Oliveira-Ramos F, Costa M. Musculoskeletal Ultrasound usefulness in the diagnosis and treatment in pediatric rheumatology

da Silva Dinis J, Valido A, Oliveira-Ramos F, Saavedra MJ, Fonseca JE. Rastreio da Tuberculose em crianças candidatas a terapêutica biotecnológica: estratégias e resultados

da Silva Dinis J, Valido A, Oliveira-Ramos F, Campanilho-Marques R, Roxo H, Saraiva F, Fonseca JE. Protóxido de Azoto nas técnicas de Reumatologia Pediátrica: eficácia e segurança

Pragosa H, Teixeira RL, Oliveira Ramos F, Esteves I, Magina S, Soares-de-Almeida L, Gonçalo J, Filipe P, Fonseca JE. A first report of Juvenile Psoriatic Arthritis successfully treated with ustekinumab

Pfizer Summit, Évora, Portugal, 16-17 Abril 2016

Posters:

Vieira-Sousa E-, Silva S, Cruz G, Perpétuo IP, Ribeiro PA, Khmelinskii N, Rosa CM, Canhão H, Fonseca JE. Bone metabolism in psoriatic arthritis

Vieira de Sousa E, Castro M, Samouqueiro C, Miranda Rosa C, Canhão H, Tavares da Silva M, Fonseca JE. Feet biomechanics in early psoriatic arthritis.

Workshop PADIS 2016 – Funcionamento das Unidades de Ensaios Clínicos, AESE Lisboa, Portugal, 8-10th november 2016

Costa L, Cruz J. P., Vieira-Sousa E, Guerreiro I, Plano de desenvolvimento do Centro de Investigação Clínica para o Centro Hospitalar Lisboa Norte.

Organisation of Conferences

JEFonseca Lab organizing a series of monthly talks “IMM Rheumatology Series” with leading international researchers in the field of Rheumatology.

JEFonseca organized the Workshop de discussão das recomendações da Sociedade Portuguesa de Reumatologia sobre uso do metotrexato e sobre a terapêutica da artrite reumatóide com

biológicos, Lisbon, 16th january

JEFonseca organized the World Congress on Scleroderma, Lisboa, 18-20th February

JEFonseca was the president of the scientific and organizer commissions of the XVII Congresso Português de Reumatologia, Vilamoura, 4-7th may

JEFonseca is a member of the Scientific Committee. EULAR, London, 8-11th June

JEFonseca organized the Tenth European Workshop on Immune-Mediated Inflammatory Diseases, Toulouse, 19-21st October

JEFonseca organized the Jornadas de Outono da Sociedade Portuguesa de Reumatologia, Viseu, 21-23rd October

Filipa Oliveira-Ramos was vice president of the XV Jornadas Internacionais Reumatologia Pediátrica, Lisboa, Portugal, 21-22nd April

Filipa Oliveira-Ramos co-organized the 2nd SPR course of Pediatric Rheumatology for trainees in Rheumatology, Lisboa, 15th January

Raquel Marques was member of the Organization Committee of the 2º Curso de Reumatologia Pediátrica para Internos da Sociedade Portuguesa de Reumatologia – 15th January, Lisbon, Portugal

Raquel Marques was member of the Organization Committee and Poster Session Jury of the XXIV Jornadas Internacionais do Instituto Português de Reumatologia. 25th November

Vieira-Sousa E was a member of the Scientific Committee and Co-chaired Poster Tour and Chair of Satelite Simposium, organized the Acta Reumatologica Portuguesa Meeting and the GO-DACT investigators meeting in the XVIII Congresso Português de Reumatologia, Vilamoura, 4-7 May

Vieira-Sousa E was reviewer of abstracts and co-chaired Poster Tour at the EULAR congress, London, 8-11th June

Vieira-Sousa E was the coordinator of GESPA meeting, at Jornadas de Outono, Viseu, 22 October

Internationalisation

IMM Rheumatology Series, in each session we promote site visit and project discussions with the international speakers. Coordinator: Fonseca JE.

Fonseca JE is member of the EULAR Scientific Committee and will be program chair of the following 2 European Congresses of Rheumatology.

2 post docs were working in collaborative projects involving University College London and Harvard Medical School, and being co-supervised by Fonseca JE and academics in theses centres. 1 PhD student was supervised by Fonseca JE and by a researcher from the Helsinki University.

Raquel Marques is involved in 2 multicenter research studies (Efficacy and safety of cyclophosphamide treatment in severe juvenile dermatomyositis and Development and validation of a new skin tool in Juvenile Dermatomyositis).

Vieira-Sousa E is member of the European Synovitis Study Group of EULAR.

Prizes, Honours and Awards

Fellowship "Fundo de Apoio à Investigação e Formação em Reumatologia", from Sociedade Portuguesa de Reumatologia, with the project "Is ultrasound a good surrogate marker for remission in RA? (Association of ultrasound and histological synovitis in rheumatoid arthritis patients in clinical remission)" from Joaquim Polido-Pereira.

Fellowship "Fundo de Apoio à Investigação e Formação em Reumatologia", from Sociedade Portuguesa de Reumatologia, with the project "Predictors of radiographic progression in psoriatic arthritis" from Elsa Sousa.

Fellowship "Fundo de Apoio à Investigação e Formação em Reumatologia", from Sociedade Portuguesa de Reumatologia, with the project "Blood biomarkers of synovial tissue phenotype as predictors of response of TNF inhibitors and tocilizumab in rheumatoid arthritis", from Vasco Romão.

Fellowship "Fundo de Apoio à Investigação e Formação em Reumatologia", from Sociedade Portuguesa de Reumatologia, with the project "Chronic kidney disease risk factors in systemic sclerosis: a cross-sectional study", from Maria João Gonçalves.

Prize Assunção Teixeira da Sociedade Portuguesa de Reumatologia, for the best Rehumatology article published in 2015, with the article "TRAF1/C5 but Not PTPRC Variants Are Potential Predictors of Rheumatoid Arthritis Response to Anti-Tumor Necrosis Factor Therapy", from Helena Canhão, Ana Maria Rodrigues, Maria José Santos, Diana Carmona-Fernandes, Bruno F. Bettencourt, Jing Cui, Fabiana L. Rocha, José Canas Silva, Joaquim Polido-Pereira, José Alberto Pereira Silva, José António Costa, Domingos Araujo, Cândida Silva, Helena Santos, Cátia Duarte, Rafael Cáliz, Ileana Filipescu, Fernando Pimentel-Santos, Jaime Branco, Juan Sainz, Robert M. Plenge, Daniel H. Solomon, Jácome Bruges-Armas, José António P. Da Silva, João Eurico Fonseca, and Elizabeth W. Karlson.

Prize EULAR Best Clinical Abstract Award, with the abstract “New Treatment Offers Hope for Children with Debilitating Skin and Muscle Disease”, from Raquel Marques.

Prize 19º Programa “Educação pela Ciência”, GAPIC, Faculdade de Medicina de Lisboa, with the project “Predictors of radiographic progression in psoriatic arthritis patients”, from Gerson Cruz and Elsa Sousa.

Honourable Mention Janssen Inovação 2016, for the work “Reuma.pt contribution to the knowledge of immune-mediated systemic rheumatic diseases”.

Prize for the best oral presentation in XVIII Congresso Português de Reumatologia with the study "Juvenile idiopathic arthritis in adulthood: fulfilment of classification criteria for adult rheumatic diseases, long-term outcomes and predictors of inactive disease, functional status and damage". Oliveira-Ramos F, Eusébio M, Martins FM, Mourão AF, Furtado C, Campanilho-Marques R, Cordeiro I, Ferreira J, Cerqueira M, Figueira R, Brito I, Canhão H, Santos MJ, Mello-Gomes JA, Fonseca JE.

Prize for the best oral presentation in XV Jornadas Internacionais Reumatologia Pediátrica with the study "Rastreio da Tuberculose em crianças candidatas a terapêutica biotecnológica: estratégias e resultados" da Silva Dinis J, Valido A, Oliveira-Ramos F, Saavedra MJ, Fonseca JE.

Prize Best Poster of Clinical Report in XVIII Congresso Português de Reumatologia, 2016, with “Osteomalácia Hipofosfatémica Hiperfosfatúrica induzida pela administração de carboximaltose férrica: uma doença rara e uma sua etiologia que não podem ser esquecidas”. Martins N, Khmelinskii N, Teixeira RL, Ponte C, Saraiva F, Romeu JC.

Prize Best Image in XVIII Congresso Português de Reumatologia, 2016, with “The crowned dens syndrome – 2 case reports”, Teixeira V, Seixas MI, Khmelinskii N, Romeu JC.

Prize “Investigador do mês” from the magazine “Prevenir” nº130, August 2016, to Raquel Campanilho-Marques.

Industry Contract Research

JEFonseca lab projects are supported by unrestricted research grants from industry. We will start also a clinical trial funded by Industry.

Advanced Teaching

Curso de reumatologia pediátrica para internos de reumatologia, Lisbon, Portugal, 15th January 2016.
Santos MJ. Doenças Difusas do Tecido Conjuntivo Juvenis.
Raquel Marques. Vasculites Juvenis.

2016 Lisbon BioMed PhD Program, Lisbon, Portugal, February 2016.
Fonseca JE. Inflammasome: how does it fit in chronic arthritis?

12º Curso de Pós-Graduação e Medicina Desportiva, Lisbon, 27 February 2016.
Vieira-Sousa E. "Stress oxidativo; antioxidantes; Acidose láctica; Bomba ATPase sódio, potássio".

X IMM/CAML PhD Meeting, Lisbon, Portugal, March 30,31st and April 1st, 2016.
Inês Leal, J.E. Fonseca, C.M. Neves. The role of certolizumab in non-infectious uveitis.
Ana Maria Rodrigues. Differences of bone Wnt regulators expression between fragility fractures and osteoarthritis patients.
Elsa Sousa. Linking biomechanics, inflammation and bone formation in psoriatic arthritis.

Curso de Investigação Clínica" para internos do SESARAM, Funchal, Portugal, 13-15th june 2016.
Santos MJ. Módulo sobre investigação.

Curso Pós-Graduado de Metodologias de Investigação Clínica, Lisbon, Portugal, 13th october 2016.
Santos MJ. Registos e large database management.

2º Curso de Reumatologia Pediátrica, Lisbon, Portugal, 14-15th ocotber 2016.
Santos MJ. Esclerodermias.

Curso de Pós-Graduação em Metodologias para a Investigação Clínica, Lisboa, 18 de Outubro, 2016.
Vieira-Sousa E. "GO-DACT an example of an investigator iniciated trial".

2ª Edição da Pós-Graduação em Medicina Laboratorial, Universidade Católica Portuguesa, Lisbon, Portugal, 17th December 2016.
Fonseca JE. Doenças Inflamatórias Articulares.
Oliveira-Ramos F. Doenças Autoinflamatórias.

Science and Society

João Eurico Fonseca participated, in several TV programs and radio programs to talk about rheumatic diseases, clinical trials and translational research. Filipa Oliveira Ramos participated in the TV program "Diário da Manhã" talking about Pediatric Rheumatology (15th January 2016) and in radio program (TSF) "Pais e filhos" talking about Juvenile Rheumatic Diseases (10th January 2016).

Filipa Oliveira Ramos co-organized a Juvenile Arthritis Educational Summer Camp and gave medical support to the participants (10-16th July, 2016).

Raquel Marques participated on the TV morning Journal News (TVI TV-channel) talking about anti-TNF therapy in Juvenile Dermatomyositis.

Raquel Marques participated in a video interview (June 10th 2016) requested by the EULAR Congress News about the research conducted on anti-TNF therapy in Juvenile Dermatomyositis and the awarded prize.

Raquel Marques gave an interview for Medscape (June 11th 2016) about the research conducted on anti-TNF therapy in Juvenile Dermatomyositis and the awarded prize.

PhD Thesis Completed

Inês Pedro Perpétuo 03/10/2016 Differences in osteoclast activity between rheumatoid arthritis and ankylosing spondylitis. Faculdade de Medicina da Universidade de Lisboa João Eurio Fonseca.

MSc Thesis Completed

Ana Raquel Conduto Dias 04/11/2016 Preclinical development of a new compound for the treatment of arthritis Faculdade De Ciências da Universidade De Lisboa Rita Cascão.

Ânia Robim Costa e Sousa 17/11/2016 Efficacy and toxicity evaluation of celastrol in adjuvant-induced arthritis rat model Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa Rita Cascão.

Franco, Cláudio

Major Interests / Objectives

The Vascular Morphogenesis Lab has the aim to understand the molecular mechanisms regulating coordinated endothelial cell behaviour during sprouting and remodelling phases of the angiogenic process. Improving the knowledge on the molecular regulation of vascular morphogenesis will certainly create new possibilities for medical prevention and treatment of various human conditions.

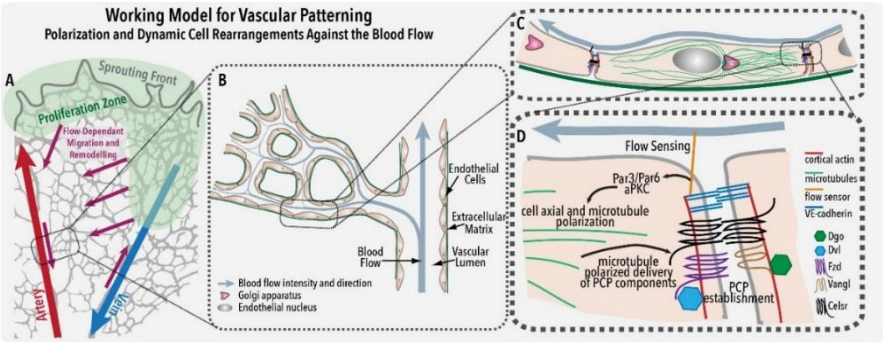
We want to:

- Finding novel regulators of endothelial cell migration in sprouting angiogenesis;
- Molecular regulation of endothelial cell axial polarity;
- Effects of haemodynamic forces in vascular patterning;
- Novel anti-angiogenic therapies blocking tumour angiogenesis.

Head of Laboratory

Claudio Areias Franco, PhD.

Graphical Abstract



Research Team

Aida Andreia Pereira Pires Lima	Master	MSc Student
Ana Alexandra Baptista Martins Moutinho Russo	Graduate	MSc Student
Ana Sofia Conceição Fernandes	No Degree	Lab Manager (Started September)
Catarina Gonçalves Fonseca	Master	Technician
Felícia Margarida Correia Fonseca Lopes	Graduate	MSc Student (Left June)
Isabela Corina Santos Fortunato	Undergraduate	Undergraduate (Started June - Left September)
Joana Cristina Reino Carvalho	Master	PhD Student, NA
Pedro Miguel Branco Barbacena	Master	PhD Student

Laboratory Keywords / Research Areas

Angiogenesis, cell migration, tumor angiogenesis, endothelial cells, vascular patterning.

Major Scientific Achievements

Cláudio Franco Lab in 2016 published 6 articles in prestigious journals including Nature, Cell Reports, and eLIFE. As novel discoveries, we identified that non-canonical Wnt signaling regulates the sensitivity of endothelial cells to blood flow, and influences the capacity of endothelial cells to polarize against the blood flow direction. This propriety is key for vascular remodeling, a process that leads to the hierarchical structure of blood vessels. Further, in collaboration with other groups, we showed that PKN2, a kinase, plays a central role in early embryogenesis; and that FOXO1, a transcription factor, is essential for restrict endothelial cell proliferation and thus quiescence of the endothelium. 2 Master students successfully defended their thesis, and were awarded a Master degree.

Selected Publications

Franco CA, Jones M, Geudens I, Bernabeu MO, Ragab A, Collins RT, Phng LK, Coveney PV, Gerhardt H. (2015) Dynamic endothelial cell rearrangements drive developmental vessel regression. PLoS Biology 13, e1002163. (Journal IF: 8.68, Citations: 28).

Bentley K, Franco CA, Philippides A, Blanco R, Dierkes M, Gebala V, Stanchi F, Jones J, Cagna G, Kutschera S, Claesson-Welsh L, Vestweber D, Gerhardt H. (2014) The role of differential VE-cadherin dynamics in cell rearrangement during angiogenesis. Nature Cell Biology 16, 309-21. http://www.nature.com/ncb/journal/v16/n4/full/ncb2926.html. (Journal IF: 18.69, Citations: 98).

Guarani V, Deflorian G*, Franco CA*, Krüger M, Phng LK, Bentley K, Toussaint L, Dequiedt F, Mostoslavsky R, Schmidt MH, Zimmermann B, Brandes RP, Mione M, Westphal CH, Braun T, Zeiher AM, Gerhardt H, Dimmeler S, Potente M. *co-second. (2011) Acetylation-dependent regulation of endothelial Notch signalling by the SIRT1 deacetylase. Nature 473, 234-8. (Journal IF: 38.13, Citations: 199).

Stenzel D*, Franco CA*, Estrach S, Mettouchi A, Sauvaget D, Rosewell I, Schertel A, Armer H, Domogatskaya A, Rodin S, Tryggvason K, Collinson L, Sorokin L, Gerhardt H. * co-first. (2011)

Endothelial basement membrane limits tip cell formation by inducing Dll4/Notch signalling in vivo. EMBO reports 12, 1135-43. (Journal IF: 7.7, Citations: 80).

Jakobsson L, Franco CA, Bentley K, Collins RT, Ponsioen B, Aspalter IM, Rosewell I, Busse M, Thurston G, Medvinsky A, Schulte-Merker S, Gerhardt H. (2010) Endothelial cells dynamically compete for the tip cell position during angiogenic sprouting. Nature Cell Biology 10, 943-53. (Journal IF: 18.69, Citations: 432).

Ongoing Research Projects

2013/2018: Exploratório - IFCT. Coordinator: Claudio Areias Franco. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: Exploratório Cláudio Franco. Amount: 50000.00. Amount (total): 50000.00.

2016/2021: PRINCIPLES OF AXIAL POLARITY-DRIVEN. Coordinator: Claudio Areias Franco. Agency: Comissão Europeia. Reference: ERC - AXIAL.EC. Amount: 1618750.00. Amount (total): 1618750.00.

Other Projects

2016/2019: Participation in PRECISE Project – Programa de Atividades Conjuntas – Project number 016394 Precise (Promoção do avanço significativo do conhecimento na área de medicina de precisão e sua translação para benefício da sociedade), financed by the Comissão Diretiva do Programa Operacional Regional de Lisboa and by Fundação para a Ciência e a Tecnologia, I.P. Coordinator: Maria Carmo-Fonseca.

2016/2018: Participation in the project “Towards outstanding research and training in tumour”. Coordinator: Edgar Rodrigues Almeida Gomes. Agency: Comissão Europeia. Reference: Twinning - ReTuBi.

Publications in Peer Review Journals

Yang L., Bernabeu MO, Lammer J, Cai CC, Jones ML, Franco CA, Aiello LP, Sun JK. (2016). Computational Fluid Dynamics Assisted Characterization of Parafoveal Hemodynamics in Normal and Diabetic Eyes using Adaptive Optics Scanning Laser Ophthalmoscopy. Biomed. Opt. Express Dec 01;7(12):4948-63. (Journal IF: 3.65, Citations: 0).

Franco CA and Gerhardt H. Blood flow boosts BMP signaling to keep vessels in shape. (2016). J Cell Biol. Sep 26;214(7):793-5. (Report spotlight). (Journal IF: 9.83, Citations: 0).

Barbacena P, Carvalho JR, Franco CA. Endothelial cell dynamics in vascular remodelling. (2016). Clin Hemorheol Microcirc. 64(4):557-563. (Review). (Journal IF: 1.82, Citations: 2).

Franco CA, Jones ML, Bernabeu MO, Vion AC, Barbacena P, Fan J, Mathivet T, Fonseca CG, Ragab A, Yamaguchi TP, Coveney PV, Lang RA, Gerhardt H. (2016). Non-canonical Wnt signaling modulates the endothelial shear stress flow sensor in vascular remodeling. eLIFE Feb 4;5. pii: e07727. (Journal IF: 8.30, Citations: 8).

Quetier I, Marshall JJT, Spencer Dene B, Lachmann S, Casamassima A, Franco CA, Escuin S, Worrall JT, Baskaran P, Rajeeve V, Howell M, Copp AJ, Stamp G, Rosewell I, Cutillas P, Gerhardt H, Parker PJ, Cameron AJM. (2016). Knockout of the PKN family of Rho effector kinases reveals a non-redundant role for PKN2 in developmental mesoderm expansion. CELL Reports Jan 26;14(3):440-8. (Journal IF: 7.87, Citations: 2).

Wilhelm K, Happel K, Eelen G, Schoors S, Oellerich MF, Lim R, Zimmermann B, Aspalter IM, Franco CA, Boettger T, Braun T, Fruttiger M, Rajewsky K, Keller C, Brüning JC, Gerhardt H, Carmeliet P, Potente M. (2016). FOXO1 couples metabolic activity and growth state in the vascular endothelium. Nature. Jan 14;529(7585):216-20. (Journal IF: 38.13, Citations: 30).

Invited Lectures and Seminars

Franco CA. Cell Dynamics in Vascular Morphogenesis. IST, Lisbon-Portugal, December, 2016.

Franco CA. Forcing Endothelial Cells to Behave Collectively. IFOM, Milan-Italy, December, 2016.

Franco CA. Regulating Collective Behaviour in Endothelial Cells. CEDOC. Lisbon-Portugal, October, 2016.

Franco CA. Regulating Collective Behaviour in Endothelial Cells. IBDM. Marseille-France, October, 2016.

Franco CA. Endothelial Cell Dynamics in Vascular Morphogenesis. FMUP, Porto-Portugal, May, 2016.

Franco CA. Endothelial Cell Dynamics in Vascular Morphogenesis. Institut Curie, Paris-France, May, 2016.

Franco CA. Of Blood Flow Patterns, Endothelial Cell Polarization and Vascular Remodeling. IGC, Oeiras-Portugal, February, 2016.

Communications in International Conferences

Franco CA. Regulating Collective Behaviour in Endothelial Cells. Cancer Cell Migration in Space and Time - ReTuBi Conference. Lisbon-Portugal, September, 2016.

Franco CA. Regulating Endothelial Cell Behaviour in Vascular Morphogenesis. 5th International Iberian Biophysics Congress. Porto-Portugal, June 2016.

Franco CA. Regulating Endothelial Cell Behaviour in Vascular Morphogenesis. 18th Conference ESCHM. Lisbon-Portugal, June 2016.

Organisation of Conferences

Franco CA. Organizer of the Conference on Cancer Cell Migration in Space and Time - ReTuBi Conference. Lisbon-Portugal, September, 2016.

Franco CA. Organizer of the Workshop on Advanced Light Microscopy. iMM. Lisbon-Portugal, September, 2016.

Advanced Teaching

Franco CA. IMM PhD Course, Lisbon-Portugal, January, 2016.

Franco CA. IGC PhD Course, Oeiras-Portugal, February, 2016.

MSc Thesis Completed

Felicia Margarida Correi da Fonseca Lopes 14/06/2016 Easy Embryonic Stem Cell: A new tool to manipulate gene expression in embryoid bodies Faculdade de Ciencias da Universidade de Lisboa Claudio A. Franco.

Ana Alexandra Russo 18/11/2016 3D visaulization of tissue specific vascular patterns for endothelial cell polarity analysis Faculdade de Ciencias da Universidade de Lisboa Claudio A Franco.

Gomes, Edgar

Major Interests / Objectives

Connecting the nucleus to the cytoskeleton is relevant for multiple cellular processes and disruption of these connections result in multiple pathologies. Nuclear positioning within cell cytoplasm requires the connection between the nucleus and the cytoskeleton. We are interested in understanding the processes involved in these connections and the role for nuclear positioning in cell function. We study cell migration and skeletal myofiber formation which involves the connection between the nucleus and the cytoskeleton and precise nuclear positioning. We use different molecular and cellular approaches in combination with time-lapse imaging analysis to address these questions.

Head of Laboratory

Edgar Rodrigues Almeida Gomes, PhD

Research Team

Anna Pezzarossa	PhD	Technician
Cátia Alexandra da Silva Janota	Master	PhD Student
Cátia Alexandra Rebelo de Almeida	Undergraduate	Undergraduate
Cecília Manuela Antão Da Silva	Master	Administrative (Left January)
Cheila Pereira Almeida	Master	Administrative (Started June - Left November)
Francisco Javier Calero Cuenca	PhD	Post-Doctoral Investigator (Started July)
Graciano Silva Leal	PhD	Post-Doctoral Investigator (Started May)
João Pedro Nunes Paulo da Silva Martins	Master	Investigator (Started November)
Liliana Leonor Miranda Bento	Master	Project Manager (Started December)
Mafalda Ramos de Melo Pimentel	Master	PhD Student
Maria Judite Sousa Costa	PhD	Post-Doctoral Investigator
Patrícia Alexandra Brito da Costa	PhD	Post-Doctoral Investigator
Sara Raquel Reis de Oliveira	PhD	Investigator (Started November)
Sara Sofia Gasalho Ferreira	Graduate	Technician (Started April)
Telma Cristina Lourenço Carrilho	Master	Lab Manager
William Roman	PhD	PhD Student

Laboratory Keywords / Research Areas

Skeletal Muscle, Cell Migration, Cell Biology, Cytoskeleton.

Selected Publications

D'Alessandro, M., Hnia, K., Gache, V., Koch, C., Gavriilidis, C., Rodriguez, D., Nicot, A.-S., Romero, N.B., Schwab, Y., Gomes, E.R., Labouesse, M., Laporte, J. (2015) Amphiphysin 2 Orchestrates Nucleus Positioning and Shape by Linking the Nuclear Envelope to the Actin and Microtubule Cytoskeleton. Developmental Cell 35, 186. (Journal IF: 9.7, Citations: 2).

Sestina Falcone, William Roman, Karim Hnia, Vincent Gache, Nathalie Didier, Jeanne Lainé, Frederic Aurade, Isabelle Marty, Ichizo Nishino, Nicolas Charlet-Berguerand, Norma Romero, Giovanna Marazzi, David Sassoon, Jocelyn Laporte, Edgar R. Gomes. 6, 1455–1475 (2014) (2014) N-WASP is required for Amphiphysin-2/BIN1 dependent nuclear positioning and triad organization in skeletal muscle and is involved in the pathophysiology of centronuclear myopathy. EMBO Mol Med 6, 1455. http://embomolmed.embopress.org/content/6/11/1455.long. (Journal IF: 8.245, Citations: 1).

Cadot, B., Gache, V., and Gomes, E.R. (2014) Fast, Multi-Dimensional and Simultaneous Kymograph-Like Particle Dynamics (SkyPad) Analysis. Plos ONE http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0089073. (Journal IF: 3.5, Citations: 0).

Metzger, T., Gache, V., Xu, M., Cadot, B., Folker, E., Richardson, B., Gomes, E.R.*, Baylies, M.K.*. (2012) MAP and Kinesin dependent nuclear positioning is required for skeletal muscle function. Nature 484, 120. (Journal IF: 41.45, Citations: 52) *co-corresponding authors.

Luxton GW*, Gomes ER*, Folker ES, Vintinner E, Gundersen GG. (2010) Linear arrays of nuclear envelope proteins harness retrograde actin flow for nuclear movement. Science 329, 5994. (Journal IF: 32.4, Citations: 140).

Ongoing Research Projects

2014/2019: Exploratório - IFCT. Coordinator: Edgar Rodrigues Almeida Gomes. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: Exploratório Edgar Gomes. Amount: 50000.00. Amount (total): 50000.00.

2014/2019: Exploratório - IFCT. Coordinator: Edgar Rodrigues Almeida Gomes. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: Exploratório Edgar Gomes. Amount: 50000.00. Amount (total): 50000.00.

2014/2019: Positioning the nucleus for cell migration and muscle fiber function - GA617676 - ERC. Coordinator: Edgar Rodrigues Almeida Gomes. Agency: Comissão Europeia. Reference: ERC - PhONICs. Amount: 1968000.00. Amount (total): 1968000.00.

2016/2018: A novel muscle disorders 3D in vitro system for drug screening and validation. Coordinator: Edgar Rodrigues Almeida Gomes. Agency: Comissão Europeia. Reference: ERC-PoC-2015. Amount: 150000.00. Amount (total): 150000.00.

2016/2018: Towards outstanding research and training in tumour. Coordinator: Edgar Rodrigues Almeida Gomes. Agency: Comissão Europeia. Reference: Twinning - ReTuBi. Amount: 788725.00. Amount (total): 999975.00.

Other Projects

2016/2019: Participation in PRECISE Project – Programa de Atividades Conjuntas – Project number 016394 Precise (Promoção do avanço significativo do conhecimento na área de medicina de precisão e sua translação para benefício da sociedade), financed by the Comissão Diretiva do Programa Operacional Regional de Lisboa and by Fundação para a Ciência e a Tecnologia, I.P. Coordinator: Maria Carmo-Fonseca.

Publications in Peer Review Journals

Vilmont, V., Cadot, B., Ouanounou, G. & Gomes, E. R. (2016) A system to study mechanisms of neuromuscular junction development and maintenance. Development. (IF: 6.059).

Vilmont, V., Cadot, B., Vezin, E., Le Grand, F. & Gomes, E. R. (2016). Dynein disruption perturbs post-synaptic components and contributes to impaired MuSK clustering at the NMJ: implication in ALS. Sci Rep 6, 27804 (IF: 5.525).

Invited Lectures and Seminars

Gomes, E. R., “Moving nuclei to the periphery of myofibers”, DKFZ, Heidelberg, Germany, May 2016.

Gomes, E. R., “Moving nuclei to the periphery of myofibers”, CEDOC, Lisbon, Portugal, May2016.

Gomes, E. R., “Moving nuclei to the periphery of myofibers”, CRG, Barcelona, Junho 2016.

Communications in International Conferences

Gomes, E. R., “Moving nuclei to the periphery of myofibers”, Myology 2016, March 2016, France.

Gomes, E. R., “Moving nuclei to the periphery of myofibers”, The Batsheva de Rothscild Workshop on Skeletal and Cardiac Myogenesis, March 2016, Israel.

Gomes, E. R., “Moving nuclei to the periphery of myofibers”, EMBO YIP, May 2016, Germany.

Gomes, E. R., “Moving nuclei to the periphery of myofibers”, EMBO Young Scientists' Forum 2016, September 2016, Portugal.

Organisation of Conferences

Scientific coordinator of FMUL/IMM institutional lectures (Monday Lectures).

Advanced Teaching

Gomes, E., was the coordinator of Cell & Developmental Biology Week, Lisbon BioMed PhD Program - Towards a Creative and Critical Mind, Jan 2017.

Gomes, E., gave course "Positioning the nucleus for cell migration and muscle fiber development." Lisbon BioMed PhD Program - Towards a Creative and Critical Mind, Jan 2016.

Gomes, E., gave course "Positioning the nucleus for cell migration and muscle fiber development." Gulbenkian Institute PhD course, Oeiras, Portugal Jan 2016.

Gomes, E., deu aulas na Unidade curricular de Tecidos Células e Moléculas na NOVA Medical School: Citoesqueleto I - Microtúbulos, 3/10/2016 Citoesqueleto II - Microfilamentos e Filamentos Intermédios, 4/10/2016.

PhD Thesis Completed

William Roman 28/09/2016 Positioning nuclei at the periphery of skeletal muscle cells UPMC and Freie Universitat Edgar Gomes Simone Spuler.

MSc Thesis Completed

João Martins 11/10/2016 Nuclear movement to the periphery of skeletal muscle cells Faculdade de Ciências e Tecnologia da Universidade Nova de Lisboa Edgar Gomes.

Graça, Luís

Major Interests / Objectives

Our Unit studies mechanisms underlying induction and maintenance of immune tolerance. In other words, we research methods to reprogramme the immune response in situations where the immune system is causing a disease, such as allergy, autoimmunity and transplant rejection.

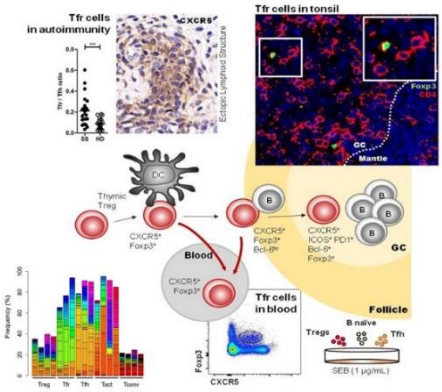
In addition, we are interested in defining the functional properties of lymphocytes that can promote immune tolerance by suppressing pathogenic immune responses. We have been studying how different types of lymphocytes with regulatory function can be induced in the periphery.

We believe that in the foreseeable future antibody therapy, as well as other strategies to modulate the immune system, will have an important repercussion in the quality of life of people suffering from immune mediated diseases.

Head of Laboratory

Luís Graça, MD/PhD, Associate Professor

Graphical Abstract



Research Team

Ana Água-Doce	PhD	Post-Doctoral Investigator
Ana Isabel Neves de Matos	Master	Investigator
Ana Raquel Maceiras Oliveira	Master	PhD Student
Carina Sofia Gonçalves Peres	Master	PhD Student
Carlos Barata da Silva	Graduate	Investigator (Started July)
Patrícia Isabel Figueiredo Campos	Graduate	MSc Student

Raquel Filipa Reis de Freitas	Master	PhD Student
Ruy Miguel Sousa Soeiro de Figueiredo Ribeiro	PhD	Principal Investigator
Sara Mulenas Sá de Matos	Maser	Lab Manager (Left June)
Saumya Dileep Kumar	Master	PhD Student (Started May)
Sílvia Cristina de Paiva e Almeida	PhD	Post-Doctoral Investigator
Válter Bruno Ribeiro Fonseca	Master	PhD Student, Physician and Teaching Assistant
Vanessa Alexandra Gonçalves de Oliveira Martins	PhD	Post-Doctoral Investigator
Yaquelin Ortiz Miranda	Graduate	PhD Student

Laboratory Keywords / Research Areas

Immune tolerance, Regulatory T Cell Subsets, T Follicular Helper (Tfh) Cells, Allergy, Autoimmunity, Transplantation.

Major Scientific Achievements

We found Tfh and Tfr cells in the same germinal center differ in their TCR usage: Tfh cells are specific to the immunizing antigen, and Tfr cells retain a TCR specificity similar to Tregs. These results suggest Tfh cells select high-affinity BCRs during affinity maturation, while Tfrs prevent autoimmunity.

We established, using human samples, that human circulating Tfr cells are generated in lymphoid tissues following exposure to antigens, and are not fully mature.

We established adoptive transfer of Foxp3+ iNKT cells, due to CXCR6-mediated preferential hepatic homing, leads to liver-specific immune suppression allowing long-term survival of allogeneic islet transplants delivered through intra-portal route in mice.

Finally, we have started a number of clinical studies regarding the impact of Tfh subsets in antibody-mediated human diseases.

Selected Publications

Oliveira VG, Água-Doce A, Curotto de Lafaille MA, Lafaille JJ, Graça L. (2013) Adjuvant facilitates tolerance induction to factor VIII in hemophilic mice through a Foxp3-independent mechanism that relies on IL-10. Blood 121, 3936. (Journal IF: 9.775, Citations: 9).

Monteiro M, Almeida CF, Água-Doce A, Graça L. (2013) Induced IL-17-producing invariant NKT cells require activation in presence of TGF-? and IL-1. J Immunol. 190, 805. (Journal IF: 5.362, Citations: 29).

Oliveira VG, Caridade M, Paiva RS, Demengeot J, Graça L. (2011) Sub-optimal CD4+ T-cell activation triggers autonomous TGF-dependent conversion to Foxp3+ regulatory T cells. Eur J Immunol. 41, 1249. (Journal IF: 4.518, Citations: 34).

Wollenberg I, Água-Doce A, Hernández A, Almeida C, Oliveira VG, Faro J, Graça L. (2011) Regulation of the germinal center reaction by Foxp3+ follicular regulatory T cells. J Immunol. 187, 4553. (Journal IF: 5.362, Citations: 145).

Monteiro M, Almeida CF, Caridade M, Ribot JC, Duarte J, Água-Doce A, Wollenberg I, Silva-Santos B, Graça L. (2010) Identification of Regulatory Foxp3+ Invariant NKT Cells Induced by TGF. J Immunol. 185, 2157. (Journal IF: 5.362, Citations: 76).

Ongoing Research Projects

2015/2018: Perfil de transcrição genética de células T foliculares (Tfh) e mudança isotípica de células B induzida por adjuvantes do tipo 1 ou tipo 2. Coordinator: Luís Graça. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: FAPESP/19906/2014. Amount: 200000.00. Amount (total): 200000.00.

2015/2019: European Network linking informatics and genomics of helper T cells. Coordinator: Luís Graça. Agency: Comissão Europeia. Reference: ENLIGHT-TEN. Amount: 433512.72. Amount (total): 3354685.20.

2015/2017: Targeting Germinal Centre Dysregulation in Allergy. Coordinator: Luis Graça. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: HMSP-ICT/0034/2013. Amount: 180672.00. Amount (total): 300000.00.

2015/2018: Immune modulatory activity of CD6-targeting monoclonal antibodies. Coordinator: Luis Graça. Agency: Center of Molecular Immunology. Reference: CUBA - CD6. Amount: 43700.00. Amount (total): 0.00.

2014/2016: ECBIO II. Coordinator: Luis Graça. Agency: ECBio, S.A. Reference: ECBIO II. Amount: 15000.00. Amount (total): 15000.00.

2015/2018: Estratégia multidisciplinar para o desenvolvimento de um nanosistema múltiplo para modulação de resposta imunológica. Coordinator: Luis Graça. Agency: Fundação para a Ciência e a Tecnologia, IP. Coordinator Institution: 0. Reference: UTAP-ICDT/DTP-FTO/0016/2014. Amount: 27000.00. Amount (total): 189274.00.

2016/2016: N.A. Coordinator: Luis Graça. Agency: Stab Vida, Lda. Reference: STAB VIDA - Serviços. Amount: 664.20. Amount (total): 0.00.

2016/2019: Immunomodulatory effect of CD6-targeting in neuroinflammation. Coordinator: Vanessa Alexandra Gonçalves de Oliveira Martins. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/DTP-FTO/3080/2014. Amount: 162488.00. Amount (total): 193092.00.

2016/2019: Mecanismos usados em células T foliculares (Tfh) para determinar o isótipo de anticorpos em respostas Th1 versus Th2. Coordinator: Sílvia Cristina de Paiva e Almeida. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/IMI-IMU/7038/2014. Amount: 199971.00. Amount (total): 0.00.

Other Projects

2016/2018: Participation in project TWINNING (H2020) "Unleash iMM's research excellence in immunity and infection through twinning to infect Lisbon and Portugal with its increase in competitiveness and innovation" – TwinToInfect, financed by the European Commission. Coordinator: Maria M. Mota.

Publications in Peer Review Journals

Almeida SCP, Graça L (2016) IL-9 production by nonconventional T helper cells. Methods Mol Biol. In press. (Journal IF: 0.429).

Bárcia RN, Santos JM, Teixeira M, Filipe M, Pereira ARS, Ministro A, Água-Doce A, Carvalheiro M, Gaspar MM, Miranda JP, Graça L, Simões S, Santos SCR, Cruz P, Cruz H (2016) Umbilical cord tissue-derived mesenchymal stromal cells are able to maintain the immunomodulatory and angiogenic potencies after cryopreservation and subsequent thawing. Cytotherapy. 19: 360-370. (Journal IF: 3.625, Citations: 0).

Peres C, Matos AI, Conniot J, Sainz V, Zupani E, Silva JM, Graça L, Gaspar RS, Préat V, Florindo H (2016) Poly (lactic acid)-based nanosystems are promising tools for immune modulation. Acta Biomaterialia. 2016 Dec 28. pii: S1465-3249(16)30587-4. doi: 10.1016/j.jcyt.2016.11.008. (Journal IF: 6.008, Citations: 0).

Invited Lectures and Seminars

Graça, L. T follicular regulatory cells. European Midwinter Workshop 2016, Angerer Alm, Austria, January 13-15 2016.

Graça, L. Immune checkpoint blockade. Instituto Português de Oncologia, Porto, Portugal, January 29 2016.

Graça, L. Induction and maintenance of immune tolerance. CEDOC, Lisbon, Portugal, February 3 2016.

Graça, L. Making and Breaking immune tolerance. Instituto interdisciplinar, University of Lisbon, Lisbon, Portugal, March 7 2016.

Graça, L. Regulation of the immune response: the delicate balance between health and disease. University of Aveiro, Aveiro, Portugal May 25 2016.

Graça, L. Advances in immune regulation. Center for Molecular Immunology, Havana, Cuba, October 24 2016.

Communications in International Conferences

Maceiras AR, Almeida SCP, Mariotti Ferrandiz E, Chaara W, Jebbawi F, Six A, Klatzmann D, Faro J, Graça L. Different TCR specificity requirements in T follicular helper and T follicular regulatory cells from the same germinal centers. Keystone Symposia on Follicular Helper Cells and Germinal Centers, Monterey, CA, USA. February 26 - March 1 2016 (Poster and Oral Presentation).

Fonseca VR, Água-Doce A, Graça L. T follicular helper cell subsets in blood and salivary glands in Sjögren's syndrome. Keystone Symposia Conference: T Follicular Helper Cells and Germinal Centers. Monterey, USA, 2016 (Poster Presentation).

Kumar S, Transcriptional profile of T follicular helper (Tfh) cells under type 1 and type 2 conditions (Oral). Enlight-ten Annunal meeting, Rade Germany (2016).

Kumar S, Transcriptional profile of T follicular helper (Tfh) cells under type 1 and type 2 conditions (oral, flash talks). Enlight-ten Summer School, University of Turku, Finland (2016).

Peres C, Matos AI, Viana AS, Graça L, Préat V, Florindo HF. Nanoparticle-based cancer vaccine to target dendritic cells and the tumor microenvironment. 41st Federation of European Biochemical Societies (FEBS) congress. Ephesus/Kuadas, Turkey; 3rd – 8th of September 2016 (cancelled due to external factors).

Peres C, Matos AI, Viana AS, Graça L, Préat V, Florindo HF. Nanoparticle-based cancer vaccine to target dendritic cells and the tumor microenvironment. 16th FEBS Young Scientists' Forum. Ephesus/Kuadas, Turkey; 3rd – 8th of September 2016 (cancelled due to external factors).

Peres C, Silva JM, Moura L, Graça L, Gaspar R, Préat V, Florindo HF. Melanoma cancer vaccine based on multifunctional nanoparticles for antigen delivery and immunomodulation. XI Spanish-Portuguese Conference on Controlled Drug Delivery "Revolutionary Approaches in Nanomedicine Development". Granada, Spain; 21st – 23rd of January 2016.

Peres C, Matos AI, Conniot J, Sainz V, Graça L, Préat V, Florindo HF. Multicomponent nanoparticles for vaccine delivery and immunomodulation. Molecular and Supramolecular Carriers for Imaging and Therapy Conference, FP7-PEOPLE-2012-ITN - Marie-Curie Action: "Initial Training Networks", Lisbon, Portugal; 13-15th of July 2015.

Peres C, Sainz V, Matos AI, Viana AS, Moura L, Graça L, Préat V, Florindo HF. Multicomponent aliphatic polyester-based nanoparticles for antigen delivery and immune modulation against cancer disease. NanoBio&Med2016, Barcelona, Spain; 22nd-24th of November 2016.

Peres C, Matos AI, Santos AC, Viana AS, Wagner AM, Vela J, Gonçalves J, Peppas NA, Graça L, Gaspar RS, Préat V, Florindo HF. Polymeric nanoparticle-based vaccine to target dendritic cells and the tumor microenvironment. UT Austin - Portugal Program Annual Conference, Lisbon, Portugal; 23rd and 24th of June 2016.

Peres C, Ana I Matos, Viana AS, Graça L, Préat V, Florindo HF. Polymeric nanoparticle-based vaccine to target dendritic cells and the tumor microenvironment. 14th CIMT Annual Meeting – Mechanisms of efficacy in cancer immunotherapy. Mainz, Germany; 10th -12nd of May 2016.

Peres C, Ana I Matos, Viana AS, Graça L, Préat V, Florindo HF. Polymeric nanoparticle-based vaccine to deliver tumor-associated antigens and for immunomodulation. 2nd ASPIC International Congress. Oporto, Portugal; 28th and 29th of April 2016.

Peres C, Matos AI, Viana AS, Graça L, Préat V, Florindo HF. Polymeric nanoparticle-based vaccine: targeting dendritic cells and the tumor microenvironment. XI Spanish-Portuguese Conference on Controlled Drug Delivery "Revolutionary Approaches in Nanomedicine Development". Granada, Spain; 21st – 23rd of January 2016.

Peres C, Gaspar R, Graça L, Préat V, Florindo H. Polymeric nanoparticle-based cancer vaccine to deliver tumor associated antigens and for immunomodulation. Cancer Nanotechnology – Nanomedicines from Laboratory to Clinical Reality; Mount Snow, West Dover (VT), United States of America; 28th of June – 3rd of July 2015.

Peres C, Silva J, Graça L, Gaspar R, Préat V, Florindo HF. Multifunctional aliphatic polyester-based biodegradable nanoparticles for vaccine delivery and immunomodulation. Cancer Nanotechnology – Nanomedicines from Laboratory to Clinical Reality; Mount Snow, West Dover (VT), United States of America; 28th of June – 3rd of July 2015.

Peres C, Graça L, Préat V, Florindo H. Nanoparticle-based cancer vaccine to deliver tumor associated antigens and for immunomodulation. 1st ASPIC International Congress; Lisbon, Portugal; 25th and 26th of November 2014.

Peres C, Graça L, Préat V, Florindo HF. Intracellularly-targeted nanoplatform to target dendritic cells and for immunomodulation. 9th World Meeting on Pharmaceutics, Biopharmaceutics and Pharmaceutical Technology; Lisbon, Portugal; 31st of March - 3rd of April 2014.

Communications in National Conferences

Freitas R, Almeida S, Leon K, Graça L. Anti-inflammatory effect of CD6 blockade. XLII Annual Meeting SPI 2016 "Immunity, from cells to organisms". IGC, Oeiras June 1-3 2016. (Poster Presentation)

Fonseca VR, Água-Doce A, Graça L. T follicular helper cell subsets in blood and salivary glands in Sjögren's syndrome. XLII Annual Meeting: Sociedade Portuguesa de Imunologia, 2016. (Poster Presentation)

Figueiredo-Campos P, Almeida SCP, Maceiras AR, Graça L. Molecular characterization of antigen-specific T follicular helper (Tfh) cells induced by type 1 and type 2 adjuvants", XLII SPI Annual Meeting, Immunity form cells to organisms, Oeiras, 1-3 June, 2016. (Poster Presentation)

Peres C, Silva JM, Zupancic E, Graça L, Préat V, Florindo HF. Multivalent nanoparticle-based cancer vaccine to deliver tumor-associated antigens and for immunomodulation. Workshop Nano2014; Academy of Sciences, Lisbon, Portugal; 10th of October 2014.

Peres C, Graça L, Préat V, Florindo HF. PLA-based nanoparticles as a cancer vaccine to deliver tumor- associated antigens and for immunomodulation. 6th iMed.ULisboa Postgraduate Students Meeting, Faculty of Pharmacy of the University of Lisbon, Lisbon, Portugal; 2nd of July 2014.

Peres C, Viana AS, Graça L, Préat V, Florindo HF. Polymeric Nanoparticle-Based Vaccine to Target Dendritic Cells and the Tumor Microenvironment. 8th iMed.ULisboa Postgraduate Students Meeting and 1st i3DU Meeting, Faculty of Pharmacy of the University of Lisbon, Lisbon, Portugal; 14th and 15th of July 2016.

Peres C, Viana AS, Graça L, Préat V, Florindo HF. Nanoparticle-based cancer vaccine to target dendritic cells and the tumor microenvironment. Encontro Ciência'16. Lisbon, Portugal; 4th-6th of July 2016.

Peres C, Graça L, Préat V, Florindo H. Polymeric nanoplatform to deliver tumor-associated antigens and for immunomodulation. 7th iMed.ULisboa Postgraduate Students Meeting, Faculty of Pharmacy of the University of Lisbon, Lisbon, Portugal; 15th of July 2015.

Silva J, Zupani E, Peres C, Sainz V, Videira M, Graça L, Moreira JN, Préat V, Florindo HF. Development of multifunctional aliphatic polyester-based biodegradable nanoparticles for vaccine delivery and immunotherapy. Showcasing Portuguese Pharma Science: Advances in Discovery, Development and Manufacturing; Lisbon, Portugal; 30th of June 2014.

Organisation of Conferences

Graça L. Summer School in Immunology and Bioinformatics. Turku, Finland, June 6-8 2016.

Internalisation

During 2016 our group has been involved in several international projects.

We have been leading a collaborative project involving the laboratories of Arlene Sharpe and Laurence Turka (Harvard), Jocelyne Demengeot (IGC), and Ana E. Sousa (iMM). The project is devoted to the study of Tfh subsets in allergic diseases. A post-doc (Água-Doce) visited our Harvard partners during 2016.

We have a collaboration with a leading expert on adjuvants, Momtchilo Russo, from the University of São Paulo in Brazil. In this project our groups join resources to investigate how adjuvants influence Tfh subsets during the course of humoral responses.

We have also an ongoing collaborative project with the group of Kalet Leon (Center of Molecular Immunology, Havana, Cuba) for the study of immunomodulatory role of several molecular products.

Finally, we participate in a Marie Curie initial training network (Enlight-ten) that brings together experts in bioinformatics and immunology across Europe.

Prizes, Honours and Awards

Keystone Symposia scholarship funded by the National Institute of Allergy and Infectious Diseases (USA), Grant #1R13AI122341-01, to attend Keystone Symposia on Follicular Helper Cells and Germinal Centers to AR Maceiras.

Travel grant by SPI to attend the Keystone Symposia on Follicular Helper Cells and Germinal Centers to to AR Maceiras.

TwinnToInfect Travel Award, European Union's Horizon 2020 Research and Innovation Program (Grant Agreement No 692022) to VR Fonseca.

Advanced Teaching

Graça L. Lisbon BioMed PhD Programme, organization of the immunology module, February 2016.

Graça L. Gabba PhD Programme, lecturer in immunology module, IBMC, Porto, Portugal, May 2016.

Graça L. PhD Programme Regenerative Medicine, lecturer in immunology module, IMM/IST, Lisbon, Portugal, February 23 2016.

Graça L. ITQB PhD Programme, lecturer in immunology module, ITQB, Oeiras, Portugal, March 29 2016. Graça L. Lisbon BioMed (board member), 2016.

Graça L. PhD viva, Coimbra, Ângela Crespo, 18 Janeiro, 2016.

Graça L. PhD viva, Sofia Cerqueira, FMUL 26 April, 2016.

Graça L. PhD viva, Cátia Pereira, ICBAS U Porto 3 May, 2016.

Graça L. PhD viva, Diana Fontinha, FMUL 19 September 2016.

Graça L. PhD viva, Inês Perpétuo, FMUL, 3 October, 2016.

Graça L. PhD viva, Rómulo Areal, ITQB/IGC, 9 December, 2016.

Almeida, SCP. Lecture on Research in Immunology, May 2016, Universidade Atlântica, Portugal.

Science and Society

Graça L, Almeida SCP. Collaboration with visual artist Marta de Menezes leading to the development of an artwork, "Immortality for Two", exhibited in Lisbon (MUNHAC, New Art Fest 2017, curated by Antonio Cerveira Pinto), Porto (I3S, curated by Maria Manuela Lopes), and in Beijing (Beijing New Media Biennale 2016).

Graça L, Almeida SCP. Collaboration with visual artist Nigel Helyer leading to the development of a new artwork, to be completed in 2017.

Graça L, Almeida SCP. Collaboration with visual artist Andrew Carnie leading to the development of a new artwork inspired by transplantation, to be completed in 2017.

Graça L. The intersection of art and biology, summer school (co-organizer), Cultivamos Cultura, Odemira, Portugal, July 2016.

Fonseca VR, "My road towards immunology". Speaker at "International Immunology Day". IMM, 2016.

Kumar S, In May/June 2016, an artist visited the iMM to give a seminar and also particularly to talk for his next science-based artwork. I discussed with him about immunology and different T helper cells, along with brief chat about my project and also the ENLIGHT-TEN project. One thing that he got quite interested in was the integration of big data and its analysis to understand biological problems.

YouTube video: short tutorial on Tfh cells: https://www.youtube.com/watch?v=V3-7MpIos_c&t=1s

MSc Thesis Completed

Patrícia Isabel Figueiredo Campos 02/11/2016 Characterization of T follicular helper (Tfh) cells induced by type 1 and type 2 adjuvants. Universidade Nova de Lisboa, Instituto de Higiene e Medicina Tropical Sílvia Cristina de Paiva e Almeida.

Henrique, Domingos

Major Interests / Objectives

Research in our laboratory has been focused on understanding how cells decide which differentiation paths they follow during embryonic development to generate tissues and organs. Our aim is to elucidate the gene regulatory networks that control cell-fate decision processes in the embryo, using 2 experimental models: i) embryonic stem cells to study the mechanisms underlying their pluripotent state, and ii) neural retina to investigate how neural progenitors generate the variety of neurons that compose the adult eye. The main goal is to understand the molecular mechanisms governing decision processes that stem/progenitor cells employ to differentiate along various fates, thereby generating correctly patterned tissues and organs.

Head of Laboratory

Domingos Manuel Pinto Henrique, PhD, Assistant Professor.

Graphical Abstract

Research Team

Ana Marisa Mendes Gonçalves Vinhais Guedes	PhD	PhD Student, NA (Left May)
Cláudia Sofia Cardoso Gaspar	PhD	Post-Doctoral Investigator (Left May)
Gonçalo Filipe Ferreira Fernandes	Graduate	MSc Student (Started September)
João Manuel Coelho Carreira	Master	PhD Student
Jorge Miguel Faustino Martins	Graduate	MSc Student (Started February)
Raquel Maria Ramos Calçada	Graduate	MSc Student
Sara Sofia Gasalho Ferreira	Graduate	Technician

Laboratory Keywords / Research Areas

Stem cells, Notch signalling, Pluripotency, neurogenesis, Gene regulatory Networks, Systems Biology.

Major Scientific Achievements

In 2016, activities in our laboratory included:

- Publication of 3 papers in international scientific journals.
- Conclusion of 1 PhD thesis (Ana Guedes at IST).
- Conclusion of 2 MsC thesis (Raquel Calçada and Jorge Martins, both at IST)
- Organization of a 8-week course for the LisbonBioMed international PhD Program at IMM.
- Organization of a 2-week course on Stem Cell Biology for the international PhD Program in Bioengineering.
- Cell Therapies and Regenerative Medicine - Award to Domingos Henrique by Soc. Port. Biologia do Desenvolvimento.

Selected Publications

Costa A, Sanchez-Guardado L, Juniat S, Gale JE, Daudet N, Henrique D. (2015) Generation of sensory hair cells by genetic programming with a combination of transcription factors. Development 142, 1948-1959. (Journal IF: 150, Citations: 14).

Henrique D, Abranches E, Verrier L, Storey KG. (2015) Neuromesodermal progenitors and the making of the spinal cord. Development 142, 2864-2875. (Journal IF: 150, Citations: 17).

Elsa Abranches, Ana MV Guedes, Martin Moravec, Hedia Maamar, Petr Svoboda, Arjun Raj, Domingos Henrique (2014) Stochastic NANOG fluctuations allow mouse embryonic stem cells to explore pluripotency. Development 141, 2770. (Journal IF: 150, Citations: 18).

Abranches, E., Bekman, E., Henrique, D. (2013) Generation and characterization of a novel mouse embryonic stem cell line with a dynamic reporter of Nanog expression. PlosOne 8, e59928. (Journal IF: 150, Citations: 27).

Abranches, E., Silva, M., Pradier, L., Schulz, H., Hummel, O., Henrique, D., Bekman, E. (2009) Neural Differentiation of Embryonic Stem Cells in vitro: a Road Map to Neurogenesis in the Embryo. PLos ONE e6286.

http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0006286. (Journal IF: 150, Citations: 93).

Other Projects

2016/2018: Participation in the project "Towards outstanding research and training in tumour". Coordinator: Edgar Rodrigues Almeida Gomes. Agency: Comissão Europeia. Reference: Twinning - ReTuBi.

Publications in Peer Review Journals

Guedes AM, Henrique D, Abranches E (2016) Dissecting Transcriptional Heterogeneity in Pluripotency: Single Cell Analysis of Mouse Embryonic Stem Cells. Methods Mol Biol.1516:101-19.

Pezzarossa A, Guedes AM, Henrique D, Abranches E (2016) Imaging Pluripotency: Time-Lapse Analysis of Mouse Embryonic Stem Cells. Methods Mol Biol. 1341:87-100.

Murta D, Batista M, Silva E, Trindade A, Henrique D, Duarte A, Lopes-da-Costa L (2016) Notch signaling in the epididymal epithelium regulates sperm motility and is transferred at a distance within epididymosomes. Andrology. 4(2):314-27.

Invited Lectures and Seminars

Henrique, D. Delta-4 in the developing retina. Invited Seminar at School of Life Sciences, Dundee University, UK. August 31 2016.

Henrique, D. The Notch ligands Dll1 and Dll4 have non-redundant functions in the developing mouse neural retina. Invited lecture. SEBD Meeting, Girona, Spain, October 19-21, 2016.

Communications in International Conferences

Guedes, A., Pereira, A., Abranches, E., Henrique, D. Analysis of the dynamic properties of the pluripotency network in mouse embryonic stem cells, The Stem Cell Niche, Copenhagen Bioscience Conferences, Denmark, May 22-26. 2016.

Gaspar, C. Rosa, A. Henrique, D. Dll1 and Dll4 have non-redundant functions in the developing mouse neural retina, BSDB/Anne McLaren Memorial Trust 2016 Autumn Meeting, Edinburgh, UK, August 28-31, 2016.

Internationalisation

Our laboratory has ongoing productive collaborations with the following international groups:

- Arjun Raj, Penn University, Dept Engineering, Philadelphia, USA.
- Achim Gossler, Institut für Molekularbiologie, Medizinische Hochschule Hannover, Hannover, Germany.
- Kate Storey, Division of Cell & Developmental Biology, College of Life Sciences, University of Dundee, UK.
- Ana Pombo, Max-Delbrück-Centrum für Molekulare Medizin, Berlin, Germany.

Domingos Henrique has reviewed scientific papers for various international journals.
Domingos Henrique was a member of the Scientific Evaluation Committee's CE13 "Cell biology, developmental biology", from the Agence Nationale de Reserche (ANR), France.
Domingos Henrique has reviewed scientific grants for Horizon2020 (European Union), Austrian Science Fund (FWF), MRC (UK), ANR (France), Fundação Ciência e Tecnologia (Portugal), Universidade de Lisboa (Portugal).

Prizes, Honours and Awards

SPBD Award 2016 to Domingos Henrique.

Advanced Teaching

Henrique, D. organized the 8-week course "Towards a Creative and Critical Mind" for the LisbonBioMed international PhD Program at IMM, Lisbon, January 4th to February 26, 2016.

Henrique, D. organized the 2-week course on Stem Cell Biology for the International PhD Program in Bioengineering – Cell Therapies and Regenerative Medicine, IMM, Lisbon, February 15-26, 2016.

PhD Thesis Completed

Ana Marisa Mendes Gonçalves Vinhais Guedes 25/02/2016 Analysis of the Gene Regulatory Network underlying pluripotenciality in mouse Embryonic Stem cells, Univ. Lisboa- Instituto Superior Técnico Domingos Henrique, Elsa Abranches.

MSc Thesis Completed

Jorge Miguel Faustino Martins 11/11/2016 Bio-engineering of neuromesodermal progenitors Univ. Lisboa- Instituto Superior Técnico Domingos Henrique.

Raquel Maria Ramos Calçada 09/11/2016 Unravelling the role of NANOG in the regulation of priming gene expression Univ. Lisboa- Instituto Superior Técnico Domingos Henrique.

Lacerda, João F.

Major Interests / Objectives

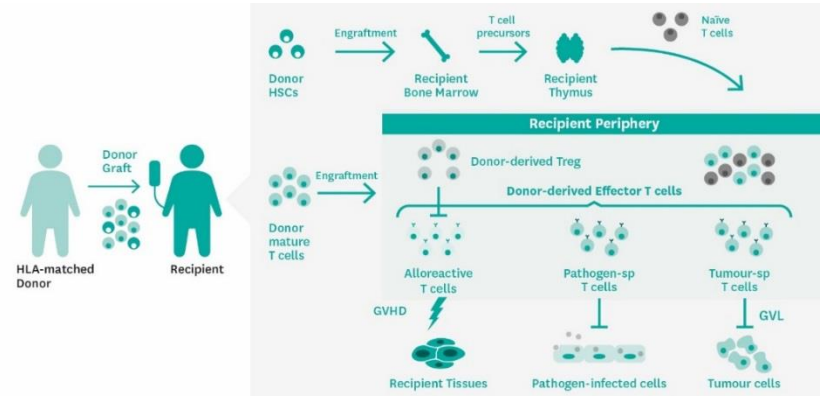
Our lab studies immunity after Hematopoietic Stem Cell Transplantation (HSCT), looking to develop strategies to modulate immune responses post-HSCT. We aim to identify immune markers associated with complications occurring post-HSCT, such as Graft-*versus*-Host Disease (GVHD), viral and fungal infections, as well as the mechanisms by which these complications emerge. We are involved in studies of genetic propensity for invasive fungal infections after HSCT.

Moreover, steroid-resistant GVHD patients are undergoing therapy with donor regulatory T cells while being monitored through in-depth immune assays in our lab. We further plan to develop immune therapy strategies using pathogen-specific T cells to treat infections post-HSCT, ultimately aiming to improve overall HSCT patient survival.

Head of Laboratory

João Mascarenhas Forjaz de Lacerda, MD/PhD, Associate Professor, Clinical Specialist, Hospital Santa Maria.

Graphical Abstract



Research Team

Ana Bárbara Barroso de Matos	Graduate	MSc Student (Left May)
Ana Cristina Frazão Lopes Alho	MD	PhD Student
Bárbara Coelho da Silva Martins Saraiva	Graduate	Trainee (Started May)
Ekaterina Minskaia	PhD	Post-Doctoral Investigator
Inês Raquel Antunes Ferreira	Master	Investigator (Left January)
Joana Bianchi Marques Bettencourt Gesta	Master	PhD Student

Laura Ward	PhD	Administrative (Started August)
Maria Godinho A.V. Duarte Soares	PhD	Principal Investigator
Paulo Nelson Gomes Pereira	PhD	Technician (Started March)
Rita Isabel Silva de Azevedo	PhD	Post-Doctoral Investigator
Sara Ventura Bucar	Master	Investigator

Laboratory Keywords / Research Areas

Immune reconstitution after hematopoietic stem cell transplantation (HSCT), Homeostasis of regulatory T cells in patients submitted to HSCT, Adoptive immunotherapy after HSCT, Pathogen-specific immunity after HSCT, Genetic susceptibility for fungal and viral infections.

Major Scientific Achievements

Our Unit aims to bring into clinical practice adoptive cellular immunotherapy strategies for the prevention and treatment of severe complications after hematopoietic stem cell transplantation (HSCT). Since 2015 we have been actively engaged in a cellular therapy clinical trial alongside our partners in Europe and the USA.

In 2016 we continued to pursue active patient recruitment for this Phase I dose escalation clinical trial, infusing donor regulatory T cells in HSCT recipients with steroid refractory chronic graft versus host disease. Thus far infusions show no obvious toxicity.

We have further begun preliminary analysis of patient samples by flow cytometry and have established and optimized a high-throughput next generation sequencing and analysis pipeline with collaborators, to begin profiling samples. We aim to implement novel strategies to modulate immune tolerance after HSCT.

Selected Publications

Alho AC, Kim HT, Chammas MJ, Reynolds CG, Matos TR, Forcade E, Whangbo J, Nikiforow S, Cutler CS, Koreth J, Ho VT, Armand P, Antin JH, Alyea EP, Lacerda JF, Soiffer RJ, Ritz J. (2016) Unbalanced recovery of regulatory and effector T cells after allogeneic stem cell transplantation contributes to chronic GVHD. Blood 127, 646. http://www.bloodjournal.org/content/bloodjournal/127/5/646.full.pdf. (Journal IF: 11.841, Citations: 6).

Cunha C, Aversa F, Lacerda JF, Busca A, Kurzai O, Grube M, Löffler M, Maertens JA, Bell AS, Almeida B, Sousa PS, Barbui A, Potenza L, Caira M, Rodrigues F, Salvatori G, Pagano l, Lupi M, Garlanda C, Mantovani A, Velardi A, Romani L, Carvalho A. (2014) Genetic deficiency of PTX3 and invasive aspergillosis in stem cell transplantation. New England Journal of Medicine, 370(5), 421. http://www.nejm.org/doi/pdf/10.1056/NEJMoa1211161. (Journal IF: 59.558, Citations: 62).

Azevedo RI, Soares MV, Albuquerque AS, Tendeiro R, Soares RS, Martins M, Ligeiro D, Victorino RM, Lacerda JF, Sousa AE (2013) Long-Term Immune Reconstitution of Naive and Memory T Cell Pools after Haploidentical Hematopoietic Stem Cell Transplantation. Biology of Blood and Marrow Transplantation 19, 703. http://www.bbmt.org/article/S1083-8791(13)00053-0/pdf. (Journal IF: 3.940, Citations: 7).

Gomes AQ, Correia DV, Grosso AR, Lança T, Ferreira C, Lacerda JF, Barata JT, Silva MG, Silva-Santos B. (2010) Identification of a panel of ten cell surface protein antigens associated with immunotargeting of leukemias and lymphomas by peripheral blood gammadelta T cells. Haematologica 95, 1397. http://www.haematologica.org/content/99/6/1062.full.pdf+html. (Journal IF: 5.935, Citations: 29).

Azevedo RI, Soares MV, Barata JT, Tendeiro R, Serra-Caetano A, Victorino RM, Sousa AE (2009) IL-7 sustains CD31 expression in human naive CD4+ T cells and preferentially expands the CD31+ subset in a PI3K-dependent manner. Blood 113, 2999. http://www.bloodjournal.org/content/bloodjournal/113/13/2999.full.pdf. (Journal IF: 9.06, Citations: 41).

Ongoing Research Projects

2013/2016: Indução de Tolerância Imunológica após Transplante Alogénico de Células Estaminais Hematopoiéticas em Humanos. Coordinator: João Mascarenhas Forjaz de Lacerda. Agency: Fundação Ciência e Tecnologia. Reference: HMSP-ICT/0001/2011. Amount: 293513.00. Amount (total): 563495.00.

2015/2019: Repair of tissue and organ damage in refractory chronic graft versus host disease after hematopoietic stem cell transplantation by infusion of purified allogeneic donor regulatory T lymphocytes. Coordinator: João Mascarenhas Forjaz de Lacerda. Agency: Comissão Europeia. Reference: PHC - 643776 - TREGeneration. Amount: 1547895.00. Amount (total): 5899250.00.

Other Projects

2016/2017: Focusing on epigenetic control of regulatory T cells. Projecto GAPIC no 20160011. Coordinator: Ekaterina Minskaya.

2016/2017: Reconstituição imunológica após transplante de células estaminais hematopoiéticas: diferenças na função tímica e diversidade das células T entre pacientes com e sem doença do enxerto contra hospedeiro crónico: Projecto GAPIC n.º 20160003. Coordinator: João Lacerda.

2016/2019: Participation in PRECISE Project – Programa de Atividades Conjuntas – Project number 016394 Precise (Promoção do avanço significativo do conhecimento na área de medicina de precisão e sua translação para benefício da sociedade), financed by the Comissão Diretiva do Programa Operacional Regional de Lisboa and by Fundação para a Ciência e a Tecnologia, I.P. Coordinator: Maria Carmo-Fonseca.

Publications in Peer Review Journals

A.C. Alho, H.T. Kim, M.J. Chammas, C.G. Reynolds, T.R. Matos, E. Forcade, J. Whangbo, S. Nikiforow, C.S. Cutler, J. Koreth, V.T. Ho, P. Armand, J.H. Antin, E.P. Alyea, J.F. Lacerda, R.J. Soiffer, and J. Ritz. (2016) Unbalanced recovery of regulatory and effector T cells after allogeneic stem cell transplantation contributes to chronic GVHD. Blood 127, 5, 646 (Journal IF; 11.847; Citations:6).

Hirakawa M, Matos T, Liu H, Koreth J, Kim HT, Paul NE, Murase K, Whangbo J, Alho AC, Nikiforow S, Cutler C, Ho VT, Armand P, Alyea EP, Antin JH, Blazar BR, Lacerda JF, Soiffer RJ, Ritz J. (2016) Low-dose IL-2 selectively activates subsets of CD4+ Tregs and NK cells. JCI Insight Nov 3;1(18) (Journal IF: not available, Citations: 0).

Chorny, A., Casas-Recasens, S., Sintes, J., Shan, M; Polentarutti, N; Garcia-Escudero, R; Walland, AC; Yeiser, JR; Cassis, L; Carrillo, J; Puga, I; Cunha, C; Bastos, H; Rodrigues, F; Lacerda, JF; Morais, A; Dieguez-Gonzalez, R; Heeger, PS; Salvatori, G; Carvalho, A; Garcia-Sastre, A; Blander, JM; Mantovani, A; Garlanda, C; Cerutti, A (2016) The soluble pattern recognition receptor PTX3 links humoral innate and adaptive immune responses by helping marginal zone B cells. Journal of Experimental Medicine 213; 10; 2167-2185 (Journal IF: 11.240, Citations: 0).

Other Publications International

M. Monteiro, A. Água-Doce, R.I. Azevedo, J.F. Lacerda and L. Graça. (2016) Book Chapter: Translational Immunology: Mechanisms and Pharmacologic Approaches. Chapter 10: Regulatory T cells. Translational Immunology (pg 205).

Invited Lectures and Seminars

Lacerda J. Regulatory T cells in chronic GVHD. GvH/GvL 2016 13th International Symposium, Regensburg, Germany (March 16-18, 2016).

Terapêutica celular após transplante de progenitores hematopoiéticos. In: Conferências Universidade de Lisboa, 18 de Abril de 2016.

Lacerda J. Terapias celulares em leucemia linfoblástica aguda. Amgen HOPE Symposium, Lisboa, 8 de Maio de 2016.

Lacerda J. Candidaturas ao Programa Horizonte 2020. PTCRIN-Infarmed, Candidaturas Portuguesas a fundos europeus. O processo e as lições a reter. Lisboa, 25 de Maio de 2016.

Lacerda J. Medicina regenerativa em transplante de progenitores hematopoiéticos. Ciência 2016 Encontro com a Ciência e Tecnologia em Portugal em Sessão Medicina Regenerativa. Lisboa, 5 de Julho de 2016.

Communications in International Conferences

Maria V.D. Soares, Rita I Azevedo, Inês A Ferreira, Sara Ventura Bucar, Ana Cristina Alho, Eduardo L Espada, Juncal Clara, Nádia Camacho, Carlos M. Martins, José A Carmo, Fernanda Lourenço, Raul Moreno, Carlos Vaz, António M. Campos, Fernando Campilho, Rosa Ferreira, Jerome Ritz, João F Lacerda. TREG and Tcon Dynamics after Allo-HSCT: cGVHD Is Associated to Decreased Naive and Stem Cell Memory Subsets with a Concomitant Increase in Terminally Differentiated T Cell Subsets ASH 58th Annual Meeting and Exposition (December 3-6, 2016) Poster Presentation.

M. Soares, R. Azevedo, I. Ferreira, S. Bucar, A. Alho, E. Espada, C. Juncal, N. Camacho, C. Martins, J.A. Carmo, F. Lourenço, R. Moreno, C. P. Vaz, A. Campos, F. Campilho, R. Ferreira, J. Ritz, J. F. Lacerda Imbalances in the reconstitution of naïve and memory T cell subsets in chronic graft

versus host disease 42nd Annual Meeting of the European Society for Blood and Marrow Transplantation 3 – 6 April 2016, Valencia – Spain. Poster Presentation.

Eduardo Espada; Ann E. Woolley; Jason Avigan; Edouard Forcade; Maria V.D. Soares; Sarah Nikiforow; Vincent T. Ho; Corey S. Cutler; John Koreth; Philippe Armand; Edwin P. Alyea III; Robert J. Soiffer; Joseph H. Antin; João F. Lacerda; Haesook T. Kim; Francisco M. Marty; Jerome Ritz BK virus-specific T cell immune reconstitution after allogeneic hematopoietic stem cell transplantation ASH 58th Annual Meeting and Exposition (December 3-6, 2016) Poster Presentation.

Internationalisation

Our Unit actively collaborated in 2016 with the following investigators:

- Jerome Ritz; Dana-Farber Cancer Institute (DFCI) and Harvard Medical School (HMS), USA, under the auspices of Harvard Medical School Portugal Program and the TREGeneration Consortium of the Horizon 2020 Programme.

- Joaquim Cabral; IST-Universidade de Lisboa, also within the framework of Harvard Medical School Portugal Program.

- Matthias Edinger; Universitaetsklinik, Regensburg, under the TREGeneration Consortium of the Horizon 2020 Programme.

- Frederic Baron; Laboratory of Cell and Gene Therapy, CHU Sart-Tilman, Liege, under the TREGeneration Consortium of the Horizon 2020 Programme.

- Mario Arpinati; Department of Hematology “Seragnoli”, University Hospital S. Orsola-Malpighi, Bologna, under the TREGeneration Consortium of the Horizon 2020 Programme.

- John Koreth, Dana-Farber Cancer Institute (DFCI) and Harvard Medical School (HMS), USA, under the auspices of Harvard Medical School Portugal Program and the TREGeneration Consortium of the Horizon 2020 Programme.

- Marie-Laure Yaspo; Max Planck Society, Max Planck Institute for Molecular Genetics, Berlin, under the TREGeneration Consortium of the Horizon 2020 Programme.

- Hans Lehrach; Alacris Theranostics GmbH, Berlin, under the TREGeneration Consortium of the Horizon 2020 Programme.

- Marta Garcia-Finana; Department of Biostatistics, Faculty of Health & Life Sciences, University of Liverpool, Liverpool, under the TREGeneration Consortium of the Horizon 2020 Programme.

- Sybille Freitag, GABO:mi, Munich, under the TREGeneration Consortium of the Horizon 2020 Programme.

- Drs. Cristina Cunha and Dr Agostinho Carvalho, Universidade do Minho, for the studies of genetic susceptibility for invasive fungal infections.

- Prof. Britta Eiz-Vesper at the University of Hanover for the generation of third-party pathogen-specific T cells to administer after HSCT.

Advanced Teaching

Lacerda, J. Lectured at the Lisbon BioMed PhD Program, "Cell therapies in the clinical setting" Feb 23, 2016.

MSc Thesis Completed

Ana Bárbara Barroso de Matos 08/06/2016 Monitorização clínica e imunológica de doentes com Doença do Enxerto contra o Hospedeiro crónica após infusão de células T reguladoras Faculdade de Medicina, Universidade de Lisboa Maria Godinho Soares João Forjaz de Lacerda.

Lopes, Luísa V.

Major Interests / Objectives

Ageing, stress and neurodegenerative diseases are among the conditions that contribute to the accelerated loss of cognitive function. Our group's work is focused on understanding the mechanisms inducing this "early-ageing", which render the hippocampus - the brain area related to learning and memory – particularly susceptible.

We focus on characterizing the molecular mechanisms associated to hippocampal loss of function and its outcome in behavior performance and synaptic function, using rodent models. We ensure the translation to the human brain, by testing these molecular imprints in healthy and diseased human brain tissue. We are currently focused into exploring the role of adenosine A2A receptors as potential cognitive modulators both in vitro and in vivo.

Head of Laboratory

Luísa Maria Vaqueiro Lopes, PhD.

Research Team

Ana Carolina Amaral Peixoto	Master	MSc Student (Started September)
Ana Inês Marques Morgado	Master	PhD Student (Started September)
Diana Gabriela Ribeiro Ferreira	Master	PhD Student, University Medical Center Goettingen, Department of NeuroDegeneration and Restorative Research, Faculdade Medicina da Universidade do Porto
Hugo Vicente Miranda	PhD	Post-Doctoral Investigator, Faculdade Medicina da Universidade Nova de Lisboa
Joana Fernandes Esteves Soares Coelho	PhD	Post-Doctoral Investigator
Marcos António dos Santos Rodrigues Gomes	Master	Technician
Mariana Temido Mendes Ferreira	Master	PhD Student, NA
Miguel Alves Rovisco Ribeiro	Master	Trainee
Rui Artur Paiva Loureiro Gomes	PhD	Investigator, Assistant Professor

Laboratory Keywords / Research Areas

Aging, Neurosciences, Cognition, Hippocampus.

Major Scientific Achievements

1) We coordinated a study describing the mechanism by which caffeine counteracts age-related cognitive deficits, published in Scientific Reports. We found that by altering the amount of the adenosine A2A receptor - target for caffeine- in neurons from hippocampus and cortex is sufficient to induce a profile that we designate as 'early-aging'. The memory loss was associated with a dramatic increase in stress hormones in plasma (cortisol) and amplification of stress actions in the brain, namely activation of target genes.

2) We published 3 more papers (Sci Reports, Mol. Neurodegeneration and Mol Psychiatry) in collaboration in which we have contributed by providing electrophysiological and behavioral characterization of memory performance in various neurodegeneration models.

3) We secured funding for 3 new projects, 2 by Fundação para a Ciência e Tecnologia (2016-2019) and 1 by AIRR Actions d'Initiative Régionale pour la Recherche (France) (2016-2018) in a collaboration with INSERM.

Selected Publications

Laurent C, Burnouf S, Ferry B, Batalha VL, Coelho JE, Baqi Y, Malik E, Mariciniak E, Parrot S, Van der Jeugd A, Faivre E, Flaten V, Ledent C, D'Hooge R, Sergeant N, Hamdane M, Humez S, Müller CE, Lopes LV, Buée L, Blum D. (2014) A2A adenosine receptor deletion is protective in a mouse model of Tauopathy. Molecular Psychiatry doi: 10.1038/mp.2014.151. Epub 2014 Dec 2, 21, 97-107. 2016 Jan; 21(1):97-107. (Journal IF: 15.7, Citations: n/a) (2016) Maternal separation impairs long term-potentiation in CA1-CA3 synapses and hippocampal-dependent memory in old rats. Molecular Psychiatry 21, 97. (Journal IF: 15.7, Citations: 23).

Ferreira DG, Batalha VL, Vicente Miranda H, Coelho JE, Gomes R, Gonçalves FQ, Real JI, Rino J, Albino-Teixeira A, Cunha RA, Outeiro TF, Lopes LV (2015) Adenosine A2A Receptors Modulate a-Synuclein Aggregation and Toxicity. Cerebral Cortex pii: bhv268. [Epub ahead of print]. http://cercor.oxfordjournals.org/content/early/2015/11/02/cercor.bhv268.abstract. (Journal IF: 10.4, Citations: 6).

Batalha VL, Pego JM, Fontinha BM, Costenla AR, Valadas JS, Baqi Y, Radjainia H, Müller CE, Sebastião AM, Lopes LV. (2013) Adenosine A (2A) receptor blockade reverts hippocampal stress-induced deficits and restores corticosterone circadian oscillation. MOLECULAR PSYCHIATRY 18, 320. http://www.ncbi.nlm.nih.gov/pubmed/22371048. (Journal IF: 15.1, Citations: 73).

Diógenes MJ, Dias RB, Rombo DM, Vicente Miranda H, Maiolino F, Guerreiro P, Nässtrom T, Franquelim HG, Oliveira LM, Castanho MA, Lannfelt L, Bergström J, Ingelsson M, Quintas A, Sebastião AM, Lopes LV, Outeiro TF. (2012) Extracellular alpha-synuclein oligomers modulate synaptic transmission and impair LTP via NMDA-receptor activation. Journal of Neuroscience 32, 11750. (Journal IF: 7.8, Citations: 73).

Ongoing Research Projects

2014/2016: Service-University of Macau. Coordinator: Luísa Maria Vaqueiro Lopes. Agency: Institute of Chinese Medical Sciences. Reference: Service-University of Macau. Amount: 3000.00. Amount (total): 3000.00.

2016/2019: Defesas anti-glicação como alvo terapêutico para a doença de Parkinson. Coordinator: Luísa Maria Vaqueiro Lopes. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/NEU-OSD/5644/2014. Amount: 51000.00. Amount (total): 0.00.

2016/2019: Microglia dysregulation as trigger for vhronic brain inflammation. Coordinator: Joana Fernandes Esteves Soares Coelho. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/BIM-MEC/4778/2014. Amount: 195035.00. Amount (total): 0.00.

Other Projects

2016/2018: AIRR Actions d'Initiative Régionale pour la Recherche "COGN'ADORA Role neuro-glial des récepteurs adénosinergiques dans la cognition". Aims at understanding the fundamental molecular mechanisms related to adenosine contribution to cognition. Role: Partner. Coordinator Institution: INSERM. Lille. Coordinator PI: David Blum.

2016/2018: Participation in project TWINNING (H2020) "Neurologic and Psychiatric disorders: from synapses to networks" – SynaNet, financed by the European Commission. Coordinator: Ana Sebastião.

Publications in Peer Review Journals

Laurent C, Burnouf S, Ferry B, Batalha VL, Coelho JE, Baqi Y, Malik E, Mariciniak E, Parrot S, Van der Jeugd A, Faivre E, Flaten V, Ledent C, D'Hooge R, Sergeant N, Hamdane M, Humez S, Müller CE, Lopes LV, Buée L, Blum D (2016) A2A adenosine receptor deletion is protective in a mouse model of Tauopathy. Mol Psychiatry. 21(1):97-107. doi: 10.1038/mp.2014.151. (Journal IF: 15.7, Citations: n/a).

Batalha VL, Ferreira DG, Coelho JE, Valadas JS, Gomes R, Temido-Ferreira M, Shmidt T, Baqi Y, Buée L, Müller CE, Hamdane M, Outeiro TF, Bader M, Meijsing SH, Sadri-Vakili G, Blum D, Lopes LV (2016) The caffeine-binding adenosine A2A receptor induces age-like HPA-axis dysfunction by targeting glucocorticoid receptor function. Sci Rep. 2016 Aug 11;6:31493. doi: 10.1038/srep31493. (Journal IF: 5.5, Citations: n/a).

Vicente Miranda H, Gomes MA, Branco-Santos J, Breda C, Lázaro DF, Lopes LV, Herrera F, Giorgini F, Outeiro TF. (2016) Glycation potentiates neurodegeneration in models of Huntington's disease. Sci Rep. 2016 Nov 18;6:36798. doi: 10.1038/srep36798. (Journal IF: 5.5, Citations: n/a).

Guerreiro PS, Coelho JE, Sousa-Lima I, Macedo P, Lopes LV, Outeiro TF, Pais TF. (2016) Mutant A53T ?-Synuclein Improves Rotarod Performance Before Motor Deficits and Affects Metabolic Pathways. Neuromolecular Med. 2016 Aug 17. (Journal IF: 5.5, Citations: n/a).

Other Publications International

Adenosine Receptors in Neurodegenerative Diseases. 1st Edition. Editors: David Blum Luisa Lopes, ISBN: 9780128037249. Eds Elsevier.

Invited Lectures and Seminars

Luisa Lopes: Stressed-out brain - impact on memory – I Biosam, FCUL, Portugal, Abril 2016.

Luisa Lopes: Understanding the molecular brain in health and disease – I Symposium, Faculty Sciences Lisbon, June 2016.

Communications in International Conferences

E. Faivre, J. E. Coelho, K. Zornbach, E. Malik, E. Marciniak, L. Cellai, K. Carvalho, V. Flaten, D. Demeyer, S. Eddarkaoui, R. Caillierez, M. Schneider, S. Humez, N. Sergeant, Y. Chern, C.E. Muller, L. Buée, A. Halle, L.V. Lopes, D. Blum. Oral administration of MSX-3, an adenosine A2A antagonist, reduces amyloid load and memory deficits of APP/PS1dE9 mice. Society for Neuroscience. San Diego, Novembre 2016.

E. Faivre1, J. E. Coelho2, K. Zornbach3, E. Malik4, E. Marciniak1, L. Cellai1, K. Carvalho1, V. Flaten1, D. Demeyer1, S. Eddarkaoui1, R. Caillierez1, M. Schneider4, S. Humez1, N. Sergeant1, Y. Chern5, C.E. Muller4, L. Buée1, A. Halle3, L.V. Lopes2, D. Blum1. Oral administration of a caffeine analog, the A2AR antagonist MSX-3, reduces memory deficits and amyloid levels of APP/PS1dE9 mice. FHU VasCog meeting, Lille, France.

Ferreira DG, Temido-Ferreira M, Batalha VL, Coelho JE, Ribeiro M, Marques-Morgado I, Albino-Teixeira A, Lopes LV, and Outeiro TF. 2016 Chronic blockade of adenosine A2A receptors rescues early cognitive deficits in a mouse model of Parkinson´s disease. 10th FENS Forum of Neuroscience. Copenhagen, Denmark.

Inês Marques-Morgado, Joana E. Coelho, Michael Bader, David Blum and Luísa V. Lopes. Microglia and astroglia phenotype in a neuron specific - A2A receptor overexpression model with age-like alterations. Society for Neuroscience. San Diego, Novembre 2016.

K. Carvalho, E. Faivre1, J. E. Coelho2, K. Zornbach3, E. Malik4, E. Marciniak1, L. Cellai1, K. Carvalho1, V. Flaten1, D. Demeyer1, S. Eddarkaoui1, R. Caillierez1, M. Schneider4, S. Humez1, N. Sergeant1, Y. Chern5, C.E. Muller4, L. Buée1, A. Halle3, L.V. Lopes2, D. Blum1. 'Chronic treatment with an adenosine A2AR antagonist, ameliorates amyloid pathology and memory deficits in the APP/PS1dE9 model of amyloidogenesis'. EURON Meeting, Lille, France.

Kévin Carvalho1*, Emilie Faivre1*, Joana Coelho2, Lucrezia Cellai1, Sandrine Humez1, Malika Hamdane1, Luc Buée1, Luisa V. Lopes2 and David Blum1. Neuronal and astrocytic upregulation of the caffeine-binding adenosine A2A receptor is detrimental for cognition in a mouse model of Alzheimer’s disease like Tau-pathology. FHU VasCog meeting, Lille, France.

Marques-Morgado I, Coelho JE, Bader M, Blum D and Lopes LV; Microglia and astroglia phenotype in a neuron specific - A2A receptor overexpression model with age-like alterations; Poster Presentation at the 46th Annual Meeting of the Society for Neuroscience; November 2016; San Diego, U.S.A.

Miguel Ribeiro, Joana E. Coelho, Mariana Temido-Ferreira, Diana G. Ferreira, Luísa V. Lopes, Julie C. Ribot. gd T cells are the major source of IL-17 in the meninges and control brain cognitive functions Oral and Poster presentation: Gamma-Delta Conference 2016 16-29th June, King's college London, UK.

tTemido-Ferreira M, Ferreira DG, Coelho JE, Bader M, Marie H, Pousinha PA, Outeiro TF and Lopes LV; Neuronal adenosine A2A receptor overexpression leads to NMDAR overactivation and a shift in long-term depression in CA1/CA3 hippocampal synapses; Poster Presentation at 7th ISN Special Conference – Synaptic Function and Dysfunction in Neurodegenerative Diseases; June 2016, Coimbra, Portugal.

Temido-Ferreira M, Ferreira DG, Coelho JE, Bader M, Outeiro TF, Marie H, Pousinha PA and Lopes LV; Neuronal adenosine A2A receptor overexpression shifts long-term depression in CA1/CA3 hippocampal synapses; Poster Presentation at the 9th FENS Forum of Neuroscience; July 2016, Copenhagen, Denmark.

Vânia L. Batalha, Diana G. Ferreira1, Joana E. Coelho, Rui Gomes, Tatiana Shmidt, Younis Baqi9, Luc Buée, Christa E. Müller, Malika Hamdane, Tiago F. Outeiro, Michael Bader, Sebastiaan H. Meijsing, Ghazaleh Sadri-Vakili, David Blum, and Luísa V. Lopes. The caffeine-binding adenosine A2A receptor induces age-like HPA-axis dysfunction by targeting glucocorticoid receptor function. Society for Neuroscience. San Diego, Novembre 2016.

Vaz R, Chapela D, Coelho JE, Lopes LV, Afonso ND, Outeiro TF and Sousa S, Gait impairments in the 6-OHDA mouse model of Parkinson's disease after L-dopa chronic treatment, July 2016, FENS meeting, Copenhagen.

Vaz R, Chapela D, Coelho JE, Lopes LV, Afonso ND, Outeiro TF and Sousa S, Zeb013 rescues motor impairments in a mouse model of levodopa-induced dyskinesia, November 2016, Neuroscience meeting, San Diego.

Communications in National Conferences

Ferreira DG, Temido-Ferreira M, Batalha VL, Vicente-Miranda H, Coelho JE, Albino-Teixeira A, Lopes LV, and Outeiro TF. 2016 Hippocampal-dependent memory performance on a mice modelo f early Parkinson's disease. SPF XLVI Reunião da Sociedade Portuguesa de Farmacologia XXXIV Reunião de Farmacologia Clínica XV Reunião de Toxicologia. Porto, Portugal.

Helena C. Brigas, Miguel Ribeiro Mariana Temido-Ferreira, Joana E. Coelho, Luísa V. Lopes, Julie C. Ribot Searching for innate and adaptive immune cell fingerprints in Alzheimer's Disease progression. Oral presentation: X PhD students meeting, iMM, Lisbon, Portugal, March 2016.

Marques-Morgado I, Coelho JE, Gomes R, Ribeiro M, Bader M, Blum D and Lopes LV; Neuronal adenosine A2A receptor overexpression induces age-like alterations in microglial and astroglial phenotypes; Poster Presentation at 2ndMeeting of the PhD students from the Mind-Brain Doctoral College of the University of Lisbon, November 2016, Lisbon, Portugal.

Miguel Ribeiro, Joana E. Coelho, Mariana Temido-Ferreira, Diana G. Ferreira, Luísa V. Lopes, Julie C. Ribot. gd T cells are the major source of IL-17 in the meninges and control brain cognitive functions Oral presentation: Sociedade Portuguesa de Imunologia, IGC, Oeiras, Portugal.

Mouro FM, Batalha VL, Ferreira DG, Coelho JE, Baqi Y, Müller CE, Lopes LV, Ribeiro JÁ, Sebastião AM. 2016 Adenosine A2ARs: Hand-in-hand with CB1RS mediating memory consolidation deficits. SPF XLVI Reunião da Sociedade Portuguesa de Farmacologia XXXIV Reunião de Farmacologia Clínica XV Reunião de Toxicologia. Porto, Portugal.

Mouro FM, Batalha VL, Ferreira DG, Coelho JE, Baqi Y, Müller CE, Lopes LV, Ribeiro JÁ, Sebastião AM. 2016 Adenosine A2ARs: Hand-in-hand with CB1RS mediating memory consolidation deficits. IMM PhD student Meeting, Lisbon, Portugal.

Temido-Ferreira M, Ferreira DG, Coelho JE, Marie H, Pousinha PA, Outeiro TF and Lopes LV; Neuronal A2A Receptor overexpression shifts long-term depression in CA1/CA3 hippocampal synapses; Oral communication at the XLVI Meeting of the Portuguese Society for Pharmacology; February 2016, Porto, Portugal.

Vaz R, Chapela D, Coelho JE, Lopes LV, Afonso ND, Outeiro TF and Sousa S, Selection of a new therapeutic compound for Parkinson's disease: screening approach, March 2016, X PhD students meeting, Lisbon.

Prizes, Honours and Awards

FENS-IBRO/PERC Travel award to D. Ferreira - ISN Special Conference award – Synaptic Function and Dysfunction in Neurodegenerative Diseases to M. Temido-Ferreira.

Science and Society

Lopes, Luisa Tvi24: http://www.tvi24.iol.pt/videos/tecnologia/boas-noticias-cafeina-pode-retardar-perda-de-memoria/57e250d50cf215218708c495
Appearance to discuss the new published paper, Sept 21, 2016.

Lopes Lab RTP: http://www.rtp.pt/noticias/mundo/cafeina-retarda-perda-de-memoria_v949623
Cover story on the new published paper, location IMM, Sept 23, 2016.

Lopes Lab http://www.insights2innovate.com/caffeine-consumption-linked-to-reversing-memory-loss/
Highlight of new published paper on a scientific blog.

Lopes, Luisa - Antena 1 Radio Talkshow on Maratona da Saude initiative on Neurodegenarative Diseases, Feb 25, 2016.

Lopes, Luisa - Antena 3 Radio Talkshow "Prova Oral" on Maratona da Saude initiative on Neurodegenarative Diseases, April 29, 2016.

Coelho, Joana and Lopes, Luisa - Participation on the TV - RTP fundraising show Maratona da Saude initiative on Neurodegenarative Diseases, April 30, 2016.

Morais, Nuno

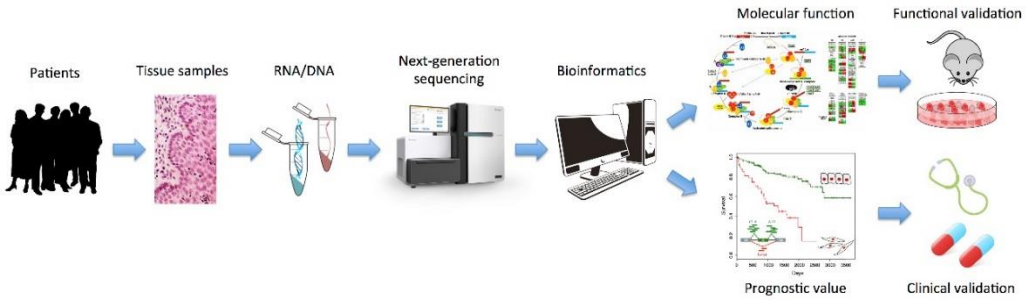
Major Interests / Objectives

We have a long-term interest in the systems-level transcriptional regulation underlying mammalian cell specification, often perturbed in disease. In particular, we are studying the mechanisms responsible for the association between aberrant splicing and pathologies like cancer and neurodegenerative disorders. We employ computational biology approaches for the analysis of next-generation sequencing data to find disease-specific transcriptomic signatures, aiming to understand how the regulation of alternative splicing is affected in different pathologies and thereby to identify molecular targets for functional exploration in vitro and in vivo. We also combine molecular and clinical information for the unveiling of novel candidate prognostic factors and therapeutic targets.

Head of Laboratory

Nuno Luís Barbosa Morais, PhD

Graphical Abstract



Research Team

Ana Carolina de Sousa Leote	Master	Investigator (Started October)
Bernardo Lucas Carvalho Pereira de Almeida	Graduate	MSc Student (Started September)
Lina Marcela Gallego Páez	PhD	Post Doctoral Investigator
Maria Teresa Proença Mendes Maia	PhD	Post-Doctoral Investigator (Started October)
Mariana Ascensão Ferreira	Master	Investigator (Started October)
Marie Catherine Bordone	Master	PhD Student
Marta Zegre Graça Oliveira Costa de Amorim	Graduate	PhD Student, Centro Hospitalar Lisboa Central, Clinical Specialist (Left August)
Nuno Daniel Saraiva Agostinho	Master	Investigator (Started October)

Laboratory Keywords / Research Areas

Computational Biology, Transcriptomics, Alternative splicing, Cancer, Neurodegenerative disease.

Major Scientific Achievements

In the second year of the Computational Biology Lab, there was stability in the team composition and in the infrastructure, allowing for the development of projects started in 2015. These involve the study of alternative splicing alterations as candidate prognostic factors in cancer (namely colorectal and brain tumours), as well as their aetiological role in aging and neurodegeneration.

We developed an R package for the integrated analysis of alternative splicing from large transcriptomic datasets that interactively performs graphically-assisted exploratory and statistical analyses. This package was part of the October release of Bioconductor.

Lina Gallego and Nuno Agostinho have been involved in collaborations that yielded publications in Cell Reports and Databases, respectively.

Mariana Ferreira was the winner of the AstraZeneca Innovate Competition - Translational Research, after an oral presentation at the iMed Conference.

Four students successfully completed their Masters theses.

Selected Publications

Braunschweig U, Barbosa-Morais NL, Pan Q, Nachman EN, Alipahani B, Gonatopoulos-Pournatzis T, Frey B, Irimia M, Blencowe BJ (2014) Widespread intron retention in mammals functionally tunes transcriptomes. Genome Research 24, 1774. (Journal IF: 11.351, Citations: 71)

Pena AC, Pimentel MR, Manso H, Vaz-Drago R, Neves D, Aresta-Branco F, Ferreira FR, Guegan F, Coelho LP, Carmo-Fonseca M, Barbosa-Morais NL, Figueiredo LM (2014) Trypanosoma brucei histone H1 inhibits RNA polymerase I transcription and is important for parasite fitness in vivo. Molecular Microbiology 93, 645. (Journal IF: 5.026, Citations: 11)

Ward MC, Wilson MD, Barbosa-Morais NL, Schmidt D, Stark R, Pan Q, Schwalie PC, Menon S, Lukk M, Watt S, Thybert D, Kutter C, Kirschner K, Flicek P, Blencowe BJ, Odom DT (2013) Latent Regulatory Potential of Human-Specific Repetitive Elements. Molecular Cell 49, 262. (Journal IF: 13.958, Citations: 27)

Barbosa-Morais NL, Irimia M, Pan Q, Xiong HY, Gueroussov S, Lee LJ, Slobodeniuc V, Kutter C, Watt S, Colak R, Kim T, Misquitta-Ali CM, Wilson MD, Kim PM, Odom DT, Frey BJ, Blencowe BJ (2012) The evolutionary landscape of alternative splicing in vertebrate species. Science 338, 1587. (Journal IF: 34.661, Citations: 232)

Barbosa-Morais NL, Dunning MJ, Samarajiwa SA, Darot JFJ, Ritchie ME, Lynch AG, Tavaré S (2010) A re-annotation pipeline for Illumina BeadArrays: improving the interpretation of gene expression data. Nucleic Acids Research 38, e17. (Journal IF: 9.112, Citations: 104).

Ongoing Research Projects

2015/2019: Projeto de Investigação Exploratória. Coordinator: Nuno Luís Barbosa Morais. Agency: Fundação para a Ciência e a Tecnologia, IP. Coordinator Institution: 0. Reference: Projecto de Investigação Exploratória. Amount: 50000.00. Amount (total): 50000.00.

2015/2017: EMBO - Installation Grant. Coordinator: Nuno Luís Barbosa Morais. Agency: EMBO. Coordinator Institution: 0. Reference: EMBO - Installation Grant - Nuno Morais. Amount: 150000.00. Amount (total): 150000.00.

2016/2019: PERSEIDS - Personalização de Terapêuticas Oncológicas através de modelação integrada e decisão. Coordinator: Nuno Luís Barbosa Morais. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/EMS-SIS/0642/2014. Amount: 70408.00. Amount (total): 199997.00.

2016/2016: Directors' Exploratory Projects (DEP) 2016. Coordinator: Nuno Luís Barbosa Morais. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: DEP 2016 NMorais. Amount: 25000.00. Amount (total): 0.00.

Other Projects

2016/2017: FPJ001027 - AstraZeneca Innovate Competition - Translational Research Grant. Coordinator: Nuno Luís Barbosa Morais.

2015/2018: PTDC/BIM-MED/3295/2014 - Angiocrine factors as modulators of spinal cord regeneration. Coordinator: Leonor Saúde. Coordinator Institution: Instituto de Medicina Molecular. Coordinator PI: Leonor Saúde.

2016/2019: Participation in PRECISE Project – Programa de Atividades Conjuntas – Project number 016394 Precise (Promoção do avanço significativo do conhecimento na área de medicina de precisão e sua translação para benefício da sociedade), financed by the Comissão Diretiva do Programa Operacional Regional de Lisboa and by Fundação para a Ciência e a Tecnologia, I.P. Coordinator: Maria Carmo-Fonseca.

Publications in Peer Review Journals

Sridhara SC, Carvalho S, Grosso AR, Gallego-Paez LM, Carmo-Fonseca M, de Almeida SF. Transcription Dynamics Prevent RNA-Mediated Genomic Instability through SRPK2-Dependent DDX23 Phosphorylation. Cell Rep. 2017 Jan 10;18(2):334-343. doi: 10.1016/j.celrep.2016.12.050.

Deng M, Brägelmann J, Kryukov I, Saraiva-Agostinho N, Perner S. FirebrowseR: an R client to the Broad Institute's Firehose Pipeline. Database (Oxford). 2017 Jan 6;2017. pii: baw160. doi: 10.1093/database/baw160.

Other Publications International

Saraiva-Agostinho N and Barbosa-Morais N (2017). Psichomics: Graphical Interface for Alternative Splicing Quantification, Analysis and Visualisation. R package version 1.0.7, https://github.com/nuno-agostinho/psichomics.

Invited Lectures and Seminars

Barbosa-Morais, N. Gene splicing in evolution and disease. Department of Physics, Instituto Superior Técnico, Lisbon, Portugal, November 2, 2016.

Barbosa-Morais, N. Profiling alternative splicing in evolution and disease. 2016 Summer School in Computational Biology, University of Coimbra, Portugal, September 7, 2016.

Barbosa-Morais, N. Gene expression profile of Kidney Tumors. Novartis Oncology Advanced RCC Preceptorship, Lisbon, Portugal, October 27, 2016.

Barbosa-Morais, N. Alternative splicing landscapes of cancer. Instituto Português de Oncologia, Lisbon, Portugal, Octover 12, 2016.

Barbosa-Morais, N. Science & Creativity. RedeValor Conference, Rectory, University of Lisbon, Portugal, May 6, 2016.

Barbosa-Morais, N. Alternative splicing and the dynamics of genomes' coding potential. 1st BioSAM, Faculty of Sciences, University of Lisbon, Portugal, April 17, 2016.

Barbosa-Morais, N. Biologia Computacional: splicing e cancro. IV Jornadas de Bioengenharia, Universidade da Beira Interior, Covilhã, Portugal, March 3, 2016.

Barbosa-Morais, N. Computational Biology in the study of Alternative Splicing in Cancer. II Semana da Bioengenharia, Instituto Superior Técnico, Lisbon, Portugal, March 2, 2016.

Communication in International Conferences

Barbosa-Morais, N. A bioinformatics application for the analysis and visualisation of alternative splicing in cancer. 4th Post-EURASNET Symposium, Poznan, Poland, September 28, 2016. (Oral Presentation)

Barbosa-Morais, N. Alternative splicing landscapes of disease. EMBO Young Scientists Forum, Lisbon, Portugal, September 1, 2016. (Oral Presentation)

Barbosa-Morais, N. Alternative splicing landscapes of cancer. EMBO YIP Cancer Meeting, Heraklion, Greece, June 28, 2016. (Oral Presentation)

Barbosa-Morais, N. Alternative splicing landscapes of disease. EMBO Young Investigator Meeting, EMBL Heidelberg, Germany, May 13, 2016. (Oral Presentation)

Gallego-Paez, L. M. CELF2 at the core of a prognostic alternative splicing signature in colorectal cancer. EMBO Young Scientists' Forum 2016, Lisbon, Portugal. September 1-2, 2016. (Poster Presentation)

Bordone, M. How to quantify alternative splicing. EMBO YIP PhD Course, Heidelberg, Germany. December 05-10, 2016. (Poster Presentation)

Bordone, M. Going Deep in the Brain with alternative Splicing in Parkinson's disease. Gordon Research Seminar on Neurobiology of Brain Disorders, Girona, Spain. August 07, 2016. (Oral Presentation)

Bordone, M. Going Deep in the Brain with alternative Splicing in Parkinson's disease. Gordon Research Conference on Neurobiology of Brain Disorders, Girona, Spain. August 07-12, 2016. (Poster Presentation)

Ferreira, MA. Alternative splicing during neuronal development. iMed 8.0 Innovate Competition, Lisbon, Portugal. October 15, 2016. (Oral Presentation)

Ferreira, MA and Barbosa-Morais, NL. Alternative splicing during neuronal development. iMed 8.0 Innovate Competition, Lisbon, Portugal. October 15, 2016. (Poster Presentation)

Saraiva-Agostinho, N. Shiny App for the Integrated Analysis of Alternative Splicing from Large Transcriptomic Datasets. European Bioconductor Developer's Conference 2016, Basel, Switzerland. December 6-7, 2016. (Oral Presentation)

Saraiva-Agostinho, N and Barbosa-Morais, NL. Bioinformatics Application for Analysis and Visualisation of Alternative Splicing in Cancer. EMBO Young Scientists' Forum 2016, Lisbon, Portugal. September 1-2, 2016. (Poster Presentation)

Communication in National Conferences

Bordone, M. Going Deep in the Brain with alternative Splicing in Parkinson's disease. X PhD Students Meeting, Lisboa, Portugal. March 31, 2016. (Poster Presentation)

Ferreira, MA. Alternative splicing during neuronal development. V Simpósio Acta Médica Portuguesa, Porto, Portugal. November 4, 2016. (Oral Presentation)

Leote, AC and Barbosa-Morais, NL. Genome-wide profiling of alternative splicing in aging across human tissues. 1st Symposium on Aging Research @CNC, Coimbra, Portugal. September 30, 2016. (Poster Presentation)

Internationalisation

We have started important collaborations with international former and current EMBO YIP members Jesus Gil (Imperial College London, UK) on the role of alternative splicing in cell senescence and Anna Sablina (VIB-KU Leuven, Belgium) on the impact of hypoxia on alternative splicing. Amongst other new main international collaborators are Julian Koenig (IMB Mainz, Germany) on the impact of cancer-associated DNA variants on oncogenic splicing deregulation and Mathieu Gabut (Centre Leon Berard Lyon, France) on the transcriptome of glioblastoma stem cells.

We have hosted, from April to July, Juan Carlos Gomez Verjan, a visiting PhD student from Universidad Nacional Autónoma de México.

Nuno Morais gave talks at the EMBO Young Investigator Meeting (Heidelberg, Germany) in May, the EMBO YIP Cancer Meeting (Heraklion, Greece) in June and the 4th Post-EURASNET Symposium (Poznan, Poland) also in September. Marie Bordone gave a talk and presented a poster at the Gordon Conference and Research Seminar on Neurobiology of Brain Disorders (Girona, Spain) in August. Nuno Agostinho gave an oral presentation at European Bioconductor Developer Conference (Basel, Switzerland) in December.

Prizes, Honours and Awards

AstraZeneca Innovate Competition - Translational Research Award to Mariana Ferreira.

Best poster by a 2nd year student at the X IMM/CAML PhD meeting to Marie Bordone.

Advanced Teaching

Nuno Morais lectured to the LisbonBioMed PhD Program at the iMM, the Gulbenkian Graduate Program Science for Development (PGCD) at the University of Cape Verde and the Masters in Oncobiology at the Faculty of Medicine of the University of Lisbon. In March, he also lectured in the course on NGS Data Analysis, RNAseq, ChIPseq, part of the Gulbenkian Training Programme in Bioinformatics.

Science and Society

Marie Bordone lectured at secondary schools on cancer and the iMM-Laço Fund.

Nuno Morais remained a member of the Executive Committee and a co-leader of the Alumni Chapter of PAPS (Portuguese-American Post-Graduate Society).

MSc Thesis Completed

Teresa Maia 18/10/2016 Analysis of the contribution of alternative splicing to glioma subtype definition Faculdade de Ciências, Universidade de Lisboa Nuno Morais Lisete Sousa.

Mariana Ferreira 21/10/2016 Alternative splicing during neuronal development Instituto Superior Técnico, Universidade de Lisboa Nuno Morais Gabriel Monteiro.

Carolina Leote 21/10/2016 Genome-wide profiling of alternative splicing in aging across human tissues Instituto Superior Técnico, Universidade de Lisboa Nuno Morais Nuno Mira.

Nuno Agostinho 25/10/2016 Bioinformatics application for analysis and visualisation of alternative splicing in cancer Faculdade de Ciências, Universidade de Lisboa Nuno Morais André Falcão.

Morais, Vanessa

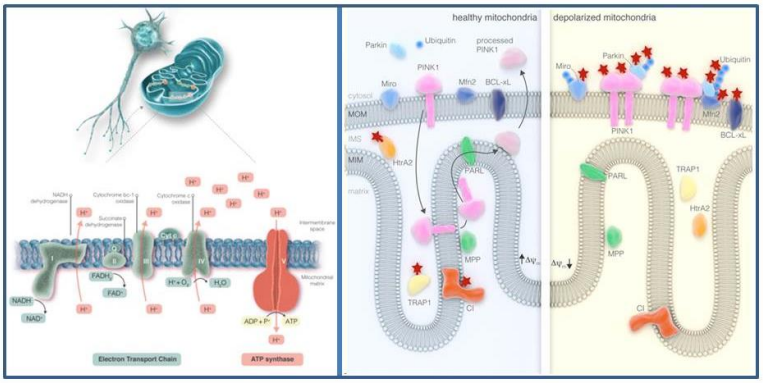
Major Interests / Objectives

Mitochondria homeostasis is a process involving an intimate crosstalk between energy production and intrinsic quality control. Perturbances of this intricate crosstalk can be fatal for the mitochondria itself or for its host cell. Mitochondria at the synapse have a pivotal role in synapse maintenance and neurotransmitter release. Therefore, mitochondrial function is crucial for the maintenance of a healthy brain. My research focuses on unraveling how synaptic mitochondria have learnt to adapt to their environmental demands, and decipher the mechanisms involved in mitochondrial quality control processes and bioenergetic compensation pathways. Ultimately, the overarching goal is to reveal how the disruption of these acquired mechanisms contributes to neurodegeneration.

Head of Laboratory

Vanessa Alexandra dos Santos Morais Epifânio, PhD.

Graphical Abstract



Research Team

Andreia Sofia Faria Pereira	Master	PhD Student (Started March)
Elvira Pequeno Leites	Master	Investigator
Filipa Alexandra Barroso Gonçalves	Master	Investigator (Started November)
Filipa Sofia Libório Carvalho	PhD	Post-Doctoral Investigator (Started December)

Laboratory Keywords / Research Areas

Mitochondria, Neurodegeneration, Mitophagy, Quality control, Parkinson's disease.

Major Scientific Achievements

The lab initiated its activity in August 2015 and throughout 2016 has gradually grown with the recruitment of 1 Postdoc (Filipa Carvalho), 1 LisbonBioMed PhD student (Andreia Pereira), 1 Master student (Filipa Goncalves) and 1 Technician/Lab Manager (Elvira Leites). We also had for shorter time periods a thesis student (Rita Guimaraes) and two first year medical students (Joana Monteiro; Inês Pinto).

Our projects focus on unraveling the protein fingerprint and quality control mechanisms present in neuronal mitochondria; in understanding the role of Parkinson's disease related genes, namely PINK1 and Parkin, in mitochondrial homestasis in a healthy and diseased brain. We are also developing new tool to address mitochondrial properties in vivo. We are also participating in other collaborative projects related to mitochondrial DNA mutations, and mitochondrial dysfunction in cancer and immunology. Our work has been presented in several national and international meetings.

Selected Publications

Aerts L, Craessaerts K, De Strooper B, Morais VA (2015) PINK1 Kinase Catalytic Activity Is Regulated by Phosphorylation on Serines 228 and 402. J Biol Chem 290, 2798. (Journal IF: 4,5, Citations: 14).

Morais VA*, Haddad D, Craessaerts K, De Bock P, Swerts J, Vilain S, Aerts L, Overbergh L, Grünewald A, Seibler P, Klein C, Gevaert K, Verstreken P, De Strooper B* (2014) PINK1 Loss of Function Mutations Affect Mitochondrial Complex I Activity via NdufA10 Ubiquinone Uncoupling. Science 344, 203. (Journal IF: 34, Citations: 98) *shared corresponding authors.

Haddad D, Vilain S, Vos M, Esposito G, Matta S, Kalscheuer V, Craessaerts K, Leyssen M, Nascimento R, Vianna-Morgante A, De Strooper B, Van Esch H, Morais VA*, Verstreken P* (2013) Mutations in the Intellectual Disability Gene Ube2a Cause Neuronal Dysfunction and Impair Parkin-Dependent Mitophagy. Molecular Cell 50, 831. (Journal IF: 14, Citations: 32) *shared corresponding authors.

Morais VA, Verstreken P, Roethig A, Smet J, Snellinx A, Vanbrabant M, Haddad D, Frezza C, Mandemakers W, Vogt-Weisenhorn D, Van Coster R, Wurst W, Scorrano L, De Strooper B (2009) Parkinson's disease mutations in PINK1 result in decreased Complex I activity and deficient synaptic function. EMBO Molecular Medicina 1, 99. (Journal IF: 9, Citations: 210).

Ongoing Research Projects

2015/2020: Projecto de Investigação Exploratória. Coordinator: Vanessa Alexandra dos Santos Morais Epifânio. Agency: Fundação para a Ciência e a Tecnologia, IP. Coordinator Institution: 0. Reference: Projecto de Investigação Exploratória. Amount: 50000.00. Amount (total): 50000.00.

2016/2017 Pareceres VMorais – ELSEVIER. Coordinator: Vanessa Alexandra dos Santos Morais Epifânio. Agency: Elsevier BV. Reference: Pareceres VMorais – ELSEVIER. Amount: 2987.97. Amount (total): 0.00.

2016/2018 EMBO Installation Grant. Coordinator: Vanessa Alexandra dos Santos Morais Epifânio. Agency: European Molecular Biology Organization. Reference: EMBO Vanessa Morais. Amount: 150000.00. Amount (total): 150000.00.

2016/2021 Quality Control and Maintenance of Synaptic Mitochondria — SynapticMitochondria. Coordinator: Vanessa Alexandra dos Santos Morais Epifânio. Agency: Comissão Europeia. Reference: ERC - SynapticMitochondria. Amount: 1300000.00. Amount (total): 1300000.00.

Other Projects

2016/2019: Participation in PRECISE Project – Programa de Atividades Conjuntas – Project number 016394 Precise (Promoção do avanço significativo do conhecimento na área de medicina de precisão e sua translação para benefício da sociedade), financed by the Comissão Diretiva do Programa Operacional Regional de Lisboa and by Fundação para a Ciência e a Tecnologia, I.P. Coordinator: Maria Carmo-Fonseca.

Publications in Peer Review Journals

Vos M, Geens A, Böhm C, Deaulmerie L, Swerts J, Rossi M, Craessaerts K, Leites EP, Seibler P, Rakovic A, Lohnau T, De Strooper B, Fendt SM, Morais VA, Klein C, Verstreken P (2017) Cardiolipin promotes electron transport between ubiquinone and Complex-I to rescue PINK1 deficiency. JCB. 216(3):00-00.

O'Flanagan, C.H., Morais, V.A., O'Neill, C. (2016) PINK1, cancer and neurodegeneration. Oncoscience. 3(1):1-2.

Aerts, L., Craessaerts, K., De Strooper, B., Morais, V.A. (2016) In Vitro Comparison of the Activity Requirements and Substrate Specificity of Human and Triboleum castaneum PINK1 Orthologues. PLoS One. 11(1):e0146083.

Other Publications International

Aerts, L., Morais, V.A. Chapter 2: Electron Transport Chain. In: Verstreken P, Ed., Parkinson's disease: Molecular Mechanisms Underlying Pathology. San Diego: Academic Press, 2017: 00-00.

Invited Lectures and Seminars

Morais VA. SCAN Series @ ITQB, Oeiras, Portugal, 3rd February 2016.

Morais VA. Gordon Research Conference GRC - Neurobiology of Brain Disorders, Girona, Spain, 27th July to 1st August 2016.

Morais VA. EMBO Young Investigator Symposium, Lisbon, Portugal, 1-2 September 2016.

Morais VA. ITQB 1st year PhD meeting for the MolBioS e Plants for Life Program, Foz do Arelho, Portugal, 14-15 October 2016.

Morais VA. CEDOC Seminar Series, Lisbon, Portugal, 23rd November 2016.

Morais VA. I ITQBNOVA PostDoc day, ITQB, Oeiras, Portugal, 7 December 2016.

Communications in International Conferences

A. Faria-Pereira, V.A. Morais "Unravelling the specific role of synaptic mitochondria", EMBO Young Scientists' Fórum, Lisbon, Portugal 1-2 September 2016 (Poster Presentation).

E.P. Leites, K. Craessaerts, B. Almeida, A. Pinto, T. Carvalho, V.A. Morais "Localization of the Parkinson's disease causing gene PINK1 in healthy and damaged mitochondria", EMBO Young Scientists' Forum, Portugal 1-2 September 2016 (Poster Presentation).

F.B. Gonçalves, L. Aerts, V.A. Morais "Dissecting the effect of Parkinson's disease related PINK1 mutations on kinase activity", EMBO Young Scientists' Forum, Portugal 1-2 September 2016 (Poster Presentation).

E.P. Leites, K. Craessaerts, B. Almeida, A. Pinto, T. Carvalho, V.A. Morais "Localization of the Parkinson's disease causing gene PINK1 in healthy and damaged mitochondria", 2nd PhD

Students Meeting of the Mind-Brain College, faculty of Medicine of Lisbon University (CAML), Lisbon, Portugal, 28-29 November 2016 (Poster Presentation).

F.B. Gonçalves, L. Aerts, V. A. Morais "Dissecting the effect of Parkinson's Disease related PINK1 mutations on kinase activity", 2nd PhD Students Meeting of the Mind-Brain College, faculty of Medicine of Lisbon University (CAML), Lisbon, Portugal, 28-29 November 2016 (Poster Presentation).

Organisation of Conferences

V.A. Morais. Member of the Evaluation Committee for the best poster presentation at the X iMM/CAML PhD meeting, Lisboa, Portugal, 30 March to 1 April 2016.

Internationalisation

Our projects involve collaborations with international research groups in Europe and USA.

Current international collaborators include: Bart de Strooper (VIB, Belgium); Patrik Verstreken (VIB, Belgium); Christine Klein (University Luebeck, Germany); Frederic Checler (CNRS, France); Jeffrey Savas (NorthWestern University, Chicago, USA); Cora O'Neil (UCC, Ireland) and Helene Plun-Favreau (UCL, UK).

Advanced Teaching

V.A. Morais coordinated (together with Sergio Almeida and Nuno Morais) and taught at the "Cell and Molecular Biology" week, LisbonBioMed International FCT PhD Program, iMM Lisboa, Faculty of Medicine of Lisbon University, Lisbon, 4-8 January 2016.

V.A. Morais taught at the "NeuroULisboa – Get Inside Week" from FMUL/iMM, Lisbon, Portugal, 10-14 October 2016.

V.A. Morais taught at the "Functional Organization of the Cell" Course of the Master in Biochemistry of Health, ITQB/UNL, Oeiras, Portugal, 13th October 2016.

V.A. Morais taught at the Course of the Masters in Oncobiology, Faculty of Medicine of Lisbon University, Lisbon, Portugal, 29th October 2016.

Science and Society

V.A. Morais was member of the Discussion panel on "Career Perspectives for Young Scientists in Academia" at the VIB 20 Years Celebration, Brussels, Belgium, 3-5 October 2016.

V.A. Morais participated in the Round Table discussion entitled "O Futuro: Jovens Investigadores" at the "Forum de Investigação e Desenvolvimento em Saúde", Instituto Ricardo Jorge, Lisbon, Portugal, 3rd November 2016.

MSc Thesis Completed

Filipa Gonçalves 26/10/2016 Dissecting the Effect of Parkinson's Disease Realated PINK1 Mutations on Kinase Activity Faculdade de Ciência e Tecnologias, Universidade Nova de Lisboa Vanessa A. Morais.

Mota, Maria M.

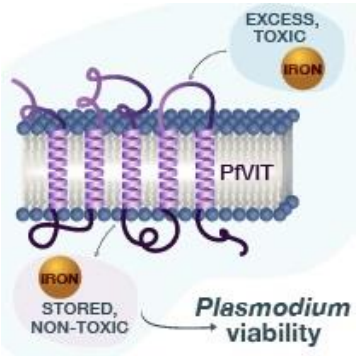
Major Interests / Objectives

Despite all eradication efforts, malaria is still a significant health burden, with nearly half the planet's population at risk of infection. The life-cycle of Plasmodium parasites within the human host has two stages. During the liver stage, invasion of a hepatocyte by a single Plasmodium sporozoite gives rise to thousands of new parasites, which will initiate the blood infection. Inside each infected erythrocyte 10-20 new parasites are generated in consecutive cycles of cell lysis and reinfection causing the malaria symptoms. Our research is focused on the Host-Plasmodium interactions that dictate the balance between parasite replication and human health, in particular, the liver stage-mediated activation of innate immunity and the influence of the host nutritional status on infection.

Head of Laboratory

Maria Manuel Mota, PhD

Graphic Abstract



Research Team

Ana Filipa Caetano Parreira	Graduate	Technician
Ana Margarida Aires Alves Vigário	PhD	Investigator, Assistant Professor
Ângelo António Ferreira Chaves do Rosário Chora	PhD	Post-Doctoral Investigator
Debanjan Mukherjee	PhD	PhD Student
Henrique Figueiredo de Serra Pereira	Graduate	MSc Student
Inês Fernandes Bento	PhD	Post-Doctoral Investigator
Iset Medina Vera	PhD	Post-Doctoral Investigator
João Tiago Carvalho Jordão de Mello Vieira	Master	PhD Student
Ksenija Slavic	PhD	Post-Doctoral Investigator

Lénia Marisa Pereira Rodrigues	PhD	Post-Doctoral Investigator
Leonardo Filipe Lemos Rocha	Master	MSc Student (Started June)
Liliana Mancio Silva	PhD	Post-Doctoral Investigator (Finished August)
Manuela Bernardi	Master	Lab Manager (Finished August)
Manuela Morgadinho Faustino Monteiro dos Santos	PhD	Consultant, Universidade de Montreal, Full Professor
Márcia Melo Medeiros	MD/PhD	Post-Doctoral Investigator (Finished June)
Margarida Maria Teles Grilo Ruivo	Master	Technician (Finished October)
Maria Inês Moreira Oliveira Leite Marreiros	Graduate	MSc Student
Maria Nogueira de Menezes	Master	Visiting PhD Student (Started May)
Miguel Dinis Monteiro dos Santos	Undergraduate	MSc Student
Priscila Lima dos Santos	PhD	Visiting Post-Doctoral Investigator (Finished November)
Sara de Jesus Santos Baptista	Master	PhD Student
Sonali Setua	PhD	Post-Doctoral Investigator
Sofia Pinto Guia Marques	PhD	Lab Manager
Tomás Furtado Lemos	Undergraduate	Trainee
Vanessa Alexandra Zuzarte Luís	PhD	Post-Doctoral Investigator
Viriato M'Bana	Master	PhD Student

Laboratory Keywords / Research Areas

Host-Plasmodium interactions, Host response to Plasmodium infection, Nutrient acquisition and nutrient sensing, Iron metabolism during Plasmodium infection, Plasmodium evasion mechanism to escape deleterious host responses, Cross-talking between liver and blood stages of infection.

Major Scientific Achievements

Our team has been developing several lines of research directed towards the elucidation of fundamental questions of Host-Plasmodium interactions. During 2016 we published two significant contributions that increase our knowledge on how Plasmodium interacts with its host:

The first, focus on a Plasmodium transporter, key to detoxify iron excess. Iron is an essential but highly toxic micronutrient. In other organisms, the vacuolar iron-transporter (VIT) family mediate iron detoxification. We showed that Plasmodium VIT homologue has a major role in iron detoxification and parasite development.

The second focuses on the manipulation of the host cell master regulator of energy homeostasis AMP-activated protein kinase (AMPK) by the parasite. Upon infection of hepatocytes AMPK activity is suppressed and dispensable. By contrast, an overactive AMPK is deleterious to the

parasite's intracellular growth. Overall, this work establishes a potential target for host-based antimalarial intervention.

Selected Publications

Slavic K, Krishna S, Lahree A, Bouyer G, Hanson KK, Vera i, Pittman JK, Staines HM, Mota MM (2016) A vacuolar iron-transporter homologue acts as a detoxifier in Plasmodium. Nat Commun. 7, 10403. (Journal IF: 11.39, Citations: 3).

Liehl P, Zuzarte-Luís V, Chan J, Zillinger T, Baptista F, Carapau D, Konert M, Hanson KK, Carret C, Lassnig C, Müller M, Kalinke U, Saeed M, Chora AF, Golenbock DT, Strobl B, Prudêncio M, Coelho LP, Kappe SH, Superti-Furga G, Pichlmair A, Vigário AM, Rice CM, Fitzgerald KA, Barchet W, Mota MM. (2014) Host-cell sensors for Plasmodium activate innate immunity against liver-stage infection. Nature Medicine 20 (1), 47-53. (Journal IF: 28.05, Citations: 48).

Itoe MA, Sampaio JL, Cabal GG, Real E, Zuzarte-Luis V, March S, Bhatia SN, Frischknecht F, Thiele C, Shevchenko A, Mota MM. (2014) Host Cell Phosphatidylcholine Is a Key Mediator of Malaria Parasite Survival during Liver Stage Infection. Cell Host Microbe 16(6), 778-86. (Journal IF: 12.19, Citations: 15).

Hanson KK, Ressurreição AS, Buchholz K, Prudêncio M, Herman-Ornelas JD, Rebelo M, Beatty WL, Wirth DF, Hänscheid T, Moreira R, Marti M, Mota MM. (2013) Torins are potent antimalarials that block replenishment of Plasmodium liver stage parasitophorous vacuole membrane proteins. Proc Natl Acad Sci U S A 110(30), E2838-E2847. (Journal IF: 9.81, Citations: 21).

Portugal S, Carret C, Recker M, Armitage AE, Gonçalves LA, Epiphanio S, Sullivan D, Roy C, Newbold CI, Drakesmith H, Mota MM. (2011) Host-mediated regulation of superinfection in malaria. Nature Medicine 17(6), 732-7. (Journal IF: 22.46, Citations: 109).

Ongoing Research Projects

2013/2016: Host-Plasmodium interactions: a tale of sensing and being sensed. Coordinator: Maria Manuel Mota. Agency: Fundação Ciência e Tecnologia. Reference: EXCL/IMI-MIC/0056/2012. Amount: 331463.00. Amount (total): 331463.00.

2013/2016: Engineered liver platforms to study regulation of host microRNA in Plasmodium liv. Coordinator: Iset Medina Vera. Agency: National Institute of Allergy and Infectious Disea. Reference: GRANT NUMBER: 1F32AI104252-01X1. Amount: 12379.94. Amount (total): 12379.94.

2012/2017: ParasiteNutriSensing: Nutrient sensing by parasites - 311502 ParasiteNutriSensing. Coordinator: Maria Manuel Mota. Agency: Comissão Europeia. Reference: ParasiteNutriSensing. Amount: 1500000.00. Amount (total): 1500000.00.

2016/2018: TWINNING (H2020) "Unleash iMM's research excellence in immunity and infection through twinning to infect Lisbon and Portugal with its increase in competitiveness and innovation" – TwinToInfect, financed by the European Commission. Coordinator: Maria M. Mota. Amount: 893.500,00. Amount (total): 999.996,25.

2016/2019: Evasão da autofagia da célula hospedeira: mecanismos de sobrevivência do Plasmodium na fase hepática da infecção. Coordinator: Maria Manuel Mota. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/BIM-MEC/1342/2014. Amount: 200000.00. Amount (total): 0.00.

Publications in Peer Review Journals

Tanowitz HB, Scherer PE, Mota MM, Figueiredo LM (2016). Adipose Tissue: A Safe Haven for Parasites? Trends Parasitol. Dec 19. pii: S1471-4922(16)30218-5. (Journal IF: 7.29, Citations: 0).

Ruivo MT, Vera IM, Sales-Dias J, Meireles P, Gural N, Bhatia SN, Mota MM, Mancio-Silva L (2016) Host AMPK Is a Modulator of Plasmodium Liver Infection. Cell Rep. Sep 6;16(10):2539-45. (Journal IF: 7.87, Citations: 0).

Slavic K, Krishna S, Lahree A, Bouyer G, Hanson KK, Vera I, Pittman JK, Staines HM, Mota MM. (2016) A vacuolar iron-transporter homologue acts as a detoxifier in Plasmodium. Nat Commun. Jan 20;7:10403. (Journal IF: 11,39, Citations: 3).

Invited Lectures and Seminars

Maria Mota, "Host-Plasmodium Interactions: a tale of sensing and being sensed", Delegation of European scientists to visit ICGEB, New Delhi, 2- 5 February 2016.

Maria Mota, Immunity and Persistence Discussion Leader at the conference on “Biology of Host-Parasite Interactions”, University in Newport, Rhode Island, 11-12 June 2016.

Maria Mota - “Host-cell intrinsic and extrinsic mechanisms of Plasmodium liver stage recognition”, EMBO | EMBL meeting on “Innate Immunity in Host-Pathogen Interaction”, Heidelberg, 29 June 2016.

Maria Mota,” Biology of Parasitism”, ¬Marine Biological Laboratory, University of Chicago, 30 June 2016.

Maria Mota, “The complexity and the simplicity of Host-Plasmodium interaction”, Seminar Series Max Planck Institute of Molecular Cell Biology and Genetics MPI-CBG, Dresden, 17 October 2016.

Maria Mota, “The complexity and the simplicity of Host-Plasmodium interactions”, EMBO Members' Meeting - EMBL Heidelberg, 26-28 October 2016.

Maria Mota, “The complexity and the simplicity of Host-Plasmodium interactions”, Spanish Society of Medicinal Chemistry GSK, Madrid, 17 November 2016.

Maria Mota, The complexity and the simplicity of Host-Plasmodium interactions” University Heidelberg, 19 December 2016.

Communications in International Conferences

Ruivo, Margarida, Host AMPK is a modulator of Plasmodium liver infection, 2th International ParaFrap Conference, Les Embiez Island, France, October 2016. (Poster Presentation)

Communications in National Conferences

M’Bana Viriato, Revealing the UIS4 Protein interacting network and its role during the Malaria liver stage infection. I Encontro Cientifico do PGCD, Instituto Gulbenkian de Ciência Oeiras, Portugal. Julho 16-17, 2016. (Oral Presentation)

Organisation of Conferences

Vanessa Zuzarte-Luís, Training Session for 2017 Chairs, Gordon Research Conferences, Amsterdam, Netherlands, 30-31 January 2016.

Patents / Prototypes

Title: METHODS FOR ATTENUATING PARASITE VIRULENCE PCT International Application No. PCT/IB2016/001523 Based on U.S. Provisional Patent Application Nos. 62/234,808 and 62/234,811 Applicant: INSTITUTO DE MEDICINA MOLECULAR.

Advanced Teaching

Maria M Mota e Vanessa Zuzarte-Luís, Pós-graduação Ciência para o Desenvolvimento- Vector-borne diseases course, Lisboa, Julho 2016.

Maria M Mota, Vanessa Zuzarte-Luís e Margarida Vigário, Mestrado em Microbiologia – Parasitas II, FMUL, Lisboa, Portugal, Maio 2016.

MSc Thesis Completed

Miguel Dinis Monteiro dos Santos 21/10/2016 Iron Man(ipulation): unravelling the iron responsive genes' network in malaria parasites. Faculdade de Ciências da Universidade de Lisboa Ksenija Slavic Octávio Paulo (FCUL).

Maria Inês Moreira Oliveira Leite Marreiros 27/07/2016 Characterization of Plasmodium methionine metabolism key enzymes Faculdade de Ciências da Universidade de Lisboa Vanessa Luís Maria Mota.

Oliveira, Sofia A.

Major Interests / Objectives

Our research focuses on understanding the genetic architecture of complex diseases such as Stroke, Behçet's Disease, Primary Spontaneous Pneumothorax, and Intracranial Aneurysms. Common diseases result from the interaction of environmental and genetic factors, and an in-depth evaluation of their genetic underpinnings will not only unravel complex inheritance patterns but will also enable a better understanding of the environmental risks. We use both traditional and new approaches to identify novel susceptibility genes. We believe that studies with a multifaceted and multidisciplinary framework will have the greatest success in dissecting the complex etiology of common disorders and that they will ultimately lead to the development of novel prevention strategies and targeted therapies.

Head of Laboratory

Ana Sofia Simões Domingues de Almeida Oliveira, MD/PhD

Research Team

Inês Girão Meireles de Sousa	PhD	Post-Doctoral Investigator (Left May)
Vânia Patrícia Ferreira Francisco	Master	Investigator

Laboratory Keywords / Research Areas

Genetics, Genomics, Complex traits.

Major Scientific Achievements

In 2014, we reported for the first time the association of the *FUT2* non-secretor phenotype with Behçet's disease (BD) in Iranian. *FUT2* encodes the alpha (1, 2) fucosyltransferase, which synthesizes the secreted H antigen, the precursor of the ABO blood group antigens in body fluids and the intestinal mucosa. Ancestry-specific non-secretor genotypes have also been associated with Crohn's disease risk, with the gut microbiome composition, and with predisposition to or resistance to different infectious agents. In 2016, our main achievement was the replication of the *FUT2* association with BD in independent populations, namely Turks (P=6.51E-09) and Japanese (P=6.50E-04). Meta-analysis of the two common *FUT2* non-secretor genotypes in Turks, Iranians and Japanese was highly significant (P=5.89E-15), providing evidence that ABO

non-secretion, particularly at mucosal surfaces, increases risk for Behçet's disease and implicates the microbial-host interface in disease pathogenesis.

Selected Publications

Malik R, Traylor M, Pulit SL, Bevan S, Hopewell JC, Holliday EG, Zhao W, Abrantes P, Amouyel P, Attia JR, Battey TW, Berger K, Boncoraglio GB, Chauhan G, Cheng YC, Chen WM, Clarke R, Cotlarciuc I, Debette S, Falcone GJ, Ferro JM, Gamble DM, Ilinca A, Kittner SJ, Kourkoulis CE, Lemmens R, Levi CR, Lichtner P, Lindgren A, Liu J, Meschia JF, Mitchell BD, Oliveira SA, Pera J, Reiner AP, Rothwell PM, Sharma P, Slowik A, Sudlow CL, Tatlisumak T, Thijs V, Vicente AM, Woo D, Seshadri S, Saleheen D, Rosand J, Markus HS, Worrall BB, Dichgans M; ISGC Analysis Group; METASTROKE collaboration; Wellcome Trust Case Control Consortium 2 (WTCCC2); NINDS Stroke Genetics Network (SiGN) (2016) Low-frequency and common genetic variation in ischemic stroke: The METASTROKE collaboration. Neurology 86, 1217-1226. (Journal IF: 8.166, Citations: 1).

Xavier JM, Shahram F, Sousa I, Davatchi F, Matos M, Abdollahi BS, Sobral J, Nadji A, Oliveira M, Ghaderibarim F, Shafiee NM, Oliveira SA (2015) FUT2: filling the gap between genes and environment in Behçet’s disease? Annals of the Rheumatic Diseases 74, 618-624. (Journal IF: 12.384, Citations: 10).

Krug T, Gabriel JP, Taipa R, Fonseca BV, Domingues-Montanari S, Fernandez-Cadenas I, Manso H, Gouveia L, Sobral J, Albergaria I, Gaspar G, Jiménez-Conde J, Rabionet R, Ferro JM, Montaner J, Vicente AM, Silva MR, Matos I, Lopes G, Oliveira SA (2012) Tetratricopeptide repeat domain 7B emerges as a novel risk factor for ischemic stroke through the convergence of several genome-wide approaches. Journal of Cerebral Blood Flow and Metabolism 32, 1061-1072. (Journal IF: 4.929, Citations: 11).

Xavier JM, Shahram F, Davatchi F, Rosa A, Crespo J, Abdollahi BS, Nadji A, Jesus G, Barcelos F, Patto JV, Shafiee NM, Ghaderibarim F, Oliveira SA (2012) Association study of IL10 and IL23R-IL12RB2 in Iranian Behçet’s disease patients. Arthritis & Rheumatism 64, 2761-2772. (Journal IF: 8.955, Citations: 33).

Traylor M, Farrall M, Holliday EG, Sudlow C, Hopewell JC, Cheng YC, Fornage M, Ikram MA, Malik R, Bevan S, Thorsteinsdottir U, Nalls MA, Longstreth W, Wiggins KL, Yadav S, Parati EA, Destefano AL, Worrall BB, Kittner SJ, Khan MS, Reiner AP, Helgadottir A, Achterberg S, Fernandez-Cadenas

I, Abboud S, Schmidt R, Walters M, Chen WM, Ringelstein EB, O'Donnell M, Ho WK, Pera J, Lemmens R, Norrving B, Higgins P, Benn M, Sale M, Kuhlenbäumer G, Doney AS, Vicente AM, Delavaran H, Algra A, Davies G, Oliveira SA, Palmer CN, Deary I, Schmidt H, Pandolfo M, Montaner J, Carty C, de Bakker PI, Kostulas K, Ferro JM, van Zuydam NR, Valdimarsson E, Nordestgaard BG, Lindgren A, Thijs V, Slowik A, Saleheen D, Paré G, Berger K, Thorleifsson G; The Australian Stroke Genetics Collaborative, Wellcome Trust Case Control Consortium 2 (WTCCC2), Hofman A, Mosley TH, Mitchell BD, Furie K, Clarke R, Levi C, Seshadri S, Gschwendtner A, Boncoraglio GB, Sharma P, Bis JC, Gretarsdottir S, Psaty BM, Rothwell PM, Rosand J, Meschia JF, Stefansson K, Dichgans M, Markus HS; on behalf of the International Stroke Genetics Consortium (2012) Genetic risk factors for ischaemic stroke and its subtypes (the METASTROKE Collaboration): a meta-analysis of genome-wide association studies. Lancet Neurology 11, 951-962. (Journal IF: 23.468, Citations: 155).

Ongoing Research Projects

2013/2016: Coordinator: Ana Sofia Simões Domingues de Almeida Oliveira. Agency: NEDAI. Reference: Prémio NEDAI 2012. Amount: 8506.39. Amount (total): 10000.00.

2014/2018: Technology, Entrepreneurship and Innovation Policy Lab. Coordinator: Ana Sofia Simões Domingues de Almeida Oliveira. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: CMUP-ERI/TPE/0028/2013. Amount: 89300.00. Amount (total): 350000.00.

Publications in Peer Review Journals

Malik R, Traylor M, Pulit SL, Bevan S, Hopewell JC, Holliday EG, Zhao W, Abrantes P, Amouyel P, Attia JR, Battey TW, Berger K, Boncoraglio GB, Chauhan G, Cheng YC, Chen WM, Clarke R, Cotlarciuc I, Debette S, Falcone GJ, Ferro JM, Gamble DM, Ilinca A, Kittner SJ, Kourkoulis CE, Lemmens R, Levi CR, Lichtner P, Lindgren A, Liu J, Meschia JF, Mitchell BD, Oliveira SA, Pera J, Reiner AP, Rothwell PM, Sharma P, Slowik A, Sudlow CL, Tatlisumak T, Thijs V, Vicente AM, Woo D, Seshadri S, Saleheen D, Rosand J, Markus HS, Worrall BB, Dichgans M; ISGC Analysis Group; METASTROKE collaboration; Wellcome Trust Case Control Consortium 2 (WTCCC2); NINDS Stroke Genetics Network (SiGN) (2016) Low-frequency and common genetic variation in ischemic stroke: The METASTROKE collaboration. Neurology 86, 1217 (Journal IF: 8.166, Citations: 1).

Rosa A, Abrantes P, Sousa I, Francisco V, Santos P, Francisco D, Xavier J, Oliveira SA (2016) Ulcerative colitis is under dual (mitochondrial and nuclear) genetic control. Inflammatory Bowel Diseases 22, 774 (Journal IF: 4.358, Citations: 1).

Sousa I, Abrantes P, Francisco V, Teixeira G, Monteiro M, Neves J, Norte A, Robalo Cordeiro C, Moura e Sá J, Reis E, Roquette J, Santos P, Oliveira M, Sousa S, Fradinho M, Malheiro F, Negrão L, Feijó S, Oliveira SA (2016) Multicentric genome-wide association study for primary spontaneous pneumothorax (The I-GASP Study). PLoS ONE 11, e0156103 (Journal IF: 3.057, Citations: 0).

Abrantes P, Rosa A, Francisco V, Sousa I, Xavier JM, Oliveira SA (2016) Mitochondrial genome association study with peripheral arterial disease and venous thromboembolism. Atherosclerosis 252, 97 (Journal IF: 3.942, Citations: 0).

Communications in International Conferences

Takeuchi M, Mizuki N, Meguro A, Ombrello M, Kirino Y, Satorius C, Le J, Erer B, Kawagoe T, Ustek D, Tugal-Tutkun I, Seyahi E, Ozyazgan Y, Sousa I, Davatchi F, Francisco V, Shahram F, Abdollahi B, Nadji A, Shafiee N, Ghaderibarmi F, Ohno S, Ueda A, Ishigatsubo Y, Oliveira S, Gül A, Kastner D, Remmers E. Dense genotyping of immune-related loci implicates host responses to microbial exposure in Behçet's disease susceptibility. 17th International Conference on Behçet's Disease, Matera, Italy, 15-17 Sep. 2016.

Internationalisation

Our research depends critically on the establishment effective collaborations with clinical groups for study design, sample ascertainment and collection, and clinical input. We have been able to establish these fruitful interactions with several teams nationwide and internationally, as demonstrated by the large and well-curated biobanks we have set-up in the past ten years and the ensuing research, grants, prizes and publications. The BD biobank was mostlly assembled by Iranian collaborators, while the PSP and IA samples were collected throughout Portugal.

We are also part of the METASTROKE international collaboration in the field of ischemic stroke genetics and are currently involved in the sequencing efforts of stroke patients and controls.

Advanced Teaching

Oliveira SA. Lecturer in the Mestrado em Doenças Metabólicas e do Comportamento Alimentar, FML, 23 January 2016.

Oliveira SA. Lecturer in the Mestrado de Neurociências, FML, 20 April 2016.

Oliveira SA. Lecturer in the Biomarkers and assay development course, FCT PhD Programme Medicines and Pharmaceutical Innovation (i3DU), 28 March 2016.

Prata, Diana

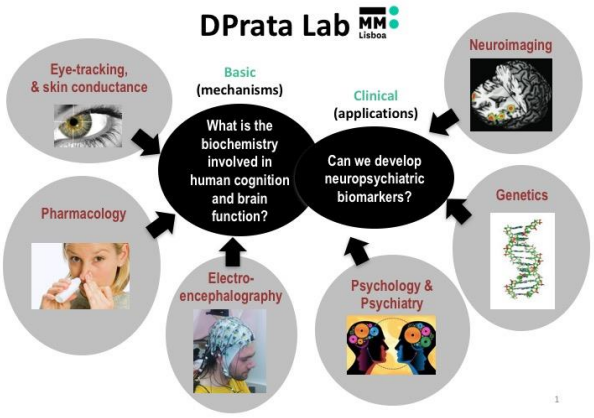
Major Interests / Objectives

Our interest is the molecular biology of human behavior, which we aim to translate into improving etiological and therapeutic models of neuropsychiatric disorders. We have reported on the influence of genetic variations on: mental illness risk, brain function/structure and drug treatment response. We are now majorly interested in: 1) the role of oxytocin in social cognition, and its relevance to psychosis, autism and anorexia; and 2) building clinically useful multimodal biomarkers for aiding clinical diagnostic and prognostic predictions. For this, we combine psychological and neuropharmacological experimentation with (epi)genetics, neuroimaging and psychophysiological tools - which is made possible by a diverse team of biophysics engineers, psychologists, biologists and psychiatrists.

Head of Laboratory

Diana Maria Pinto Prata, PhD, Assistant Professor, Assistant Professor, Superior de Ciências do Trabalho e da Empresa.

Graphical Abstract



Research Team

Ana Carina Pereira Mendes	Graduate	MSc Student (Started May)
Daniel Artur Abreu Martins	Master	Trainee
Duarte Manuel Catrola Palma Ferreira	Master	Investigator (Started July)
Júlia Monteiro Quintino dos Reis	No Degree	MSc Student (Left May)
Maria Inês Oliveira Casqueiro	Graduate	Trainee

Matilde Pós-de-Mina Pato	PhD	Trainee (Left May)
Mónica Gonçalves Barbeito Costa	Graduate	MSc Student
Vânia Sofia Santos Tavares	Master	Investigator

Laboratory Keywords / Research Areas

Neuroimaging, Genetics, Psychiatry, Social Cognition, Machine Learning Classification, Neuropharmacology.

Major Scientific Achievements

GL was invited (and accepted) for 2 positions: Visiting Lecturer at FMUL and at ISCTE; and awarded 5 prizes: Cohitec (Technology Commercialization Accelerator) - Caixa Capital Award (€100K), Bial Psychophysiology Grant (€50K), 'InovPortugal New Ideas B2B' Acredita Portugal 1st prize; Idea BornFromKnowledge prize, and iMM Lisboa Breakthrough Idea Grant (€98K).

The team got 6 awards: AstraZeneca-FMUL grant (D. Martins; €5K), EU Twinning Grant (Synanet Consortium, €1.000K); M2B PhD Fellowship, FCT Fellowship (V. Tavares), FCT PhD Fellowship (S. Nunes) and LisbonBioMed PhD Fellowship (D. Martins).

We published 5 international articles; and 3 national book chapters.

GL was invited for lectures/seminars/conferences in: I3S, ISPA (Neuroscience Club), FMUL, CAML, CEDOC, FCUL, Lusófona Guiné-Bissau, King's College London, University College London and University of Kuopio (Synanet Summerschol). Outreach by GL happened in Culturegest, SIC notícias, COMCept, Design the Future magazine.

Selected Publications

PRATA DP, Mechelli A, Kapur S. (2014) Clinically meaningful biomarkers for psychosis: a systematic and quantitative review. Neuroscience and Biobehavioural Reviews 45, 134. http://www.sciencedirect.com/science/article/pii/S0149763414001274. (Journal IF: 9.4, Citations: 15).

Prata DP, Mechelli A, Fu C, Picchioni M, Kane F, Kalidindi S, McDonald C, Kravariti E, Toulopoulou T, Bramon E, Walshe M, Murray R, Collier DA, McGuire PK. (2012) Effect of D-amino acid oxidase activator (DAOA; G72) on brain function during verbal fluency. Human Brain Mapping. 33, 143. http://www.ncbi.nlm.nih.gov/pubmed/21391259. (Journal IF: 7.1, Citations: 15).

PRATA DP, Mechelli A, Fu C, Picchioni M, Toulopoulou T, Bramon E, Walshe M, Murray R, Collier DA, McGuire P. (2009) Epistasis between the DAT 3'UTR VNTR and COMT Val158Met SNP on cortical function in healthy subjects and patients with schizophrenia. Proceedings of the National Academy of Sciences of the United States of America (PNAS). 106, 13600. http://www.pnas.org/content/106/32/13600.full. (Journal IF: 10.4, Citations: 65).

Prata DP, Mechelli A, Picchioni M, Fu C, Toulopoulou T, Bramon E, Walshe M, Murray R, Collier DA, McGuire. (2009) Altered effect of dopamine transporter 3'UTR VNTR genotype on prefrontal and striatal function in schizophrenia. Archives of General Psychiatry (now JAMA Psychiatry) 66, 1162. http://archpsyc.jamanetwork.com/article.aspx?articleid=210428. (Journal IF: 16.5, Citations: 27).

PRATA DP, Mechelli A, Fu C, Picchioni M, Kane F, Kalidindi S, McDonald C, Howes O, Kravariti E, Demjaha A, Toulopoulou T, Diforti M, Murray R, Collier DA, McGuire. (2009) Opposite effects of COMT Val158Met on cortical function in healthy subjects and patients with Schizophrenia. Biological psychiatry 6, 473. http://www.biologicalpsychiatryjournal.com/article/S0006-3223(08)01167-0/abstract. (Journal IF: 9.5, Citations: 57).

Ongoing Research Projects

2015/2018: Oxytocin and Dopamine Interplay in Humans – on the Biology of Social Cognition. Coordinator: Diana Maria Pinto Prata. Agency: Comissão Europeia. Reference: BIOSOCIOCOG. Amount: 100000.00. Amount (total): 100000.00.

2015/2020: Projeto de Investigação Exploratória. Coordinator: Diana Maria Pinto Prata. Agency: Fundação para a Ciência e a Tecnologia, IP. Coordinator Institution: 0. Reference: Projeto de Investigação Exploratória. Amount: 50000.00. Amount (total): 50000.00.

2016/2017: Breakthrough Idea Grant 2016 - Social and non-social reinforcement learning in humans: a model-based pharmaco-fMRI approach. Coordinator: Diana Maria Pinto Prata. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: BIG 2016 DPrata. Amount: 97335.00. Amount (total): 97335.00.

Other Projects

2015/2020: A multimodal biomarker to predict the onset of schizophrenia. Coordinator: Diana Prata.

2010/2020: Genetic underpinnings of brain activation during verbal fluency, grey and white matter structure and dopamine synthesis. Coordinator: Diana Prata.

2016/2018: Participation in project TWINNING (H2020) "Neurologic and Psychiatric disorders: from synapses to networks" – SynaNet, financed by the European Commission. Coordinator: Ana Sebastião.

Publications in Peer Review Journals

Mallas E, Carletti F, Chaddock C, Woolley J, Picchioni MM, Shergill S, Kane F, Allin M, Barker GJ, Prata DP. Genome-wide discovered psychosis-risk gene ZNF804A impacts on white matter microstructure in health, schizophrenia and bipolar disorder. PeerJ. 2016. 4:e1570; DOI 10.7717/peerj.1570.

Vassos E, Di Forti M, Coleman J, Iyegbe C, Prata D, Euesden J, O'Reilly P, Curtis C, Kolliakou A Patel H, Newhouse S, Traylor M, Ajnakina O; Mondelli V, Reis-Marques T, Gardner-Sood P, Aitchison K, Powell J, Atakan Z, Greenwood K, Smith S, Ismail K, Pariante C, Gaughran F, Dazzan P, Markus H; David A; Lewis C; Murray R, Breen G. An examination of polygenic score risk prediction in individuals with first episode psychosis. Biological Psychiatry. Priority Communication. In press. IF:10.2.

Martins D, Paloyelis Y, Prata D. "Shedding light on a dark question": Peripheral oxytocin signalling and neurobehavioral responses to intranasal oxytocin in humans. Psychoneuroendocrinology. In press. IF:4.7

Mallas E; Carletti F; Chaddock C; Shergill S; Woolley J; Picchioni M; McDonald C; Toulopoulou T; Kravariti E; Bramon E; Murray R; Barker G; Prata D. The impact of CACNA1C gene, and its epistasis with ZNF804A, on white matter microstructure in health, schizophrenia and bipolar disorder. Genes, Brain and Behaviour. In press.

Bianconi F, Bonomo M, Marconi A, Kolliakou A, Stilo S, Iyegbe C, Muñoz P, Homayoun S, Mondelli V, Luzi S, Dazzan P, Prata D, La Cascia C, O'Connor J, David A, Morgan C, Murray R, Lynskey M, Di Forti M. Differences in Cannabis-related Experiences between Patients with a First Episode of Psychosis and Controls. Psychological Medicine. 46(5):995-1003.

Other Publications National

Martins D & Prata D. A depressão está nos genes? Uma apreciação das bases genéticas e moleculares da depressão major. In A promoção da saúde mental e a prevenção da depressão e suicídio: foco estratégico na integração da saúde mental nos cuidados de saúde primários. EUTIMIA. Lisboa. In press.

Martins D & Prata D. Um cérebro deprimido? Alterações neuroimagiológicas na depressão major. In A promoção da saúde mental e a prevenção da depressão e suicídio: foco estratégico na integração da saúde mental nos cuidados de saúde primários. EUTIMIA. Lisboa. In press.

Martins D & Prata D. A suicidalidade está nos genes? Uma visão geral das bases genéticas e moleculares da suicidalidade. In A promoção da saúde mental e a prevenção da depressão e suicídio: foco estratégico na integração da saúde mental nos cuidados de saúde primários. EUTIMIA. Lisboa. In press.

Invited Lectures and Seminars

Prata, D. “A biologia das doenças psiquiátricas”, Universidade Lusófona de Guiné Bissau, Guiné-Bissau, Março 2016.

Tavares, T. "Machine Learning to develop Autism and Schizophrenia biomarkers", August 2016.

Prata, D. “O que há de novo no CAML? DPrata Lab” Centro Académico Medico de Lisboa (CAML), UL, Março 2016.

Prata, D. “When genetics, neuroimaging and psychiatry get social”, University College London (UCL), Março 2016.

Prata, D., Ferreira, H. Dec 2016. “Biomarkers of Neurological Illnesses”, Psychiatry Department, Hospital Amadora-Sintra, December 2016.

Prata, D. “Using pharmacology, imaging, genetic and psychophysiology at the service of Psychiatry research”, Psychiatry Department, Hospital Vila Franca de Xira, Portugal. May 2016.

Prata, D. “Neurobiology of creativity”, I3S, University of Porto, June 2016.

Prata, D. “When genetics, imaging and psychiatry get social” at Biological Sciences Annual Meeting (BIOSAM) meeting in FCUL, April 2016.

Communications in International Conferences

Prata, D. SynaNet 2016 Summer School on Machine Learning and Bioinformatics, University of Eastern Finland, Kuopio, Finland, Aug 2016 (Oral)

Prata, D. "When genetics, imaging and psychiatry get social" at 8th Workshop on Biomedical Engineering at Faculdade de Ciências, Universidade de Lisboa (FCUL), Apr 2016 (Oral)

Communications in National Conferences

Prata, D. "Humans on Oxytocin" Lisbon Social Neuroscience Club, Instituto Superior de Investigação em Psicologia (ISPA). May 2016.

Internationaliation

The group has several ongoing collaborations, some of which have involved training of lab members abroad or meetings at conferences:

- Within Synanet Twinning consortium, with Lancaster University (UK) for a structural and functional neuroimaging genetics study of the Neurexin gene in humans and mice.

- With Emory University (USA) for computational modelling of brain activation and behavoiural responses to intranasal oxytocin administration during a social dilema.

- With University College London (UK) for brain imaging, EEG and skin conductance responses during authenticity identification in human emotional vocalizations.

- With King's College London, to study the impact of psychosis polygenic risk scores on brain function and structure.

- With King's College London, for a clinical trial on the impact of TMS in recovery of anorexia nervosa inpatients.

- With Maastricht University, for impact of symptoms' self-report by psychiatric patients on diagnosis and prognosis improvement.

Prizes, Honours and Awards

Cohitec (Technology Commercialization Accelerator) - Caixa Capital Startup Award (€100.000; 2016-2017) to NeuroPsyCAD team.

Bial Psychophysiology Research Grant (€50.000) Portugal (2016-2018) to Diana Prata.

Idea prize to 10 best startup ideas, BornFromKnowledge (2016) to NeuroPsyCAD team and Daniel Martins.

'InovPortugal New Ideas B2B' award to Startup idea (2016; among >13000 competitors), Acredita Portugal, Portugal, to NeuroPsyCAD team.

iMM Lisboa Breakthrough Idea Grant (€98.000; 2016-2017), "Social and Non-Social Reinforcement Learning in Humans: A Model-Based Pharmaco-fMRI Approach" to Diana Prata.

PhD FCT Fellowship to Dr. Vânia Tavares by M2B Doctoral Programme.

PhD FCT Fellowship to Dr. Sandro Nunes.

FCT PhD Fellowship to Dr. Daniel Martins by LisbonBiomed Doctoral Programme.

AstraZeneca/FMUL grant to Dr. Daniel Martins.

Advanced Teaching

Prata, D. lectured on Neuroscience PhD Programme seminars. 2016.

Prata, D. lectured on LisbonBioMed PhD Programme seminars. 2016.

Prata, D. lectured on NeurUlisboa PhD Programme seminars. 2016.

Prata, D. lectured on Summer School on Machine Learning and Bioinformatics, University of Eastern Finland, Kuopio, Finland. 2016.

Prata, D. lectured at 8th Workshop on Biomedical Engineering at Faculdade de Ciências, Universidade de Lisboa (FCUL). 2016.

Science and Society

Prata, D. (2016) Public Talk at ComCeptCon, COMCEPT, conference "Esmiuçar o cérebro".

Prata, D. (2016) Public Talk at Culturegest "Empatia: Biologia ou Educação?".

Prata, D. (2016) Interview at Design the Future magazine.

Prata, D. (2016) TV Interview in News Night piece 'Reportagem Especial no Jornal da Noite SIC Notícias.

Tavares, V, Costa, M and Prata, D (2016) Talk to Vila Franca de Xira secondary School.

Martins, D, (2016), PuphD.

Prudêncio, Miguel

Major Interests / Objectives

Research Interests:

Our interests span a wide range of topics within the malaria field, with particular emphasis on the hepatic stage of infection. We are interested in elucidating novel aspects of the biology of Plasmodium infectioxn, unveiling novel host-parasite interactions, understanding co-infections between Plasmodium and other parasites, and developing new drug- and vaccine-based anti-malarial strategies.

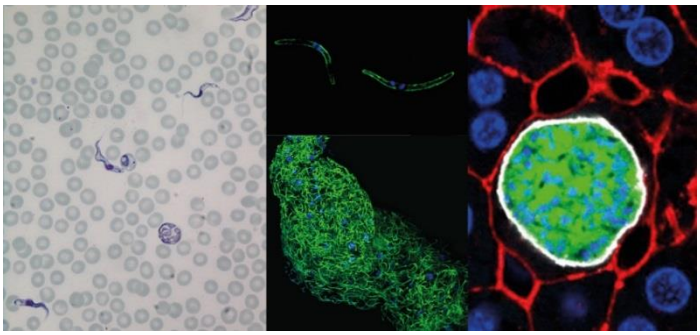
Research Areas:

- Nutrient acquisition and metabolism during Plasmodium development inside hepatic cells;
- Novel Host-Plasmodium molecular interactions;
- Identification of compounds active against Plasmodium liver stages;
- Malaria vaccines;
- The reciprocal influence of Plasmodium and Trypanosoma co-infections.

Head of Laboratory

Miguel Prudêncio, PhD.

Graphical Abstract



Research Team

Ana Catarina da Silva Franco	Graduate	Trainee (Started September)
Ana Filipa Gonçales Teixeira	Master	Investigator
Ana Margarida Roque Sanches Vaz	Master	PhD Student
António Manuel Barbeiro Mendes	PhD	Post-Doctoral Investigator
Carolina Morgado de Andrade	Master	MSc Student (Left July)
Cláudia Silva Marques	PhD	Post-Doctoral Investigator (Started February – Left July)

Diana Marisa Pinto Freire Fontinha	PhD	Investigator (Started March)
Inês Isabel Fernandes Gomes	PhD	Post-Doctoral Investigator
João Brito Sinfrónio	Graduate	MSc Student
Maria Inês Soares da Costa	Graduate	Trainee (Started September)
Marta Monteiro Maia Machado	Graduate	Investigator
Patrícia dos Santos Meireles	PhD	Post-Doctoral Investigator (Started December)
Pedro Gil Gameiro Eloy Sena Rego	Undergraduate	Trainee
Rafael Costa de Sousa	Undergraduate	Trainee
Raquel Alves de Azevedo	Master	MSc Student
Sarah Goellner	Graduate	Trainee
Sílvia Marina de Jesus Andrade	Master	Trainee

Laboratory Keywords / Research Areas

Malaria, Parasitology, Vaccines, Host-pathogen interactions, Liver-stage infection, Plasmodium.

Major Scientific Achievements

During 2016, the Prudêncio Lab and its members have:

- Published several papers in peer-reviewed, international journals;
- Been awarded a grant by PATH-Malaria Vaccine Initiative;
- Been awarded a grant by Merck to establish a new 3D cell platform for Plasmodium infection in collaboration with iBET;
- Pursued one international patent application (Genetically modified rodent Plasmodium parasites as platforms for a whole-organism malaria vaccine), now granted in several countries;
- Participated in several International and National conferences and meetings;
- Engaged in science outreach activities, mainly dedicated to children and adolescents;
- Had several media appearances in relation to its scientific activities.

In this period the lab has also established or furthered collaborations with several National and International research groups.

Selected Publications

António M Mendes, Inês S Albuquerque, Marta Machado, Joana Pissarra, Patrícia Meireles, Miguel Prudêncio (2016) Inhibition of Plasmodium liver infection by ivermectin. Antimicrobial Agents and Chemotherapy AAC. 02005-16, (Journal IF: 5, Citations: 1).

P. Meireles, J. Sales-Dias, C.M. Andrade, J. Mello-Vieira, L. Mancio-Silva, J.P. Simas, H.M. Staines, M. Prudêncio (2016) GLUT1-mediated glucose uptake plays a crucial role during Plasmodium hepatic infection. Cellular Microbiology (Journal IF: 5, Citations: 0).

P. Liehl, P. Meireles, I.S. Albuquerque, M. Pinkevych, F. Baptista, M.M. Mota, M.P. Davenport, M. Prudêncio (2015) Innate immunity induced by Plasmodium liver infection inhibits malaria reinfections. Infection and Immunity 83, 1172-1180. (Journal IF: 4.1, Citations: 8).

F.P. da Cruz, C. Martin, K. Buchholz K, M.J. Lafuente-Monasterio, T. Rodrigues, B. Sönnichsen, R. Moreira, F.J. Gamo, M. Marti, M.M. Mota, M. Hannus, M. Prudêncio (2012) Drug Screen Targeted at Plasmodium Liver Stages Identifies a Potent Multi-Stage Anti-Malarial Drug. J. Inf. Dis. 205, 1278-1286. (Journal IF: 5.8, Citations: 51).

M. Prudêncio, M.M. Mota, A.M. Mendes (2011) A toolbox to study liver stage malaria. Trends Parasitol 27, 565-574. (Journal IF: 5.3, Citations: 44).

Ongoing Research Projects

2015/2016: A P. berghei-based malaria vaccine. Coordinator: Miguel Prudêncio. Agency: PATH. Reference: MVI Project- malaria vaccine. Amount: 195000.00. Amount (total): 199000.00.

2015/2017: Plasmodium infection of 3D hepatic cell cultures. Coordinator: Miguel Prudêncio. Agency: IBET. Coordinator Institution: IBET. Coordinator PI: Dr. Paula Alves. Reference: Transgenic P. Berghei parasite Line. Amount: 75000.00.

2013/2016: Coordinator: Miguel Prudêncio. Agency: Bill & Melinda Gates Foundation. Reference: Bill & Melinda - Vaccine. Amount: 721053.33. Amount (total): 1130000.00.

2013/2017: Coordinator: Miguel Prudêncio. Agency: Banco Espirito Santo. Reference: Prémio Inovação BES categoria Saúde. Amount: 50000.00. Amount (total): 50000.00.

2016/2019: Melhoramento de vacinas de organismo inteiro contra a malária por modificação genética. Coordinator: Miguel Prudêncio. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/BBB-BMD/2695/2014. Amount: 197648.00. Amount (total): 197648.00.

Other Projects

2016/2018: Clinical study P. berghei-based vaccine. Coordinator: Miguel Prudêncio.

2016/2018: Participation in project TWINNING (H2020) “Unleash iMM’s research excellence in immunity and infection through twinning to infect Lisbon and Portugal with its increase in competitiveness and innovation” – TwinToInfect, financed by the European Commission. Coordinator: Maria M. Mota.

Publications in Peer Review Journals

A.M. Mendes, I.S. Albuquerque, M. Machado, J. Pissarra, P. Meireles, M. Prudêncio (2016) "Inhibition of Plasmodium liver infection by ivermectin", Antimicrobial Agents and Chemotherapy, in press.

M.A.S. Cavadas, M.P. Monopoli, C.S. Cunha, M. Prudêncio, E. Pereira, I. Lynch, K.A. Dawson, R. Franco (2016) "Unravelling Malaria Antigen Binding to Antibody-Gold Nanoparticle Conjugates", Particle & Particle Systems Characterization, 33, 906-915.

Carrasco M.P., Machado M., Gonçalves L., Sharma M., Gut J., Lukens A.K., Wirth D.F., André V., Duarte M.T., Guedes R.C., Dos Santos D., Rosenthal P.J., Mazitschek R., Prudêncio M., Moreira R. (2016) "Probing the Azaaurone Scaffold against the Hepatic and Erythrocytic Stages of Malaria Parasites", ChemMedChem, 11, 1-12.

P. Meireles, J. Sales-Dias, C.M. Andrade, J. Mello-Vieira, L. Mancio-Silva, J.P. Simas, H.M. Staines, M. Prudêncio (2016) "GLUT1-mediated glucose uptake plays a crucial role during Plasmodium hepatic infection", Cellular Microbiology, doi:10.1111/cmi.12646.

R. Ferraz, J. Noronha, F. Murtinheira, F. Nogueira, M. Machado, M. Prudêncio, S. Parapini, S. D’Alessandro, C. Teixeira, A. Gomes, C. Prudêncio, P. Gomes (2016) "Primaquine-based ionic liquids as a novel class of antimalarial hits", RSC Advances, 6, 56134-56138.

T.S. Macedo, L.C. Vegas, M. Paixão, M. Navarro, B.C. Barreto, P.C.M. Oliveira, S.G. Macambira, M. Machado, M. Prudêncio, S. D’Alessandro, N. Basilico, D.R.M. Moreira, A.A. Batista, M.B.P. Soares (2016) "Chloroquine-containing organoruthenium complexes are fast-acting multistage antimalarial agents", Parasitology, 143, 1543-1556.

C.J.A. Ribeiro, M. Espadinha, M. Machado, J. Gut, L.M. Gonçalves, P.J. Rosenthal, M. Prudêncio, R. Moreira, M.M.M. Santos (2016) "Novel squaramides with in vitro liver stage antiplasmodial activity", Bioorg. Med. Chem., 24, 1786-1792.

N. Terzi, J. Konstantinovi, M. Tot, J. Burojevi, O. Djurkovi-Djakovi, J. Srbljanovi, T. Štajner, T. Verbi, M. Zlatovi, M. Machado, I.S. Albuquerque, M. Prudêncio, R.J. Sciotti, S. Pecic, S. D'Alessandro, D. Taramelli, B.A. Šolaja (2016) "Re-investigating old pharmacophores: Are 4-aminoquinolines and tetraoxanes potential two-stage antimalarials?", J. Med. Chem., 59, 264-281.

Communications in International Conferences

Prudêncio, M. A rodent Plasmodium platform for immunization against human malaria, Malaria Vaccines for the World 2016, Leiden, The Netherlands. 2-4 May 2016. (Oral Presentation)

Communications in National Conferences

Prudêncio, M. A New Malaria Vaccine Enters Clinical Trials, IMM Pharmacology Series, Instituto de Medicina Molecular, Lisbon, Portugal. 12 December 2016.

Prudêncio, M. Entering Phase I Clinical Trials with a New Malaria Vaccine Candidate", IMM Internal Seminar, Instituto de Medicina Molecular, Lisbon, Portugal. 30 November 2016.

Prudêncio, M. "Vacinação contra a malária: situação atual e novas abordagens", O que há de novo no CAML?, Faculdade de Medicina de Lisboa, Lisbon, Portugal. 17 October 2016.

Prudêncio, M. Malaria: Unmet "Medical Needs and The Urgent Need for a Vaccine", Ciência 2016 - Encontro com a Ciência e Tecnologia em Portugal, Lisbon, Portugal. 4-6 July 2016.

Internationalisation

The research group is a member of the TwinnToInfect project, a Horizon 2020 funded project which provides Instituto de Medicina Molecular (iMM Lisboa) the opportunity to integrate the European circle of research excellence institutions by cementing a sustainable science, technology and innovation network with two internationally-leading organisations in the immunity and infection area of research, the Institut Pasteur and the Francis Crick Institute.

Advanced Teaching

MP - "Whole-organism pre-erythrocytic malaria vaccines: concepts, approaches and alternatives", Lisbon BioMed PhD Course, February 2016.

MP - "Scientific writing", Biomolecular Methods, Masters in Molecular Biology and Genetics, October 2016.

MP - "Biomolecular Methods for Malaria Research", Clinical Biochemistry, Masters in Biochemstry Course, June 2016.

MP - "Animal models in malaria research", Evolutionary Biology and Development Masters Course, October 2016.

PhD Thesis Completed

Patrícia dos Santos Meireles 09/05/2016 Nutrient uptake and metabolism in Plasmodium-infected hepatic cells Universidade de Lisboa Miguel Prudêncio.

MSc Thesis Completed

Raquel Azevedo 22/11/2016 Development of a new in vitro assay for screening malaria transmission blocking compounds Instituto de Higiene e Medicina Tropical Miguel Prudêncio António Mendes.

Ramirez, Mário

Major Interests / Objectives

We aim to understand the dynamics of populations of bacterial pathogens and how they respond to selective forces. We focus on the effect of antimicrobial use, human vaccination and host diversity on bacterial populations. We are also exploring the relationships between commensal and disease causing populations of the same bacterial pathogen with the aim of identifying particularly successful clones at causing disease as well as successful colonizers for further characterization. A strong bioinformatics effort in the area of bacterial genomics, microbial typing data sharing, data analysis and visualization tools is ongoing. The development of novel laboratory methodologies for the diagnosis of infectious diseases is also an active area of research.

Head of Laboratory

Mário Nuno Ramos d'Almeida Ramirez, PhD.

Research Team

Adriana Domingos Policarpo	Graduate	MSc Student (Left October)
Ana Isabel Aquino Friães	PhD	Principal Investigator
Ana Marta Fernandes Bica	Undergraduate	Trainee
Andreia das Neves Horácio	Master	PhD Student
Anne Jamet	MD/PhD	Post-Doctoral Investigator (Left August)
Bruno Filipe Ribeiro Gonçalves	Graduate	PhD Student
Catarina Costa	PhD	Principal Investigator
Catarina Inês Marques de Sousa Mendes	Graduate	Investigator
Catarina Teresa Condinho Pato	Master	PhD Student
Clara Renata Rodrigues Martinho	Undergraduate	Undergraduate (Started April)
Denise Rodrigues Francisco	Graduate	MSc Student
Elisabete Martins	PhD	Post-Doctoral Investigator
Elísia Graciela da Silva Lopes	Master	Investigator
Fábio Filipe dos Santos Luz	Graduate	MSc Student, NA (Left January)
Gabriela Alexandra Rodrigues Simões	Graduate	MSc Student (Started October)
Jéssica Fonseca Lisboa	Graduate	Trainee (Started July)
Joana Alexandra Pimento Lopes	Graduate	Technician
Joana Filipa Gomes da Silva	Master	Investigator (Started November)
João André Nogueira Custódio Carriço	PhD	Principal Investigator
Jorge Fernandes da Silva João	Undergraduate	Trainee
Jorge Miguel Diamantino Miranda	Master	PhD Student
José Augusto Gamito Melo Cristino	MD/PhD	Principal Investigator
Liliana Sofia Cardoso	No degree	Investigator
Marcos Daniel Caetano Borges de Pinho	PhD	Principal Investigator
Maria João Rua Frias	PhD	Post-Doctoral Investigator (Left January)
Maria Sousa Rebelo	Master	PhD Student
Mickael Santos da Silva	Master	Investigator

Miguel Alexandre Ferreira Maia Barbosa	Undergraduate	Undergraduate
Miguel Paulo Machado	Master	Investigator (Started May)
Raquel Baptista Arinto Garcia	Master	Investigator
Rita Santinho Grenho	Graduate	MSc Student
Soraia Cristina Lopes Vieira	Graduate	MSc Student
Tânia Patrícia Martins Fernandes	Master	Investigator (Left April)
Thomas Hanscheid	MD/PhD	Principal Investigator

Laboratory Keywords / Research Areas

Population biology and genomics, Bioinformatics, Detection of antimalarial drug resistance, Molecular epidemiology, Diagnostic tools, Antibiotic resistance.

Major Scientific Achievements

Establishment of the key role of the capsule for S. agalactiae infection in fish.

Creation of an online version of our software PHYLOViZ allowing seamless integration with online data sources.

Identification of a lineage of S. dysgalactiae exclusively responsible for infections in horses.

Characterization of S. agalactiae infections in adults in Iceland revealed an increasing trend and a possible zoonotic source of some infections.

Documentation of continuing changes in S. pneumoniae causing invasive infections with vaccination and that suggest that vaccination may not be equally effective for all serotypes.

Development of a novel and easy haemozoin inhibition assay to assess emerging artemisinin resistance.

Evaluation of a novel magneto-optical hemozoin detection method for and sensitivity testing.

Selected Publications

Aguiar, S.I., M. Brito, Horácio, A. N., J. Lopes, M. Ramirez, J. Melo-Cristino, and Portuguese Group for the Study of Streptococcal Infections and the Portuguese Study Group of Invasive Pneumococcal Disease of the Paediatric Infectious Disease Society. (2014) Decreasing incidence and changes in serotype distribution of invasive pneumococcal disease in persons aged under 18 years since introduction of 10-valent and 13-valent conjugate vaccines in Portugal, July 2008

to June 2012. Euro Surveill 19, pii: 20750. http://www.ncbi.nlm.nih.gov/pubmed/24698140. (Journal IF: 5.983, Citations: 13).

Silva-Costa, C., J. A. Carriço, M. Ramirez, and J. Melo-Cristino. (2014) Scarlet fever is caused by a limited number of Streptococcus pyogenes lineages and is associated with the exotoxin genes ssa, speA and speC. Pediatr Infect Dis J 33, 306-10. http://www.ncbi.nlm.nih.gov/pubmed/24168973. (Journal IF: 2.587, Citations: 9).

Rebelo, M., C. Sousa, H. M. Shapiro, M. M. Mota, M. P. Grobusch, and T. Hänscheid (2013) A novel flow cytometric hemozoin detection assay for real-time sensitivity testing of Plasmodium falciparum. PLoS ONE 8:e61606 e61606. http://www.ncbi.nlm.nih.gov/pubmed/23637865. (Journal IF: 3.234, Citations: 7).

Carriço J. A., Sabat A., Friederich A., Ramirez M., on behalf of the ESCMID Study Group for Epidemiological Markers (ESGEM) (2013) Bioinformatics in bacterial molecular epidemiology and public health: databases, tools and the next-generation sequencing revolution. Euro Surveill 18, pii=20382. http://www.ncbi.nlm.nih.gov/pubmed/23369390. (Journal IF: 5.983, Citations: 13).

Melo-Cristino J., C. Resina, V. Manuel, L. Lito, M. Ramirez (2013) First case of infection with vancomycin-resistant Staphylococcus aureus in Europe. The Lancet 382, 205. http://www.ncbi.nlm.nih.gov/pubmed/23791472. (Journal IF: 44.002, Citations: 31).

Ongoing Research Projects

2013/2016: Coordinator: Thomas Hanscheid. Agency: Steris Corporation. Reference: IFDO Research. Amount: 13000.00. Amount (total): 11000.00.

2016/2019: The changing pneumococci: adapting to vaccination and transitioning between colonization and disease. Coordinator: José Augusto Gamito Melo Cristino. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/DTP-EPI/1555/2014. Amount: 179000.00. Amount (total): 179000.00.

Other Projects

2016/2019: BacGenTrack – An integrated system for Bacterial Genome Tracking using high throughput sequencing technology: from identification to visualization. Coordinator: João André Carriço.

2016/2018: INNUENDO: A novel cross-sectorial platform for the integration of genomics in surveillance of foodborne pathogens. Coordinator: J. A. Carriço.

Publications in Peer Review Journals

Horácio AN, Silva-Costa C, Lopes JP, Ramirez M, Melo-Cristino J, Portuguese Group for the Study of Streptococcal Infections. 2016. Serotype 3 remains the leading cause of invasive pneumococcal disease in adults in Portugal (2012-2014) despite continued reductions in other 13-valent conjugate vaccine serotypes. Front Microbiol 7:1616. [IF= 4.165, Times cited 0].

Barato P, Martins ER, Vasquez GM, Ramirez M, Melo-Cristino J, Martínez N, Iregui C. 2016. Capsule impairs efficient adherence of Streptococcus agalactiae to intestinal epithelium in tilapias Oreochromis sp. Microb Pathog. 100:30–36. [IF= 1.888, Times cited 0].

Pinho MD, Erol E, Ribeiro-Gonçalves B, Mendes CI, Carriço JA, Matos SC, Preziuso S, Luebke-Becker A, Wieler LH, Melo-Cristino J, Ramirez M. 2016. Beta-hemolytic Streptococcus dysgalactiae strains isolated from horses are a genetically distinct population within the Streptococcus dysgalactiae taxon. Sci Rep 6:31736. [IF= 5.228, Times cited 0].

Costa SS, Palma C, Kadlec K, Fessler A T, Viveiros M, Melo-Cristino J, Schwarz S, Couto I. 2016. Plasmid-borne antimicrobial resistance of Staphylococcus aureus isolated in a hospital in Lisbon, Portugal. Microb Drug Resist. 22:617–626. [IF= 2.529, Times cited 0].

Mottola C, Matias CS, Mendes JJ, Melo-Cristino J, Tavares L, Cavaco-Silva P, Oliveira M. 2016. Susceptibility patterns of Staphylococcus aureus biofilms in diabetic foot infections. BMC Microbiol 16:119. [IF= 2.581, Times cited 0].

Horácio AN, Silva-Costa C, Diamantino-Miranda J, Lopes JP, Ramirez M, Melo-Cristino J, Portuguese Group for the Study of Streptococcal Infections. 2016. Population structure of Streptococcus pneumoniae causing invasive disease in adults in Portugal before PCV13 availability for adults: 2008-2011. PLoS ONE 11:e0153602. [IF= 3.057, Times cited 0].

Ribeiro-Gonçalves B, Francisco AP, Vaz C, Ramirez M, Carriço JA. 2016. PHYLOViZ Online: web-based tool for visualization, phylogenetic inference, analysis and sharing of minimum spanning trees. Nucleic Acids Res. 44:W246-251. [IF= 9.202, Times cited 0].

Vieira S, Belo S, Hänscheid T. 2016. Ziehl-Neelsen in schistosomiasis: much more than staining the shell and species identification. Am J Trop Med Hyg 94:699–700. [IF= 2.453, Times cited 0].

Rebelo M, Hänscheid T. 2016. Flow Cytometry for Antimalarial Drug Testing: More than Meets the Eye. J Clin Microbiol 54:817. [IF= 3.631, Times cited 0].

Mottola C, Semedo-Lemsaddek T, Mendes JJ, Melo-Cristino J, Tavares L, Cavaco-Silva P, Oliveira M. 2016. Molecular typing, virulence traits and antimicrobial resistance of diabetic foot staphylococci. J Biomed Sci 23:33. [IF= 2.935, Times cited 2].

Rebelo M, Grenho R, Orban A, Hänscheid T. 2016. Transdermal diagnosis of malaria using vapor nanobubbles. Emerging Infect Dis 22:343–344. [IF= 6.994, Times cited 3].

Hänscheid T, Carvalho T, Grobusch MP. 2016. Hemozoin detection for human malaria diagnosis investigated in rodent models: how similar is similar? Trends Parasitol. 32: 94–96 [IF= 7.295, Times cited 1].

Pires D, Zagalo A, Santos C, Cota de Medeiros F, Duarte A, Lito L, Melo-Cristino J, Caldeira L. 2016. Evolving epidemiology of carbapenemase-producing Enterobacteriaceae in Portugal: 2012 retrospective cohort at a tertiary hospital in Lisbon. J Hosp Infect 92:82–85. [IF= 2.655, Times cited 0].

Björnsdóttir ES, Martins ER, Erlendsdóttir H, Haraldsson G, Melo-Cristino J, Kristinsson KG, Ramirez M. 2016. Changing epidemiology of group B streptococcal infections among adults in Iceland: 1975-2014. Clin Microbiol Infect. 22:379.e9-379.e16. [IF= 4.575, Times cited 1].

Other Publications National

Hanscheid T. 2016. News about malaria. The Good, The Bad and the Ugly. (Editorial). Infecção & Sepsis; 2: 5-9.

Invited Lectures and Seminars

Melo Cristino J. 2016. Microbiologia e Infecção. Congresso Nacional VIH, Doenças Infecciosas e Microbiologia Clínica, Coimbra, 30 novembro a 2 dezembro 2016.

Melo Cristino J. 2016. Resistência aos antibióticos, situação em Portugal. Infecção e Doenças Infecciosas. Centro de Ciência do Café, Campo Maior, 14 de maio.

Melo Cristino J. 2016. Plano de publicações de Portugal para o Mundo. Medicina Farmacêutica, O sucesso em Medical Affairs. Lisboa, 25 novembro.

Melo Cristino J. 2016. Infecção pneumocócica em Portugal. Impacto da vacinação. J. Melo Cristino. 10ªs Jornadas de Atualização em Doenças respiratórias do Norte para Medicina Familiar. Porto, 13 e 14 de outubro.

Melo Cristino J. 2016. Antibióticos e Resistência. J. Melo Cristino. 11º Curso Pós-Graduado em Doenças Infecciosas. Lisboa, 17 de outubro.

Melo Cristino J. 2016. Avaliação da susceptibilidade e resistência aos antibióticos. Jornadas de Pediatria, Évora. 14 de abril.

Ramirez M. 2016. Novos serotipos: implicações na prática clínica. 13º Encontro de Infecciologia Pediátrica - Novas ou velhas doenças? (Invited oral presentation), Coimbra, Portugal, 7th October.

Carrico JA. 2016. How can we design actionable virulome databases? (S104). 26th European Congress of Clinical Microbiology and Infectious Diseases (ECCMID), Amsterdam, Netherlands, 9-12 April.

Carrico JA. 2016. Computational resources in infectious disease (M349) 26th European Congress of Clinical Microbiology and Infectious Diseases (ECCMID), Amsterdam, Netherlands, 9-12 April.

Hanscheid T. 2016 Medicina alternativa e doenças infecciosas- afinal, o que é que (cientificamente) sabemos? Infecção e doenças infecciosas 2016, Campo Maior, 14th May.

Communications in International Conferences

Silva-Costa C, Aguiar S, Pinho M, Friães A, Ramirez M, Melo-Cristino J, The Portuguese Group for the Study of Streptococcal Infections, The Portuguese Study Group of Invasive Pneumococcal

Disease of the Pediatric Infectious Disease Society. 2016. High prevalence of serotype 3 in pneumococcal isolates causing complicated pneumonia and empyema in Portugal (2010-2015) (20.169). International Meeting on Emerging Diseases and Surveillance (IMED 2016). Viena, Austria, 4th–7rd November. (Poster)

Horácio AN, Silva-Costa C, Lopes JP, Ramirez M, Melo-Cristino J, The Portuguese Group for the Study of Streptococcal Infections and The Portuguese Study Group of Invasive Pneumococcal Disease of the Paediatric Infectious Disease Society. 2016. Serotypes and Antimicrobial Resistance of Isolates Causing Invasive Pneumococcal Disease in Adult Patients in Portugal After the 13-Valent Conjugate Vaccine Received an Adult Indication - 2012-2014 (P789). IDWeek 2016. New Orleans, LA, USA, 26-30th October. (Poster)

Pinho MD, Erol E, Matos SC, Preziuso S, Luebke-Becker A, Wieler LH, Melo-Cristino J, Ramirez M. 2016. Beta-hemolytic Streptococcus dysgalactiae subsp. equisimilis strains isolated from horses are a genetically distinct population within the Streptococcus dysgalactiae taxon (P9). 3rd German Pneumococcal and Streptococcal Symposium, Braunschweig, Germany, 9-10th September. (Poster)

Horácio AN, Lopes JP, Ramirez M, Melo-Cristino J, Portuguese Group for the Study of Streptococcal Infections. 2016. Dynamics of non-invasive pneumococcal pneumonia in adults in Portugal – 2012-2014 (P8). 3rd German Pneumococcal and Streptococcal Symposium, Braunschweig, Germany, 9-10th September. (Poster)

Silva-Costa C, Horácio AN, Lopes JP, Ramirez M, Melo-Cristino J, The Portuguese Group for the Study of Streptococcal Infections and The Portuguese Study Group of Invasive Pneumococcal Disease of the Paediatric Infectious Disease Society. 2016. Isolates expressing PCV13 serotypes are still the leading cause of pediatric invasive pneumococcal disease in Portugal (P169). 10th International Symposium on Pneumococci and Pneumococcal Diseases – ISPPD10, Glasgow, Scotland, 26-30th June. (Poster)

Horácio AN, Lopes JP, Ramirez M, Melo-Cristino J, Portuguese Group for the Study of Streptococcal Infections. 2016. Non-invasive pneumococcal pneumonia in adults in Portugal after extensive use of the 13-valent pneumococcal conjugate vaccine in children, 2012-2014 (P677). 10th International Symposium on Pneumococci and Pneumococcal Diseases – ISPPD10, Glasgow, Scotland, 26-30th June. (Poster)

Horácio AN, Silva-Costa C, Diamantino-Miranda J, Lopes JP, Ramirez M, Melo-Cristino J, Portuguese Group for the Study of Streptococcal Infections. 2016. CC156 persisted as the major cause of adult IPD in Portugal in the late post-PCV7 period despite being mostly composed of isolates expressing PCV7 serotypes (P521). 10th International Symposium on Pneumococci and Pneumococcal Diseases – ISPPD10, Glasgow, Scotland, 26-30th June. (Poster)

Horácio AN, Silva-Costa C, Lopes JP, Ramirez M, Melo-Cristino J, Portuguese Group for the Study of Streptococcal Infections. 2016. Serotype and antimicrobial resistance of isolates causing invasive pneumococcal disease in adults in Portugal (2012-2014) (P630). 10th International Symposium on Pneumococci and Pneumococcal Diseases – ISPPD10, Glasgow, Scotland, 26-30th June. (Poster)

Levy E, Gilad N, Gordon M, Marchaim D, Carrico JA, Ziv-Ukelson M, Chalifa-Caspi V, Moran-Gilad J. 2016. Streamlined genomic approaches for studying virulence markers in Acinetobacter baumannii (Ab) (5260) 26th European Congress of Clinical Microbiology and Infectious Diseases (ECCMID), Amsterdam, Netherlands, 9-12 April. (Poster)

Martins ER, Fernandes T, Lopes E, Melo-Cristino J, Ramirez M. 2016. Changing serotypes of Streptococcus agalactiae causing invasive infections in adults in Portugal (2009-2014) (EP0089). 26th European Congress of Clinical Microbiology and Infectious Diseases (ECCMID), Amsterdam, Netherlands, 9-12 April. (Poster)

Martins ER, Melo-Cristino J, Ramirez M. 2016. Group B streptococcal (GBS) colonization among non-pregnant adults in Portugal: prevalence, serotypes, genetic lineages and resistance (EP0107). 26th European Congress of Clinical Microbiology and Infectious Diseases (ECCMID), Amsterdam, Netherlands, 9-12 April. (Poster)

Martins ER, Roussado C, Melo-Cristino J, Ramirez M. 2016. Diversification and emerging resistance among the hypervirulent CC17 clone of Streptococcus agalactiae (EV0283). 26th European Congress of Clinical Microbiology and Infectious Diseases (ECCMID), Amsterdam, Netherlands, 9-12 April. (Poster)

Martins ER, Roussado C, Melo-Cristino J, Ramirez M. 2016. Infections by Streptococcus agalactiae among neonates in Portugal: 2005-2014 (EV0577). 26th European Congress of Clinical Microbiology and Infectious Diseases (ECCMID), Amsterdam, Netherlands, 9-12 April. (Poster)

Björnsdóttir ES, Martins ER, Erlendsdóttir H, Haraldsson G, Melo-Cristino J, Ramirez M, Kristinsson KG. Group B streptococcal neonatal infections in Iceland: 1979-2014 (P0981). 26th European Congress of Clinical Microbiology and Infectious Diseases (ECCMID), Amsterdam, Netherlands, 9-12 April. (Poster)

Caneiras C, Lito L, Melo-Cristino J, Duarte A. 2016. Virulence profile evolution in Klebsiella pneumoniae isolates: from TEM-1 to KPC-3 (P1745). 26th European Congress of Clinical Microbiology and Infectious Diseases (ECCMID), Amsterdam, Netherlands, 9-12 April. (Poster)

Silva M, Ramirez M, Carriço JA, Gilad N, Gordon M, Chalifa-Caspi V, Moran-Gilad J. 2016. Appraisal of complementary strategies for refinement of a Core Genome Multi¬Locus Sequence Typing of Acinetobacter baumannii. 11th International Meeting on Microbial Epidemiological Markers (IMMEM XI), Estoril, Portugal, 8-11 March. (Poster)

Ribeiro-Gonçalves B, Francisco AP, Vaz C, Ramirez M, Carriço JA. 2016. PHYLOViZ Online: Web-based phylogenetic data analysis and visualization for allelic profiles and SNP data (PO14). 11th International Meeting on Microbial Epidemiological Markers (IMMEM XI), Estoril, Portugal, 8-11 March. (Poster)

Martins ER, Roussado C, Melo-Cristino J, Ramirez M. 2016. Ongoing evolution in the hypervirulent CC17 clone of Streptococcus agalactiae (P040). 11th International Meeting on Microbial Epidemiological Markers (IMMEM XI), Estoril, Portugal, 8-11 March. (Poster)

Horácio AN, Silva-Costa C, Diamantino-Miranda J, Lopes JP, Ramirez M, Melo-Cristino J, Portuguese Group for the Study of Streptococcal Infections. 2016. Expansion of previouly circulating clones underlies the replacement of pneumococcal serotypes in adult invasive pneumococcal disease following the introduction of PCV7 in Portugal (OP30). 11th International Meeting on Microbial Epidemiological Markers (IMMEM XI), Estoril, Portugal, 8-11 March. (Oral Presentation)

Caneiras C, Lito L, Melo-Cristino J, Duarte A. 2016. Antimicrobial resistance and virulence profile in community and hospital-acquired urinary tract infections caused by Klebsiella pneumoniae (PO27). 11th International Meeting on Microbial Epidemiological Markers (IMMEM XI), Estoril, Portugal, 8-11 March. (Poster)

Coutinho CP, Moreira AS, Hassan AA, dos Santos SC, Barreto C, Pereira L, Azevedo P, Lito L, Melo-Cristino J, Sá-Correia I. 2016. Two decades of epidemiological surveillance of Burkholderia

cepacia complex bacteria in respiratory infections at a Portuguese cystic fibrosis center (PO44). 11th International Meeting on Microbial Epidemiological Markers (IMMEM XI), Estoril, Portugal, 8-11 March. (Poster)

Caneiras C, Lito L, Melo-Cristino J, Duarte A. 2016. Molecular epidemiology of Klebsiella pneumoniae: multiclonal dissemination of CTX-M-15 extended spectrum b-lactamase (PO62). 11th International Meeting on Microbial Epidemiological Markers (IMMEM XI), Estoril, Portugal, 8-11 March. (Poster)

Communications in National Conferences

Silva M, Ramirez M, Carriço JA. 2016. A proposal for a high throughput pipeline for a bacterial core genome Multilocus Sequence Typing allele calling. Bioinformatics Open Days, Braga, Portugal, 18-19 February. (Poster)

Ribeiro-Gonçalves B, Francisco AP, Vaz C, Ramirez M, Carriço JA. 2016. PHYLOViZ Online: Web-based phylogenetic data analysis and visualization for allelic profiles and SNP data. Bioinformatics Open Days, Braga, Portugal, 18-19 February. (Oral Presentation)

Machado MP, Silva M, Ribeiro-Gonçalves B, Carriço JA, Ramirez M. 2016. ReMatCh: An efficient tool for targeted discovery of allelic variants on European Nucleotide Archive public datasets. Bioinformatics Open Days, Braga, Portugal, 18-19 February. (Oral Presentation)

Organisation of Conferences

Carriço J. Conference Chair. 11th International Meeting on Microbial Epidemiological Markers (IMMEM XI), Estoril, Portugal, 8-11 March.

Carriço J. Member Scientific Committee. 11th International Meeting on Microbial Epidemiological Markers (IMMEM XI), Estoril, Portugal, 8-11 March.

Carriço J. Member Local Organizing Committee. 11th International Meeting on Microbial Epidemiological Markers (IMMEM XI), Estoril, Portugal, 8-11 March.

Ramirez M. Member Scientific Committee. 11th International Meeting on Microbial Epidemiological Markers (IMMEM XI), Estoril, Portugal, 8-11 March.

Ramirez M. Member Local Organizing Committee. 11th International Meeting on Microbial Epidemiological Markers (IMMEM XI), Estoril, Portugal, 8-11 March.

Melo Cristino J. Member Local Organizing Committee. 11th International Meeting on Microbial Epidemiological Markers (IMMEM XI), Estoril, Portugal, 8-11 March.

Internationalisation

- Academic partners on the EU project PathoNGenTrace (http://patho-ngen-trace.eu/).

- Working group on malaria cytometry – Howard Shapiro (USA), Brian Grimberg (USA), Grace Chojnowski (Australia), Rui Gardner (Portugal).

- Sensitivity testing using flow cytometric principles to detect hemozoin – flow cytometer for measurement in Gabon, in collaboration with Martin Grobusch, head of the Infectious Diseases department, University Hospital Amsterdam, The Netherlands.

- Assessment of a novel "Magneto-Optical Method" for detection of malaria parasites and drug sensitivity testing, in collaboration with István Készmárki, Department of Physics, Budapest University of Technology and Economics, Budapest, Hungary.

- Collaboration in the Genome Canada IRIDA (Integrated Rapid Infectious Disease Analysis) Project (www.irida.ca).

- Collaboration in the Government of Canada Genomics R&D Initiative project - Strengthening Food and Water Safety in Canada through an Integrated Federal Genomics Initiative.

- Collaboration with the Surveillance and Pathogenomics- Israeli Centre of Excellence (SPICE), from the Ben Gurion University of the Negev, Beer Sheva, Israel on the development of novel core genome MLST schemas for Acinetobacter baumannii complex.

- Partner in the European Food Safety Authority (EFSA) funded project "INNUENDO: A novel cross-sectorial platform for the integration of genomics in surveillance of foodborne pathogens" (http://www.innuendoweb.org/).

Advanced Teaching

J. Carriço. Participation on the second cycle course of Computational Biology for Master and PhD programmes of Instituto Superior Técnico, Universidade Tecnica de Lisboa in collaboration with the Faculty of Medicine of Lisbon. Responsible for a module on Molecular Phylogenetics.

t J. Carriço. Teacher in the workshop "Working with bacterial communities and populations" of the Doctoral Programme in Food Chain and Health 13-20 May 2016 (http://www.vetmed.helsinki.fi/fh/Education/bacterial_communities_populations.html).

J. Carrico. Lecturer for two presentations in the ASM Microbe 2016 Workshop "NGS for Microbial Genomic Surveillance and More: One Technology Fits All" Boston, USA, 16-20 June, 2016.

J. Carrico. Lecturer for two presentations in the Capacity-building Workshop "Whole Genome Sequencing for clinical microbiology and infection prevention". Groningen, Netherlands, 12 - 14 Oct 2016.

T. Hanscheid, E. Martins. PGCD –Postgraduate Program for Science and Development, since 2016, Universidade de Cabo Verde, Instituto Calouste Gulbenkian. Responsible for module on Clinical Microbiology.

T. Hanscheid. Lecturing three workshops at the AIMS meeting, 2016, on "Diagnosis with low resources", "Trick or treatment", Science in the Kitchen.

T. Hanscheid. Do you believe in magic? Homeopathy, acupuncture and other alternative treatments. 7th ITQB NOVA PhD students' meeting 2016.

MSc Thesis Completed

Catarina Inês Marques de Sousa Mendes 04/11/2016 Pan-genome comparison between Streptococcus dysgalactiae subsp. equisimilis isolates from human and animal sources Universidade de Lisboa, Faculdade de Ciências JA Carriço F Pinto.

Rita Santiho Grenho 01/12/2016 Development and evaluation of a novel and innovative drug sensitivity assay for Plasmodium falciparum Universidade de Lisboa, Instituto Superior Técnico Thomas Hanscheid.

Remondes, Miguel

Major Interests / Objectives

Cognitive deficits present in Alzheimer's Disease, Anhedonia, Depression, and Schizophrenia, have been mapped to neuropathological changes in midline cortical structures, such as the anterior cingulate cortex, necessary for appropriate decision-making, the retrosplenial cortex, critically involved in visual-spatial processing, and the hippocampal formation, critical for episodic memory and any mental function therein dependent. To understand such disorders, it is imperative that we identify the structures and mechanisms underlying the behaviors they affect. We model such behaviors in rodents as goal-directed behaviors of variable complexity, during which we monitor and manipulate the relevant neural circuits, to assess their functions.

Head of Laboratory

Armando Miguel Caseiro Pires Remondes, PhD

Research Team

Ana Sofia Carvalho Cruz	Master	Trainee (Started October)
Carolina Costa Jorge Marcos Quintino	Graduate	MSc Student
Emanuel Ferreira Fernandes	Master	PhD Student
Inês Lopes Monteiro	Undergraduate	Trainee (Started May)
Jorge Miguel Claro Cardoso	Graduate	MSc Student
Marcelo Francisco Vieira Dias	Master	PhD Student
Margarida Caldeira Brotas	Undergraduate	Undergraduate (Left May)
Mariana Alcobio Sardica Lemos Barreto	Undergraduate	Trainee (Left May)
Miriam Garrido Marguilho	Undergraduate	Trainee
Thabelo Mmamatseliso Khoboko	Master	PhD Student
Tomás da Cruz Soares	Undergraduate	Trainee (Left July)

Laboratory Keywords / Research Areas

Cortex-hippocampus, Optogenetics-pharmacogenetics, Electrophysiology during behavior, Spatial maps, Decison, Sensory stimulus.

Major Scientific Achievements

In 2016 we have identified the neural circuitry conveying sensory input to the midline cortex and hippocampus, successfully achieved the specific manipulation of said circuitry, and begun to dissect the mechanisms linking primary sensory input, spatial memory, and decision-making.

We have published the first results of our research in a collaborative article, and reported our results in national and international meetings. In addition, we have been Faculty in multiple Graduate Programs in Neuroscience, and supervised undergraduate and graduate students, from both national and international Programs. We have reviewed grants for international funding agencies, been jury members in science initiatives, and argued PhD and MSc theses. We have also engaged in public outreach activities, and collaborated with the media.

Selected Publications

Liang L, Kirk JC, Schmitt LI, Komorowski RW, Remondes M, Halassa MM and Oline SN (2017) Scalable, Lightweight, Integrated and Quick-to-assemble (SLIQ) hyperdrives for functional circuit dissection. Front. Neural Circuits http://journal.frontiersin.org/article/10.3389/fncir.2017.00008. (Journal IF: 4, Citations: 0) 20 article views in 5 days, while in provisional form.

Remondes M * and Wilson M (2015) Slow-gamma rhythms coordinate cingulate cortical responses to hippocampal sharp-wave ripples during choice behavior. Cell Reports http://dx.doi.org/10.1016/j.celrep.2015.10.005. (Journal IF: 8.4, Citations: 3).

Wilson M *, Varela C and Remondes M (2015) Phase organization of network computations. Curr Opin Neurobiology 31C, 250-253. doi: 10.1016/j.conb.2014.12.011. (Journal IF: 6.6, Citations: 5).

Remondes M * and Wilson M (2013) Cingulate-hippocampus Coherence and Trajectory Coding in a Sequential Choice Task. Neuron 5, 1277-89. (Journal IF: 16, Citations: 16).

Ongoing Research Projects

2014/2019: Exploratório - IFCT. Coordinator: Armando Miguel Caseiro Pires Remondes. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: Exploratório Miguel Remondes. Amount: 50000.00. Amount (total): 50000.00.

2016/2017: Directors' Exploratory Projects (DEP) 2016. Coordinator: Armando Miguel Caseiro Pires Remondes. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: DEP 2016 MRemondes. Amount: 25000.00. Amount (total): 0.00.

Other Projects

2016/2020: "Neurologic and Psychiatric Disorders: from synapses to networks. Coordinator: Miguel Remondes. Coordinator Institution: iMM. Coordinator PI: Ana Sebastião.

2016/2018: Participation in project TWINNING (H2020) "Neurologic and Psychiatric disorders: from synapses to networks" – SynaNet, financed by the European Commission. Coordinator: Ana Sebastião.

Publications in Peer Review Journals

Liang L, Kirk JC, Schmitt LI, Komorowski RW, Remondes M, Halassa MM and Oline SN (2017) Scalable, Lightweight, Integrated and Quick-to-assemble (SLIQ) hyperdrives for functional circuit dissection. Front. Neural Circuits. http://journal.frontiersin.org/article/10.3389/fncir.2017.00008. (Journal IF: 4, Citations: 0) 32 article views in 5 days, while in provisional form.

Remondes M * and Wilson M (2015) Slow-gamma rhythms coordinate cingulate cortical responses to hippocampal sharp-wave ripples during choice behavior. Cell Reports http://dx.doi.org/10.1016/j.celrep.2015.10.005. (Journal IF: 8.4, Citations: 3).

Wilson M *, Varela C and Remondes M (2015) Phase organization of network computations. Curr Opin Neurobiology 31C, 250-253. doi: 10.1016/j.conb.2014.12.011. (Journal IF: 6.6, Citations: 5).

Remondes M * and Wilson M (2013) Cingulate-hippocampus Coherence and Trajectory Coding in a Sequential Choice Task. Neuron, 80, 5, 1277-89. (Journal IF: 16, Citations: 16).

Remondes M and Schuman E M (2004) Role for a cortical input to hippocampal area CA1 in the consolidation of a long-term memory, Nature 431, 699-703. (Journal IF: 32.2, Citations 255).

Remondes M and Schuman E M (2003) Molecular Mechanisms Contributing to Long-Lasting Synaptic Plasticity at the Temporoammonic-CA1 Synapse, Learning and Memory 10, 247-252 (Journal IF: 4.4, Citations 73).

Remondes M and Schuman E M (2002) Direct Cortical Input Modulates Plasticity and Spiking in CA1 Pyramidal Neurons, Nature 416, 736-740. (Journal IF: 30.4, Citations 171).

Other Publications National

Remondes M (2004) Functions of the Temporoammonic Pathway in the Hippocampus of the Rat; Physiology and Behavior, Doctoral Thesis, University of Coimbra Medical School, Coimbra, Portugal.

Invited Lectures and Seminars

Plenary Lecture at the VI International Conference in Cognitive Neurodynamics, Carmona (Seville) – Spain, August 2017.

Lecture in the series "Mind-Brain Lectures" for the Mind-Brain College of the University of Lisbon place TBA, May 2017.

Remondes, M, "Cognitive Maps and Decision-making Behaviors: electrophysiology, behavior and neural manipulations.", Seminar for the NeurULisboa International PhD Program "Get Inside IMM/FMUL/HSM" – University of Lisbon Medical School – Portugal, Lisbon, October 2016.

Remondes, M, "The Formation of Neural Maps During Choice Behaviors", SynaNet Seminar at Lancaster University, UK, Sept 2016.

Remondes, M, "The Formation of Neural Maps During Choice Behaviors", Seminar for the MIT-Portugal PhD Program in Bio-Engineering Neuroscience Course 2016, Center for Neuroscience and Cell Biology, University of Coimbra, April 2016.

Remondes, M, "The Formation of Neural Maps During Choice Behaviors", "Brain Storm – Psychiatry and Neurosciences" at the VII Annual International Medical Students (AIMS) Meeting, Lisbon, March 2016.

Communications in International Conferences

Emanuel Fernandes and Miguel Remondes, "Double retrograde anatomical tracing unravels an ego- to allocentric functional gradient in the midline cortex", "10th FENS Forum of Neuroscience" 2016 (Copenhagen, Denmark).

Miguel Remondes* and Matt Wilson, "Slow-? Rhythms Coordinate Cingulate Cortical Responses to Hippocampal Sharp-Wave Ripples during Wakefulness", "10th FENS Forum of Neuroscience" 2016 (Copenhagen, Denmark).

Meeting of the Lisbon Mind-Brain College NeurULisboa 2016.

Ferreira-Fernandes E, Remondes M, Why rats turn the way they do? (Awarded the Prize of Best Poster of the meeting).

Dias M, Remondes M, Interval Timing on a Linear Track.

Khoboko T, Remondes M, Confidence in associating probabilistic reward with specific spatial locations.

Quintino C, Remondes M, Oc2M as a multisensory integrator.

Cardoso J, Remondes M, Simultaneous recording of Oc2M and Hippocampal Activity in a Freely Behaving Animal.

Internationalisation

Collaboration:
Liang L, Kirk JC, Schmitt LI, Komorowski RW, Remondes M, Halassa MM and Oline SN (2017). Front. Neural Circuits 11:8. doi: 10.3389/fncir.2017.00008.

Reviewer:
National Science Center of Poland and ANR France 2016 Program.

International Meetings (submitted):
Lisbon Mind-Brain College NeurULisboa 2016 (5 posters, one awarded the Prize for Best Poster of the meeting).

10th FENS Forum of Neuroscience 2016 (Copenhagen, Denmark) – 2 Posters.

International Meetings (invited):
-Seminar for the NeurULisboa International PhD Program "Get Inside IMM/FMUL/HSM" – University of Lisbon Medical School – Portugal, Lisbon, October 2016 - “Cognitive Maps and Decision-making Behaviors: electrophysiology, behavior and neural manipulations”.

-Seminar at Lancaster University, UK. “The Formation of Neural Maps During Choice Behaviors” (Sept 2016).

-Seminar for the MIT-Portugal PhD Program in Bio-Engineering Neuroscience Course 2016, Center for Neuroscience and Cell Biology, University of Coimbra. “The Formation of Neural Maps During Choice Behaviors”.

-Plenary Conference "Brain Storm – Psychiatry and Neurosciences" at the VII Annual International Medical Students (AIMS) Meeting, Lisbon, March 2016. “The Formation of Neural Maps During Choice Behaviors”.

-Seminar at the IMM 2016 CAML PhD Programme, Lisbon, February 2016 - “Cognitive maps and decision behaviors”.

-Seminar at the "Neurologic and Psychiatric Disorders: from synapses to networks (SynaNet)" Kick-off meeting at IMM, Lisbon, February 2016 - “The formation of neural maps during choice behavior”.

Supervision:
Thabèlò Khoboko, MSc, in the CCU Champalimaud International PhD Program.

Hyojeong Kim, Seoul National University (South Korea), Pre-Med student

Panu Antero RÄTY, University of Turku (Finland), Faculty of Medicine's Graduate Teaching

Doctoral Program in Experimental Biology and Biomedicine, ERASMUS Mundus Program. and MIT-Portugal in Bio-Engineering.

PhD Jury member:
Ali Ozgur Argunsah, Margarida Agrochao, Rita Secca Fonseca.

Advanced Teaching

Miguel Remondes, Instituto de Neurociencias e Biologia Celular, Universidade de Coimbra:
Since May 2015 is a member of the Faculty at the Doctoral Program in Experimental Biology and Biomedicine, and at the MSc Program Neurasmus ERASMUS Mundus Program. From 2016 this program is fused with the MIT-Portugal PhD Program in Bio-Engineering, to which he lectured.

Miguel Remondes, Instituto de Medicina Molecular, Faculdade de Medicina da Universidade de Lisboa:
Since March 2015 is a member of the Faculty at the IMM-FMUL PhD program in Biomedicine – Lisbon Bio Med - Organizer of the Week "Neurosciences".

Miguel Remondes, Instituto de Medicina Molecular, Faculdade de Medicina da Universidade de Lisboa.

Miguel Remondes, Since Nov 2014 is a member of the Faculty of the FMUL PhD program in Neuroscience – lecture on Neuronal Circuits Instituto de Medicina Molecular, Faculdade de Medicina da Universidade de Lisboa.

Science and Society

Remondes, M, Lecture at the ConceptCon 2016 Meeting – Polo das Industrias Criativas da Universidade do Porto – organized by COMCEPT – Portuguese Skeptical Community, Porto, Nov 2016. "Total Recall – can we trust our memories?"

Remondes, M, Seminar at Culturgest Lisboa. Discursos do cérebro - Revelações das neurociências: "Decisão Flexível: a base biológica dos comportamentos baseados na memória" (Sept 2016).

Saldanha, Carlota

Major Interests / Objectives

We are focused on understanding the cellular and molecular mechanisms underlying acute and recovery of inflammatory responses. Our interest was on deciphering how blood components, blood cells and molecular partners are targeted by fibrinogen, sCD40L, and OxLDL. Considering leukocyte recruitment and making use of intravital microscopy, the development of numerical models that simulate the leukocyte-vascular wall interface interactions were also addressed. Under our scope was, as well, the study of biorheological behavior of blood components and fibrinogen-mediated signal transduction of the nitric oxide and its bioavailability on erythrocytes. Consequently, the validation of inflammatory biomarkers in vascular diseases were under questioning. We expect to achieve a better understanding of the inflammatory mechanisms in pathologies, like sepsis and cardiovascular diseases to help in further biomedical management.

Head of Laboratory

Maria Carlota Saldanha Lopes, PhD Agregação.

Research Team

Ana Rosa Miranda dos Santos Silva Herdade	Master	PhD Student
Ângelo Calado	PhD	Principal Investigator
Beatriz Simões Pinheiro	Undergraduate	Trainee
Catarina Duarte Lima	Master	MSc Student
Margarida Jorge Simões Pereira	Master	Investigator (Started April)
Mariana Gomes Ferreira	Graduate	MSc Student (Started September)
Mariana Selas Figueira	Undergraduate	Trainee (Started April)
Patrícia Alexandra Veloso Napoleão	PhD	Post-Doctoral Investigator
Patrícia Raquel dos Anjos Eugénio	Master	MSc Student (Left August)
Pedro Miguel Araújo Guerreiro Teixeira	Master	Investigator (Left January)
Rita Maria Santos Esteves	Graduate	Technician
Sara Louro Moleirinho	Master	Trainee
Tiago Luís Pinto Pereira da Silva	Graduate	PhD Student

Laboratory Keywords / Research Areas

Inflammation, Microcirculation, Neutrophil, Erythrocyte, Leukocyte recruitment, Inflammation, Hemorheology, Microcirculation.

Major Scientific Achievements

By the development of an animal model of inflammation we could demonstrate, in vivo, the association between an acute inflammatory response and the rheological properties of the blood, namely the RBCs deformability. Using intravital microscopy we have tracked the deformability pattern of neutrophils during the inflammatory response. With the obtained images with this model we could, together with a group of mathematicians, develop a numerical model that simulates the approach and adhesion of a neutrophil to the endothelium, and confirm the essential role of the velocity in the recruitment process. We showed erythrocytes as a biomarker and a target of inflammation, not gender dependent, that answer to the effect of high fibrinogen levels, and liberate or scavenged nitric oxide (NO) in dependence of CD47 and acetylcholinesterase (AChE)–enzyme-complex conformations and cAMP levels. Our results showed no changes in the bioavailability of NO on erythrocytes of glaucoma patients under topical inhibitor drugs of AChE. We found that erythrocyte content in NO and AChE enzyme activity showed to be biomarkers in patients with amyotrophic lateral sclerosis. Our studies allowed to link sCD40L with compromised myocardial repair post-MI and to identify patients with poor-prognosis. The association of sCD40L to inflammation in septic shock context highlight it as a biological marker of endothelium dysfunction.

Selected Publications

Silva-Herdade, AS, Andolina, G, Faggio, Caterina, Calado, A, Saldanha, C. (2016). Microvascular Research, 107, 34-38. (Journal IF: 2.574, Citations: 2) (2016) Erythrocyte deformability: a partner of the inflammatory response. Microvascular Research 107, 34-38. (Journal IF: 2.574, Citations: 2).

Napoleão P, Cabral LBP, Selas M, Freixo C, Monteiro MC, Criado MB, Costa MC, Enguita FJ, Viegas-Crespo AM, Saldanha C, Mota Carmo M, Ferreira RC, Pinheiro P (2016). Translational Research 176, 95. (DOI 10.1016/j.trsl.2016.04.005) (Journal IF:4.557, Citations:1) (2016) Stratification of ST-elevation myocardial infarction patients based on soluble CD40L longitudinal changes. Translational Research 176, 95. (Journal IF: 4.557, Citations: 1) (DOI 10.1016/j.trsl.2016.04.005).

Saldanha C, Mota Carmo M, Ferreira RC, Pinheiro T. Translational Research 2015, 166:650-659. (IF 5.030, Citations 0) (2015) Changes of sCD40L in the progression of acute myocardial infraction

associate to eNOS polymorphisms and VEGF but not to platelet CD62P expression. Translational Research 166, 650-659. (Journal IF: 5.030, Citations: 0).

De Oliveira, S., Reyes-Aldasoro, C.C., Candel, S., Renshaw, S.A., Mulero, V., Calado, A. (2013). J. Immunol. 190, 4349-59. (2013) Cxcl8 (Interleukin-8) mediates neutrophil recruitment and behavior in the zebrafish inflammatory response. J. Immunol 190, 4349-4359. (Journal IF: 4,922, Citations: 3).

De Oliveira S, Vitorino de Almeida V, Calado A, Rosário HS, Saldanha C. (2012) Integrin-associated protein (CD47) is a putative mediator for soluble fibrinogen interaction with human red blood cells membrane. Biochim Biophys Acta 1818, 481-490. (Journal IF: 5.000, Citations: 2).

Ongoing Research Projects

2012/2016: Coordinator: Maria Carlota Saldanha Lopes. Agency: Soc Portuguesa Hemorreologia. Reference: UBIMI. Amount: 23575.00. Amount (total): 23575.00.

2013/2016: Coordinator: Maria Carlota Saldanha Lopes. Agency: Fundação Ciência e Tecnologia. Reference: EXCL/MAT-NAN/0114/2012. Amount: 12100.00. Amount (total): 238000.00.

Other Projects

2013/2016: Contribution of circulating microRNA to improve prognosis of ischemic cardiovascular diseases, Liga dos Amigos do Hospital de Santa Marta. Coordinator: P. Napoleão (Liga dos Amigos do Hospital de Santa Marta/2012). Coordinator: Patricia Napoleão.

2013/2016: “Effects of Timolol on Biochemical and Hemorheological Properties of Erythrocytes from Glaucoma Patients. Coordinator: CarLota Saldanha. Coordinator Institution: Carlos Marques-Neves FMUL Professor, ISAMB, CECU Coordenator, ALM Clinical Director.

2013/2016: Endothelial dysfunction in atherosclerotic disease of different territories – a contribution to phenotype differentiation (Financiado pela Luga de Amigos do hospital de Santa marta). Coordinator: Patricia Napoleão.

2015/2017: Evaluation of CD40L in heart repair after cryoinjury-induced myocardial infarction in Zebrafish. Coordinator: Patrícia Napoleão Grant Post-Doc FCT: SFRH/BPD/63908/2009. Coordinator PI: Carlota Saldanha and Ângelo Calado.

Publications in Peer Review Journals

Silva-Herdade, AS, Andolina, G, Faggio, Caterina, Calado, A, Saldanha, C. (2016) Erythrocyte deformability: a partner of the inflammatory response. Microvascular Research, 107, 34-38. (Journal IF: 2.574, Citations: 2).

Napoleão P, Potapova E, Moleirinho S, Saldanha C and Messia A (2016) Soluble CD40 ligand profiles in patients with septic shock. Clinical Hemorheology and Microcirculation 64, 965-970. (DOI 10.3233/CH-168026) (Journal IF: 1.857, Citations:).

Saldanha C (2016) Physiological role of erythrocyte nitric oxide. Clinical Hemorheology and Microcirculation 64, 517-520. (DOI 10.3233/CH-168028) (Journal IF: 1.857, Citations:0).

Napoleão P, Freitas F and Saldanha C (2016) Effect of oxidized LDL on erythrocyte nitric oxide metabolism. Clinical Hemorheology and Microcirculation 64, 971-975. (DOI 10.3233/CH-168025) (Journal IF: 1.857, Citations: 0).

Duarte C, Napoleão P, Freitas F and Saldanha C (2016) An ex vivo study of nitric oxide efflux from human erythrocytes in both genders. Clinical Hemorheology and Microcirculation 64, 951-955. (DOI 10.3233/CH-168023) (Journal IF: 1.857, Citations: 0).

Esteves R, Freitas T, Teixeira P, Napoleão P, Neves C and Saldanha C (2016) Erythrocyte nitric oxide in glaucoma patients – ex vivo study. Clinical Hemorheology and Microcirculation 64, 989-994. (DOI 10.3233/CH-168049) (Journal IF: 1.857, Citations:0).

Silva-Herdade AS, Freitas T, Almeida JP and Saldanha C (2016) Fibrinogen signalling in erythrocyte nitric oxide mobilization in presence of pi3-k and adenylyl cyclase inhibitors. European Journal of Biomedical and Pharmaceutical Sciences 3, 28-34 (Journal IF: 3.881, Citations: 1).

Duarte C, Pinto S, Napoleão P, Pronto-Laborinho AC, Barros MA, Freitas T, de Carvalho M, Saldanha C (2016) Identification of erythrocyte biomarkers in amyotrophic lateral sclerosis.

Clinical Hemorheology and Microcirculation 63, 423-437. (DOI 10.3233/CH-162066) (Journal IF: 1.857, Citations:0).

Napoleão P, Cabral LBP, Selas M, Freixo C, Monteiro MC, Criado MB, Costa MC, Enguita FJ, Viegas-Crespo AM, Saldanha C, Mota Carmo M, Ferreira RC, Pinheiro P (2016) Stratification of ST-elevation myocardial infarction patients based on soluble CD40L longitudinal changes. Translational Research 176, 95. (DOI 10.1016/j.trsl.2016.04.005) (Journal IF:4.557, Citations:1).

Invited Lectures and Seminars

Napoleão P. Fármacos de actuação local na parede arterial: princípios de actuação e limitações. Curso Farmacoterapia de Actuação Local em Terapêutica Endovascular da Sociedade Portuguesa de Angiologia a Cirurgia Vascular, Arouca, Portugal, September 9, 2016.

Napoleão P. Inflammation in coronary disease. Curso Livre Experimental de Bioquímica da Faculdade de Medicina da Universidade de Lisboa, Lisboa, Portugal, February 15, 2016.

Communication in International Conferences

Saldanha C. Physiological role of erythrocyte nitric oxide. 18th Conference of the European Society for Clinical Hemorheology and Microcirculation, Lisbon, Portugal. June 5-8, 2016. (Oral Presentation)

Napoleão P, Freitas T, Saldanha C. Soluble CD40 ligand profiles in patients with septic shock. Conference of the European Society for Clinical Hemorheology and Microcirculation, Lisbon, Portugal. June 5-8, 2016. (Oral Presentation)

Napoleão P, Freitas T, Saldanha C. Effect of oxidized LDL on erythrocyte nitric oxide metaolism. 18th Conference of the European Society for Clinical Hemorheology and Microcirculation, Lisbon, Portugal. June 5-8, 2016. (Oral Presentation)

Oliveira S, Boudinot P, Calado Â, Mulero V. Duox1-derived H2O2 modulates Cxcl8 expression and neutrophil recruitment via JNK/c-JUN/AP-1 signaling and chromatin modifications, 18th Conference of the European Society for Clinical Hemorheology and Microcirculation, Lisbon, Portugal. June 5-8, 2016. (Poster Presentation)

Silva-Herdade, AS, Andolina, G, Faggio, Caterina, Calado, A, Saldanha, C. Erythrocyte deformability: a partner of the inflammatory response. 18th Congress of the European Society of Clinical Hemorheology and Microcirculation, Lisboa, Portugal, 5-9 June 2016. (Poster Presentation)

Oliveira I, Napoleão P, Messias A, Saldanha C, Insulin effect on erythrocyte NO metabolism in patients with sepsis.18th Congress of the European Society of Clinical Hemorheology and Microcirculation, Lisboa, Portugal, 5-9 June 2016. (Poster Presentation)

Organisation of Conferences

Saldanha C. Organizer the 18th Conference of the European Society of Clinical hemorheology and Microcirculation, Lisbon, June 2016.

Saldanha C. Co-organizer the Symposium Hemorheological Alterations in Hematological Diseases in the 18th Conference of the European Society of Clinical hemorheology and Microcirculation, Lisbon, June 2016.

Silva-Herdade AS. Member of the organizing committee of Congress of the European Society of Clinical Hemorheology and Microcirculation, Lisboa, Portugal, 5-9 June 2016.

Internationalisation

Carlota Saldanha - President of the 18th Conference of European Society of Clinical Hemorheology and Microcirculation.

Carlota Saldanha - Member of the Strategic Group, European Society of Microcirculation.

Carlota Saldanha - Member of the European Clinical Hemorheology and Microcirculation Coordinating Committee.

Carlota Saldanha – Member of the Scientific Advisory Committee of 5th Eurosummer School on Biorheology Symposium.

Carlota Saldanha - President of the Portuguese Society of Hemorheology and Microcirculation (SPHM).

Carlota Saldanha - Member of Editorial Board of J Cellular Biotechnology.

Carlota Saldanha - Member of Editorial Board of Clinical Hemorheology and Microcirculation.

Carlota Saldanha - Member of Editorial Board of Sciedu Press, Case Reports in Clinical Pathology.

Carlota Saldanha- Member of Editorial Board of J of Eye Diseases.

Carlota Saldanha - Editor in Chief of the Bulletin of the Bulletin of the SPHM www.hemorreologia.com

Advanced Teaching

Saldanha, C. Hemorheology and Human Pysical Exercise, 12nd Post Graduation Course of Sports Medicine, Organised by Portuguese Society of Sports Medicine, Lisbon, February, 2016.

Calado, Â. Lecturer "Metabolismo e Integração Metabólica". Mestrado em Doenças Metabólicas e Comportamento Alimentar. Faculdade de Medicina, Universidade de Lisboa, April, 2016.

Calado A. Metabolismo e Integração Metabólica". Mestrado em Medicina Hiperbárica e Subaquática. Faculdade de Medicina, Universidade de Lisboa, October, 2016.

Science and Society

Saldanha, C (2016) The Conference of the European Society of hemorhrology and microcirculation, Editorial in the Bulletin of the Portuguese Society of hemorheology and Microcirculation vol 1, nº1 www.hemorheology.com.

Saldanha, C (2016) Difusão Científica, Editorial in the Bulletin of the Portuguese Society of hemorheology and Microcirculation vol 1, nº 1 www.hemorheology.com.

MSc Thesis Completed

Patricia Eugénio 18/12/2016 Evaluation of sCD40LL in heart regeneration after cryoinjury-induce myocardial enfarction in zebrafish- -methodological approach Univeesity of Lisbon Patricia Napoleão.

Santos, Nuno C.

Major Interests / Objectives

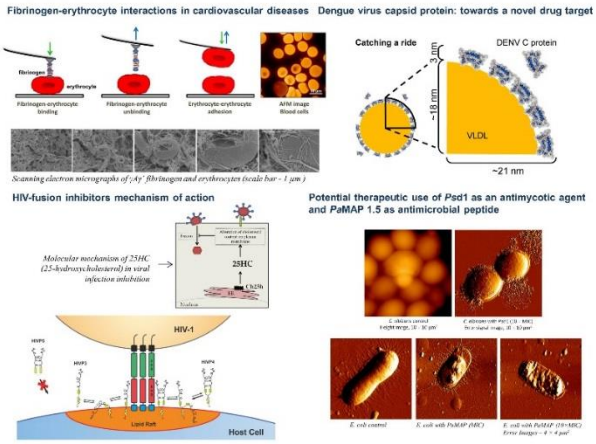
Biochemical and biophysical processes occurring in membranes of human cells, as well as of their viral and bacterial pathogens. Study of two steps of the enveloped viruses life cycle (HIV-1, dengue virus, West Nile virus and pediatric respiratory viruses) that involve biomembranes – the entrance of the virus or its content into the target cell (including its inhibition) and the assembly of new virions. Study of the binding of fibrinogen to erythrocytes in cardiovascular diseases. Pre-clinical evaluation of the membrane activity and mechanism of action of antimicrobial peptides (AMP).

On the Nanomedicine area, work on the development of innovative protein-ligand interactions biosensor systems (nanoparticles and amyloid-based biosensors).

Head of Laboratory

Nuno Fernando Duarte Cordeiro Correia dos Santos, PhD Agregação, Associate Professor

Graphical Abstract



Research Team

Ana Filipa Barata Duarte Guedes	Master	PhD Student
Ana Souto Martins	Master	PhD Student
André F. Faustino	Master	PhD Student (Left November)
André Rodrigues Nascimento	Graduate	MSc Student (Started September)
Axel Hollmann	PhD	Post-Doctoral Investigator
Bárbara Sofia Lopes Gomes	Master	PhD Student
Catarina Isabel de Sousa Lopes	Graduate	MSc Student
Filomena A. Carvalho	PhD	Principal Investigator, Assistant Professor

Ivo Cristiano da Rocha Martins	PhD	Principal Investigator
Marcelo Alexandre da Costa Tavares Augusto	Master	PhD Student
Marcin Makowski	Graduate	MSc Student
Marco André Manso Rodrigues	PhD	Post-Doctoral Investigator (Started November)
Maria Teresa Damásia Freitas Santos	Undergraduate	Technician
Mário Romão Felício	Master	PhD Student
Marta Franco Coimbra Marques	PhD	Post-Doctoral Investigator (Left October)
Patrícia Isabel Duarte Montês Carvalho	Master	PhD Student
Patrícia Morgado da Silva	Master	MSc Student
Sónia Gonçalves Abreu	PhD	Investigator

Laboratory Keywords / Research Areas

Membranes, HIV, Dengue, West Nile virus and respiratory viruses, Peptide-based therapies (CPPs, AMPs, pep14-23), Atomic Force Microscopy (AFM), Fibrinogen, Nanomedicine

Major Scientific Achievements

Dengue virus capsid protein binds specific proteins of lipid droplets and very low-density lipoproteins. These interactions, essential for viral replication, are inhibited by a drug lead developed by us (the peptide pep14-23), which acquires alpha-helical structure in the presence of anionic phospholipids.

Singlet oxygen produced by the new broad-spectrum antiviral LJ001 and related compounds induce changes on the viral membrane resulting in the inhibition of the virus-cell membrane fusion necessary for cell infection by enveloped viruses.

The enhanced interaction with membranes of HIV fusion inhibitor peptides or antibodies conjugated with cholesterol and a PEG linker block more efficiently HIV entry.

The quantification of fibrinogen-erythrocyte binding forces may be used as a new prognostic marker of the risk of hospitalization on heart failure.

New synthetic antimicrobial peptides (PaMAP2, PaMAP1.9) showed to be efficient against planktonic and biofilm multiresitent bacteria.

Selected Publications

Guedes AF, Carvalho FA, Malho I, Lousada N, Sargento L, Santos NC (2016) Atomic force microscopy as a tool to evaluate the risk of cardiovascular diseases in patients. Nature Nanotechnol. 11, 687-692. (Journal IF: 35.267, Citations: 1).

Vigant F, Santos NC, Lee B (2015) Broad-spectrum antivirals against viral fusion. Nature Rev. Microbiol. 13, 426-437. (Journal IF: 24.727, Citations: 12).

Faustino AF, Carvalho FA, Martins IC, Castanho MARB, Mohana-Borges R, Almeida FC, Da Poian AT, Santos NC. (2014) Dengue virus capsid protein interacts specifically with very low-density lipoproteins. Nanomedicine (NBM) 10, 247-255. (Journal IF: 5.671, Citations: 13).

Hauser CA, Maurer-Stroh S, Martins IC (2014) Amyloid-based nanosensors and nanodevices. Chem Soc Rev. 43, 5326-5345. (Journal IF: 34.09, Citations: 37).

Carvalho FA, Connell S, Miltenberger-Miltenyi G, Pereira SV, Tavares A, Ariëns RAS, Santos NC (2010) Atomic force microscopy-based molecular recognition of a fibrinogen receptor on human erythrocytes. ACS Nano 4, 4609-4620. (Journal IF: 13.334, Citations: 52).

Ongoing Research Projects

2014/2016: Multi-target HIV entry inhibitors delivery by cationic liposomes. Coordinator: Ana Salomé Rocha do Nascimento Veiga. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: VIH/SAU/0047/2011. Amount: 129209.00. Amount (total): 129209.00.

2014/2016: Uma estratégia inovadora para distribuição e entrega de inibidores de entrada do HIV muilti-alvo usando lipossomas catiónicos. Coordinator: Miguel Castanho. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: HIVERA/0002/2013. Amount: 99000.01. Amount (total): 99000.00.

2015/2019 Innovative peptides against cancer and pathogenic bacteria, with advances in science, biopharmaceutical drug. Coordinator: Miguel Castanho. Agency: Comissão Europeia. Reference: INPACT. Amount: 463500.00. Amount (total): 1390500.00.

2015/2020: Engineering protease-resistant alpha-beta for broad-spectrum antivirals. Coordinator: Nuno Fernando Duarte Cordeiro Correia dos Santos. Agency: Joan Sanford I. Weill

Medical College of. Reference: Engineering protease-resistant - NIH. Amount: 300000.00. Amount (total): 300000.00.

2016/2019: Broad-spectrum antiviral peptides against respiratory viruses. Coordinator: Nuno Fernando Duarte Cordeiro Correia dos Santos. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/BBB-BQB/3494/2014. Amount: 197839.00. Amount (total): 0.00.

2016/2019 Molecular interactions of circulating fibrinogen as a risk factor for cardiovascular and cerebrovascular pathologies. Coordinator: Filomena A. Carvalho. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/BBB-BMD/6307/2014. Amount: 184965.00. Amount (total): 0.00.

Other Projects

2010/2016 The interplay between lipid droplets, RNA and the capsid protein during dengue virus assembly and encapsidation, FCG, Calouste Gulbenkian Foundation Frontiers in Life Sciences Research Prize, €50 000. Coordinator: I.C. Martins.

2010/2016 Atomic force microscopy-based molecular recognition of fibrinogen receptors in platelets and erythrocytes. Applications in health and disease. Calouste Gulbenkian Foundation Prize Stimulus to Research. Coordinator. Coordinator: N.C. Santos.

2013/2018 The Role of Fibrin Clot Structure in Thrombosis. Coordinator: N.C. Santos. Coordinator Institution: Project of the British Heart Foundation.

2014/2017 Análises moleculares comparativas de peptídeos cíclicos e lineares com atividades imunomodulatórias e antimicrobianas. Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) Ciência sem Fronteiras Project 300965/2014, Brazil. Coordinator: N.C. Santos.

2014/2016 Assessment of the changes on fibrinogen-induced erythrocyte-erythrocyte adhesion on different cardiovascular pathologies by AFM-based force spectroscopy. Faculty of Medicine, University of Lisbon. €1 380. Coordinator: F.A. Carvalho.

Publications in Peer Review Journals

Ribeiro SM, Felício MR, Boas EV, Gonçalves S, Costa FF, Samy RP, Santos NC, Franco OL (2016) New frontiers for anti-biofilm drug development, Pharmacol. Ther. 160, 133-144. (Journal IF: 11.000, Citations: 4).

Hollmann A, Martínez M, Noguera ME, Augusto MT, Disalvo A, Santos NC, Semorile L, Maffía PC (2016) Role of amphipathicity and hydrophobicity in the balance between hemolysis and peptide-membrane interactions of three related antimicrobial peptides, Colloids Surf. B - Biointerfaces, 141, 528-536. (Journal IF: 3.902, Citations: 1).

Cardoso MH, Ribeiro SM, Nolasco DO, de la Fuente-Núñez C, Felício MR, Gonçalves S, Matos CO, Liao LM, Santos NC, Hancock RE, Franco OL, Migliolo L (2016) A polyalanine peptide derived from polar fish with anti-infectious activities, Sci. Rep., 6, 21385. (Journal IF: 5.228, Citations: 1).

Remédios M, Carvalho FA, Enguita FJ, Cardoso C, Martins IC, Santos NC, Leitão AL (2016). Effects of Penicillium chrysogenum var. halophenolicum on kraft lignin: color stabilization and cytotoxicity evaluation, 3 Biotech, 6, 102. (Journal IF: 0.992; Citations: 0).

Migliolo L, Felício MR, Cardoso MH, Silva ON, Xavier MA, Nolasco DO, de Oliveira AS, Roca-Subira I, Vila Estape J, Teixeira LD, Freitas SM, Otero-Gonzalez AJ, Gonçalves S, Santos NC, Franco OL (2016) Structural and functional evaluation of the palindromic alanine-rich antimicrobial peptide Pa-MAP2, Biochim. Biophys. Acta, 1858, 1488-1498. (Journal IF: 3.687, Citations: 0).

Bernardes N, Abreu S, Carvalho FA, Fernandes F, Santos NC, Fialho AM (2016) Modulation of membrane properties of lung cancer cells by azurin enhances the sensitivity to EGFR-targeted therapy and decreased beta1 integrin-mediated adhesion, Cell Cycle, 15, 1415-1424. (Journal IF: 3.952, Citations: 1).

Guedes AF, Carvalho FA, Malho I, Lousada N, Sargento L, Santos NC (2016) Atomic force microscopy as a tool to evaluate the risk of cardiovascular diseases in patients, Nature Nanotechnol., 11, 687-692. (Journal IF: 35.267, Citations: 1).

Ribeiro AS, Carvalho FA, Figueiredo J, Carvalho R, Mestre T, Monteiro J, Guedes AF, Fonseca M, Sanches J, Seruca R, Santos NC, Paredes J (2016) Atomic force microscopy and graph analysis to study the P-cadherin/SFK mechanotransduction signalling in breast cancer cells, Nanoscale, 8, 19390-19401. (Journal IF: 7.760, Citations: 0).

Conceição K, Magalhães PR, Campos SR, Domingues MM, Ramu VG, Michalek R, P. Bertani P, Baptista AM, Heras M, Bardaji ER, Bechinger B, Ferreira ML, Castanho MARB (2016) The anti-inflammatory action of the analgesic kyotorphin neuropeptide derivatives: insights of a lipid-mediated mechanism, Amino Acids, 48, 307-18. (Journal IF: 3.196, Citations: 1).

Loureiro JA, Gomes B, Fricker G, Coelho MAN, Rocha S, Pereira MC (2016) Cellular uptake of PLGA nanoparticles targeted with anti-amyloid and antitransferrin receptor antibodies for Alzheimer's disease treatment, Colloids and Surfaces B: Biointerfaces, 145, 8-13, (Journal IF: 3.902, Citations: 3).

Marto J, Gouveia LF, Gonçalves LM, Gaspar DP, Pinto P, Carvalho FA, Oliveira E, Ribeiro HM, Almeida AJ. (2016) A Quality by design (QbD) approach on starchbased nanocapsules: A promising platform for topical drug delivery, Colloids and Surfaces B: Biointerfaces. 143, 17785 (Journal IF: 3.902, Citations: 2).

Marques MC, Tapia C, Gutiérrez-Sanz O, Ramos AR, Keller KL, Wall JD, De Lacey AL, Matias PM, Pereira IAC (2016) Selenocysteine plays a direct role in the maturation and catalytic properties of [NiFeSe] hydrogenases, Nature Chem. Biol. in press (Journal IF = 4.606, Citations: 0).

Figueira TN, Palermo LM, Veiga AS, Huey D, Alabi CA, Santos NC, Welsch JC, Mathieu C, Horvat B, Niewiesk S, Moscona A, Castanho MARB, Porotto M (2016) In vivo efficacy of measles virus fusion protein-derived peptides is modulated by the properties of self-assembly and membrane residence. Virol. In press (Journal IF = 4.606, Citations: 0).

Lopes PA, Martins AP, Martins SV, Madeira MS, Santos NC, Moura TF, Prates JAM, Soveral G (2016) Higher membrane fluidity mediates the increased subcutaneous fatty acid content in pigs fed reduced protein diets. Animal. In press. (Journal IF = 2.056, Citations: 0).

Hollmann A Delfederico L, Santos NC, Disalvo EA, Semorile L (2016) Interaction of S-layer proteins of Lactobacillus kefir with model membranes and cells. J. Liposome Res. In press. (Journal IF = 1.822, Citations: 0).

Augusto MT, Hollmann A, Troise F, Veiga AS, Pessi A, Santos NC (2016) Lipophilicity is a key factor to increase the antiviral activity of HIV neutralizing antibodies. Colloids Surf. B – Biointerfaces. In press. (Journal IF = 4.152, Citations: 0).

Invited Lectures and Seminars

Santos NC, Assessment of the mechanisms of action of HIV fusion inhibitors and broad-spectrum antiviral, Faculdade de Farmácia da Universidade de Lisboa, Lisbon, Portugal, March 16, 2016.

Santos NC, Plasma lipoproteins and intracellular lipid droplets involvement on dengue virus replication, Trends in Nanobioparticles Characterization, Lisbon, Portugal, April 6-8, 2016.

Guedes AF, Carvalho FA, Malho I, Lousada N, Sargento L, Santos NC, Atomic force microscopy as a tool to evaluate the risk for cardiovascular diseases in patients, AFM Biomed Conference 2016 – 7th Conference on AFM for Life Sciences and Nanomedicine, Porto, Portugal, April 11-15, 2016.

Santos NC, Molecular interactions probed by AFM-based force microscopy, FEBS-IUBMB (Federation of European Biochemical Societies – International Union of Biochemistry and Molecular Biology) Workshop on Biointeractomics 2016 – from Bimolecular Interactions to Networks, Seville, Spain, May 17-20, 2016.

Guedes AF, Malho I, Lousada N, Sargento L, Santos NC, Carvalho FA, Atomic force microscopy as a tool to evaluate the risk for cardiovascular diseases in patients, 5th International Iberian Biophysics Congress, Porto, Portugal, June 15-17, 2016.

Faustino AF, Guerra GM, Huber RG, Hollmann A, Domingues MM, Barbosa GM, Enguita FJ, Bond PJ, Castanho MARB, Da Poian AT, Almeida FCL, Santos NC, Martins IC, Understanding dengue virus capsid protein for drug design: combining wet-lab and computational biology, 5th International Iberian Biophysics Congress, Porto, Portugal, June 15-17, 2016.

Santos NC, Atomic force microscopy as a nanotool to evaluate cardiovascular patients' risk, XXXI Reunião Anual da FESBE (Federação de Sociedades de Biologia Experimental), Foz do Iguaçu, Brazil, August 29 - September 1, 2016.

Santos NC, Microscopia de força atómica como ferramenta para avaliação do risco cardiovascular em doentes, Universidade Católica Dom Bosco, Campo Grande, Brazil, September 14, 2016.

Santos NC, Novas estratégias antivirais contra HIV e vírus da dengue, Instituto de Patologia Tropical e Saúde Pública (IPTSP), Universidade Federal de Goiás, Goiânia, Brazil, November 7, 2016.

Santos NC, Molecular interactions probed by AFM-based force microscopy, Instituto de Química e Instituto de Ciências Biológicas, Universidade Federal de Goiás, Goiânia, Brazil, November 7, 2016.

Guedes AF, Carvalho FA, Malho I, Lousada N, Sargento L, Santos NC, Atomic force microscopy as a tool to evaluate the risk for cardiovascular diseases in patients, Mini-symposium of Advances in molecular interaction analysis, Ljubljana, Slovenia, November 22, 2016.

Guedes AF, Sargento L, Braz-Nogueira J, Lousada N, Moreira C, Carvalho FA, Santos NC, Microscopia de força atómica na avaliação de risco em insuficiência cardíaca e hipertensão essencial, Sessão do Centro Académico de Medicina de Lisboa – O que há de novo no CAML, Lisbon, Portugal, December 15, 2016.

Communications in International Conferences

Carvalho PM, Guerra G, Martins AS, Gonçalves S, Outeiro TF, Vicente-Miranda H, Santos NC, Martins, IC. Maximizing biomolecules signal detection for study of single protein-ligand interaction events. 15th Iberian Peptide Meeting, Porto, Portugal, February 10-12, 2016. (Oral Presentation)

Carvalho PM, Guerra G, Martins AS, Gonçalves S, Outeiro TF, Vicente-Miranda H, Santos NC, Martins, IC. Maximizing biomolecules signal detection for study of single protein-ligand interaction events. nanoPT2016 International Conference, Braga, Portugal, February 16-19, 2016. (Poster Presentation)

Felício MR, Franco OL, Cardoso MH, Migliolo L, Santos NC, Gonçalves S. Pa-MAP 1.5 and 1.9: Mechanisms of action of two antimicrobial peptides. Biophysical Society's 60th Annual Meeting, Los Angeles, USA, February 27 – March 2, 2016. Abstract published at Biophys. J., 110, 78a, 2016. (Poster Presentation)

Gonçalves A, Silva PM, Felício MR, Medeiros LN, Kurtenbach E, Santos NC. Psd1 antimicrobial activity against Candida albicans planktonic cells and biofilms. Biophysical Society's 60th Annual Meeting, Los Angeles, USA, February 27 – March 2, 2016. Abstract published at Biophys. J., 110, 417a, 2016. (Poster Presentation)

Gomes B, Hollmann A, Santos NC. The mechanism of HIV entry inhibition by 25-hydroxycholesterol. Biophysical Society's 60th Annual Meeting, Los Angeles, USA, February 27 – March 2, 2016. Abstract published at Biophys. J., 110, 521a. (Oral Presentation)

Augusto MT, Hollmann A, Troise F, Veiga AS, Pessi A, Santos NC. Lipophilicity is a key factor to increase the antiviral activity of HIV neutralizing antibodies. Biophysical Society's 60th Annual Meeting, Los Angeles, USA, February 27 – March 2, 2016. Abstract published at Biophys. J., 110, 572-573a, 2016. (Poster Presentation)

Carvalho FA, Monteira J, Ribeiro AS, Guedes AF, Paredes J, Santos NC. Biomechanical analysis of breast cancer cells to study P-cadherin/SFK mechanotransduction signalling. AFM Biomed Conference 2016 – 7th Conference on AFM for Life Sciences and Nanomedicine, Porto, Portugal, April 11-15, 2016. 2nd place for best oral presentation. (Oral Presentation

Gomes B, Corneo B, Santos NC, Moscona A, Porotto M. Infection of primary neurons with measles virus: Inhibiting viral fusion prevents spread of virus in human motor neurons. Columbia Stem Cell Day, New York, USA, May 16, 2016. (Poster Presentation)

Marques MC, Augusto MT, Porotto M, Moscona A, Santos NC. Biophysical analysis of peptide fusion inhibitors that target paramyxoviruses. FEBS-IUBMB Workshop, Seville, Spain, May 17-20, 2016 (Oral Presentation)

Guedes AF, Carvalho FA, Lousada N, Sargento L, Moreira C, Braz-Nogueira J, Santos NC. Fibrinogen-induced erythrocyte-erythrocyte adhesion relevance as cardiovascular risk factor. FEBS-IUBMB workshop, Seville, Spain, May 17-20, 2016. (Poster Presentation)

Guedes AF, Carvalho FA, Malho I, Lousada N, Sargento L, Santos NC. Atomic force microscopy as a tool to evaluate the risk of cardiovascular diseases in patients. FEBS/IUBMB - Advanced Lecture Course "Molecular basis of human diseases: 50 years anniversary of Spetses summer schools", Spetses Island, Greece, May 27 – June 1, 2016. (Poster Presentation)

Faustino AF, Barbosa GM, Castanho MARB, Da Poian AT, Santos NC, Almeida FCL, Martins IC. A NMR-based method to quickly probe disordered protein regions via N-H solvent accessibility. 5th International Iberian Biophysics Congress, Porto, Portugal, June 15-17, 2016. (Poster Presentation)

Guedes AF, Carvalho FA, Lousada N, Sargento L, Santos NC. Fibrinogen-erythrocyte binding as a potential prognosis biomarker in heart failure patients. 5th International Iberian Biophysics Congress, Porto, Portugal, June 15-17, 2016. 1st Prize for Best Poster Presentation. (Poster Presentation)

Makowski M, Felício MR, Franco OL, Santos NC, Gonçalves S. Structural and functional characterization of the cationic antimicrobial peptide EcAMP1R2. 5th International Iberian Biophysics Congress, Porto, Portugal, June 15-17, 2016. (Poster Presentation)

Felício MR, Franco OL, Santos NC, Gonçalves S. Study of the molecular interactions of antimicrobial peptides with bacteria. 5th International Iberian Biophysics Congress, Porto, Portugal, June 15-17, 2016. (Poster Presentation)

Silva PM, Marques MC, Augusto MT, Porotto M, Moscona A, Santos NC. Cholesterol-conjugated peptide inhibitors of influenza A virus: biophysical characterization. 5th International Iberian Biophysics Congress, Porto, Portugal, June 15-17, 2016. (Poster Presentation)

Martins AS, Carvalho FA, Faustino AF, Martins IC, Santos NC. West-Nile Virus capsid protein binds to host lipid systems requiring potassium ions. 5th International Iberian Biophysics Congress, Porto, Portugal, June 15-17, 2016. (Oral Presentation)

Marques MC, Porotto M, Moscona A, Santos NC. Biophysical analysis of lipid-conjugated peptide fusion inhibitors that target paramyxoviruses. 5th International Iberian Biophysics Congress, Porto, Portugal, June 15-17, 2016. (Poster Presentation)

Loupes CS, Guedes AF, Braz-Nogueira J, Moreira C, Carvalho FA, Santos NC. Erythrocyte-erythrocyte adhesion promoted by fibrinogen in Essential Arterial Hypertension patients. 5th International Iberian Biophysics Congress, Porto, Portugal, June 15-17, 2016. (Poster Presentation)

Guedes AF, Carvalho FA, McPherson H, Domingues MM, Macrae F, Santos NC, Ariëns RAS. Impact of gamma' fibrinogen on the interaction with erythrocytes. XXIVth International Fibrinogen Workshop, Skukuza, South Africa, June 20-24, 2016. (Oral Presentation)

Guedes AF, Carvalho FA, Malho I, Lousada N, Sargento L, Santos NC. Fibrinogen-erythrocyte binding as prognosis biomarker in heart failure patients. XXIVth International Fibrinogen Workshop, Skukuza, South Africa, June 20-24, 2016. (Oral Presentation)

Zacarias S, Marques MC, Pereira IAC, Matias PM. Towards an engineered O2-tolerant-likeproximal FeS cluster in a [NiFeSe] hydrogenases. DGK-AK1-Workshop: Diffraction Data Collection Using Synchrotron Radiation, Berlin-Adlershof, Germany, June 30 - July 2, 2016. (Poster Presentation)

Marques MC, Gutiérrez-Sanchez O, Tapia C, De Lacey A, Matias PM, Pereira IAC. The role of selenocysteine in the catalytic properties and maturation of [NiFeSe] hydrogenases. 11th Hydrogenase Conference, Marseille, France, July 10-14, 2016. (Oral Presentation)

Zacarias S, Marques MC, Pereira IAC, Matias PM. Engineering [NiFeSe] hydrogenase variants with an O2-tolerant-like proximal FeS cluster. 11th Hydrogenase Conference, Marseille, France, July 10-14, 2016 (Poster Presentation)

Felício MR, Franco OL, Santos NC, Gonçalves S. The novel antimicrobial peptides Pa-MAP2 and 1.9 have different mechanisms of action against bacterial infections. Young Scientist Program (YSP) – 16th IUBMB (International Union of Biochemistry and Molecular Biology) Conference, Vancouver, Canada, July 15-16, 2016. (Poster and Oral Presentation)

Sabban A, Duval C, Guedes AF, McPherson HR, Saha S, Ajjan R, Santos NC, Ariëns RAS. Characterisation of the erythrocyte binding site on fibrinogen. BSHT/AiP/UK Platelet Group Joint Meeting (British Society for Haemostasis & Thrombosis) – Anticoagulation in Practice, Leeds, UK, November 9-11, 2016. (Oral Presentation)

Marques MC, Augusto MT, Porotto M, Moscona A, Santos NC. Biophysical analysis of peptide fusion inhibitors that target paramyxoviruses. EMBO Young Scientists' Forum 2016, Lisbon, Portugal, September 1-2, 2016. (Poster Presentation)

Lopes CS, Pronto-Laborinho AC, de Carvalho M, Santos NC, Carvalho FA. Using AFM to study erythrocytes morphology and elasticity on Amyotrophic Lateral Sclerosis. 5th International Symposium in Applied Bioimaging – Disease in Focus, Porto, Portugal, October 26-28, 2016. (Poster and Oral Presentation)

Communications in National Conferences

Lopes CS, Guedes AF, Santos NC, Carvalho FA. Using AFM-based force spectroscopy to assess fibrinogen-induced erythrocyte-erythrocyte adhesion on different cardiovascular diseases. 5ª Edição das Jornadas Intercalares dos Mestrados do DQ e do DCV, Faculdade de Ciências e

Tecnologia, Universidade Nova de Lisboa, Lisbon, Portugal, January 28-29, 2016. (Oral Presentation)

Carvalho PM, Domingues MM, Santos NC. Design of liposome approach for delivery of fibrinolytic agents. X iMM/CAML PhD Students Meeting, Lisbon, Portugal, March 30-April 1, 2016. (Oral Presentation)

Guedes AF, Carvalho FA, Braz-Nogueira J, Moreira C, Santos NC, High fibrinogen levels promote erythrocyte-erythrocyte adhesion: a cardiovascular risk factor in Essential Arterial Hypertension patients. Congresso Português de Cardiologia 2016, Vilamoura, Portugal, April 23-26, 2016. (Poster Presentation)

Zacarias S, Marques MC, Pereira IAC, Matias P. Towards an engineered O2-tolerant-like proximal FeS cluster in a [NiFeSe] hydrogenases. 5th ENURS: Meeting of Portuguese Synchrotron Radiation Users, Oeiras, Portugal, June 17, 2016. (Poster Pesentation)

Organisation of Conferences

Santos NC. Organizer of the 5th International Iberian Biophysics Congress and chairman of the Cell and Tissue Biophysics Session, Porto, Portugal, June 15-17, 2016.

Internationalisation

Collaborative publications and/or funded projects with groups from the University of California at Los Angeles (USA), Mount Sinai Medical Center (New York, USA), Columbia University (New York, USA), Massachusetts Institute of Technology (Cambridge, USA), Federal University of Rio de Janeiro (Brazil), Pompeu Fabra University (Barcelona, Spain), Federal University of Ceará (Fortaleza, Brazil), Federal University of Pernambuco (Recife, Brazil), University of Leeds (UK), Emory University (Atlanta, USA), Catholic University of Brasília (Brazil), University of Brasília (Brazil), Instituto Federal de Educação, Ciência e Tecnologia de Brasília (Brazil), Dom Bosco Catholic University (Campo Grande, Brazil), EMBRAPA Recursos Genéticos e Biotecnologia (Brasília, Brazil), Oswaldo Cruz Foundation (Rio de Janeiro, Brazil), Agency for Science, Technology and Research (Singapore), National University of Singapore (Singapore), University of Santiago del Estero (Argentina), University of Quilmes (Argentina), CONICET (Buenos Aires, Argentina), University of Havana (Cuba), and PeptiPharma (Rome, Italy).

Prizes, Honours and Awards

International Travel Award for the 60th Biophysical Society Annual Meeting, 27th February to 2nd March 2016, Los Angeles, United States of America, by the Biophysical Society (USA) to Bárbara Gomes.

PROLAB Grant by the American Society of Biochemistry and Molecular Biology, May 2016 to Bárbara Gomes.

FLAD Grant by Luso-American Development Foundation in February 2016 awarded to Marcelo Augusto.

Young Scientist Travel Fund for attending Biointeractomics Workshop, in Seville, Spain, awarded by FEBS in May 2016 to Marta Marques.

SPBf grant for the 5th International Iberian Biophysics Congress, 15th to 17th June 2016, Porto, Portugal to Marcín Makowski.

Grant for registration fee in Bioimaging 2016 - 5th Symposium in Applied Bioimaging-Disease in Focus, October 2016, Porto, Portugal to Catarina Lopes.

Grant for registration fee in 5th International Iberian Biophysics Congress, June 2016, Porto, Portugal to Catarina Lopes.

Beca a la Excelencia Formativa de la Fundación Grupo Siro 2016 to Patrícia Carvalho.

Travel grant to participate at nanoPT 2016 to Patrícia Carvalho.

Wiley Young investigator award 2016 for the best oral communication (2nd place) at AFM Biomed Conference. April 11-15th 2016, Porto, Portugal to Filomena Carvalho.

Advanced Teaching

Santos NC. Atomic Force Microscopy, Doctoral Program in Molecular Biosciences (MolBioS), ITQB (Instituto de Tecnologia Química e Biológica), IBET (Instituto de Biologia Experimental Tecnológica), REQUIMTE (Rede de Química e Tecnologia), CREM (Centro de Recursos Microbiológicos), and IGC (Instituto Gulbenkian de Ciência), Oeiras, January 21, 2016.

Santos NC. Coordinated the module Nano & Biochemistry of the LisbonBioMed Doctoral Program, LisbonBioMed, iMM Lisboa, Lisbon, January 25-26, 2016.

Carvalho FA, Atomic force microscopy, LisbonBioMed PhD Program Faculdade de Medicina, Universidade de Lisboa, Lisbon, Portugal, January 25, 2016.

Santos NC. Strategies for the inhibition of viral entry and assembly, at GABBA Doctoral Program, Universidade do Porto (including ICBAS – Instituto de Ciências Biomédicas Abel Salazar, Faculdade de Ciências, Faculdade de Medicina, IBMC – Instituto de Biologia Molecular e Celular, e IPATIMUP – Instituto de Patologia e Imunologia Molecular), Porto, February 23, 2016.

Santos NC. Assessment of the mechanisms of action of HIV fusion inhibitors and broad-spectrum antivirals, at the Medicines and Pharmaceutical Innovation Doctoral Program (i3DU), at Faculdade de Farmácia da Universidade de Lisboa, Lisbon, March 16, 2016.

Santos NC. Aplicações biológicas e biomédicas da microscopia de força atómica, at the Biochemistry and Biotechnology Masters, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, Monte da Caparica, April 8, 2016.

Carvalho FA, Force Spectroscopy. Biological and Biomedical Applications, REQUIMTE BIO-AFM Hands-on Workshop. Faculdade Ciências, Universidade do Porto, Porto, Portugal, April 21, 2016.

Santos NC. Atomic Force Microscopy, at the Structural Biology Master, Instituto Superior Técnico, Universidade de Lisboa, Lisbon, May 2, 2016.

Carvalho FA. Atomic force microscopy-based molecular recognition of a fibrinogen receptor on human erythrocytes, at the Structural Biology Master, Instituto Superior Técnico, Universidade de Lisboa, Lisbon, May 6, 2016.

Santos NC. Several presentations and other activities as well as responsible for the Unit of Bases Bioquímicas da Endocrinologia of the Biotechnology Doctoral Program, Universidade Católica Dom Bosco, Campo Grande, Brasil, September 5-9, 2016.

Santos NC. Aplicações biológicas de técnicas de dispersão de luz, at the Biochemistry Master, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, Monte da Caparica, November 16, 2016.

Science and Society

Carvalho FA. “A célula” Lecture at the High School from 10º ano do Colégio do Sagrado Coração de Maria, Lisbon, Portugal, January 2016.

Santos NC. “Debate Africano”, RTP e RDP África, Portuguese TV and Radio Show, Portugal, February 9, 2016.

Faustino AF. “Ser bioquímico”. Colégio do Sagrado Coração de Maria, Lisbon, Portugal, April 11, 2016.

The research work of NSantos Lab was featured on mass media news on Região de Águeda (January 20, 2016, pp. 1 and 19), Diário de Aveiro (January 23, 2016, pp. 1 and 3), RTP África (“Debate Africano”, February 9, 2016), RDP África (“Debate Africano”, February 9, 2016), Lusa (May 19, 2016), Visão (May 19, 2016, p. 30), Público on-line (May 19, 2016), Nanotechweb (May 19, 2016), News Farma (May 19, 2016), Correio da Manhã (May 20, 2016, p. 21), Atlas da Saúde (May 20, 2016), Notícias ao Minuto (May 20, 2016), Netfarma (May 20, 2016), Alert (May 23, 2016), Phys.org (June 3, 2016), Ardinas 24 (June 5, 2016), Mundo Português (July 1, 2016, p. 28) and Nature Middle East in partnership with King Abdullah International Medical Research Center – KAIMRC (December 6, 2016).

With the aim of promoting the interest in science among young students, the NSantos lab organized visits for undergraduate students via presentations and “speed-dating” style contact with the different components the Unit’s Research work.

PhD Thesis Completed

Faustino AF 04/07/2016 Dengue virus capsid protein structural and functional studies: a gateway for possible dengue inhibition strategies. Faculdade de Medicina da Universidade de Lisboa Nuno C. Santos Ivo C. Martins.

Msc Thesis Completed

Silva PM 08/07/2016 Broad-spectrum antiviral peptides against respiratory viruses Faculdade de Ciências da Universidade de Lisboa Nuno C. Santos.

Lopes CS 09/11/2016 Using AFM to study erythrocytes’ biophysical properties on Stroke and Amyotrophic Lateral Sclerosis Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa Filomena A. Carvalho.

Makowski M 17/11/2016 Mechanism of action and membrane selectivity of a novel antimicrobial peptide Faculdade de Ciências da Universidade de Lisboa Sónia Gonçalves Abreu.

Saúde, Leonor

Major Interests / Objectives

We want to understand the cellular and molecular mechanisms controlling fundamental developmental processes and regenerative processes activated upon severe injuries.

Head of Laboratory

Maria Leonor Tavares Saúde, PhD, Assistant Professor.

Research Team

Ana Catarina Esteves Ribeiro	PhD	Post-Doctoral Investigator
Ana Filipa Canha Pereira	Undergraduate	MSc Student (Started December)
Ana Margarida Pereira Cristóvão Pinto	Graduate	Technician
Ana Paula Lopes Martins	Undergraduate	MSc Student (Started December)
Ana Sofia Rocha Batalha	Graduate	MSc Student
António José Fernandes da Silva Francisco	Graduate	PhD Student, Faculdade Medicina da Universidade de Lisboa, Teaching Assistant
Dalila Maria Neves Silva	Graduate	MSc Student
Diana Sofia Chapela Duarte Pires	Master	PhD Student (Started February)
Isaura Vanessa Antunes Martins	PhD	Investigator
José Maria Lage de Sousa Leitão	Graduate	MSc Student (Started September)
Rita Alexandra Rodrigues Pinto	Master	PhD Student
Sara Maria Ferreira Fernandes	Master	PhD Student
Tiago Filipe Ribeiro Ruas Maçarico	Master	Investigator

Laboratory Keywords / Research Areas

Left-right asymmetry, Somite formation, Fin regeneration, Spinal cord regeneration.

Major Scientific Achievements

We got a manuscript revised in Development entitled Foxj1a cells participate in spinal cord genesis and regeneration in zebrafish by A. Ribeiro and L. Saúde.

L. Saúde was the main organizer of the 4th European Zebrafish Principal Investigators Meeting (EZPM), Pavilhão do Conhecimento, Lisboa, Portugal and of the SPBD 10th Anniversary Symposium, Museu Nacional de História Natural e da Ciência, Lisboa, Portugal.

Selected Publications

Mendes R.V., Martins G.G., Martins A.M. and Saúde L. (2014) N-cadherin locks left-right asymmetry by ending the leftward movement of Hensen's node cells. Developmental Cell 30 (3), 353-60. (Journal IF: 9.708, Citations: 1).

Fior R., Maxwell A.A., Ma T.P., Vezzaro A., Moens C.B., Amacher S.L., Lewis J. and Saúde L. (2012) Differentiation and movement of presomitic mesoderm progenitor cells are both controlled by Mesogenin1. Development 139(24), 4656-65. (Journal IF: 6.462, Citations: 13).

Azevedo A.S., Sousa S., Jacinto A. and Saúde L. (2012) An amputation resets positional information to a proximal identity in the regenerating zebrafish caudal fin. BMC Developmental Biology 12(1), 24. (Journal IF: 3.234, Citations: 7).

Azevedo A.S., Grotek B., Jacinto A., Weidinger G. and Saúde L. (2011) The regenerative capacity of the zebrafish caudal fin is not affected by repeated amputations. PloS ONE Vol. 6(7), e22820. (Journal IF: 3.234, Citations: 17).

Lopes S.S., Lourenço R., Pacheco L., Moreno N., Kreiling J. and Saúde L. (2010) Notch signalling regulates left-right asymmetry through ciliary length control. Development Vol.137(21), 3625-32. (Journal IF: 6.462, Citations: 43).

Ongoing Research Projects

2015/2016: Breakthrough Idea Grant 2016. Coordinator: Maria Leonor Tavares Saúde. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: BIG 2016 LSaude. Amount: 29303.00. Amount (total): 29303.00.

Other Projects

2016/2019: Angiocrine factors as modulators of spinal cord regeneration. Coordinator: Maria Leonor Tavares Saúde.

2016/2018: Participation in the project "Towards outstanding research and training in tumour". Coordinator: Edgar Rodrigues Almeida Gomes. Agency: Comissão Europeia. Reference: Twinning - ReTuBi.

Other Publications International

Lopes SS, Distel M, Linker C, Fior R, Monteiro R, Bianco IH, Portugues R, Strähle U, Saúde L. (2016) Report of the 4th European Zebrafish Principal Investigator Meeting. Zebrafish 13(6):590-595.

Invited Lectures and Seminars

Saúde L. Bridging the regeneration gap: insights from the zebrafish. CEDOC, Lisboa, Portugal, 20 January 2016.

Saúde L. Regeneration in an adult vertebrate: insights from the zebrafish. Kick-Off Meeting of the Twinning Network ReTuBi, iMM, Lisboa, Portugal, 22 March 2016.

Saúde L. Bridging the regeneration gap: insights from the zebrafish. (2016), Kick-Off Meeting of the Portuguese Network for Spinal Cord Injury Research, ICVS, Braga, Portugal, 24 March 2016.

Saúde L. Bridging the regeneration gap: insights from the zebrafish. CCMAR, Universidade do Algarve, Faro, Portugal, 25 May 2016.

Communications in International Conferences

Saúde L. The intermediate mesoderm: a new player in left-right asymmetry. 11th Meeting of the SEBD, Girona, Spain. 19-21 October 2016. (Poster Presentation)

Ribeiro A. The bloody side of spinal cord regeneration. EMBO Young Scientists' Forum. Lisboa, Portugal. 1 September 2016. (Oral Presentation)

Communications in National Conferences

Ribeiro A. Foxj1a-positive cells at the centre of spinal cord regeneration in zebrafish. Kick-Off Meeting of the Portuguese Network for Spinal Cord Injury Research, ICVS, Braga, Portugal. 24 March 2016. (Oral Presentation)

Chapela D. Innovative therapies for spinal cord injury: a zebrafish approach. X IMM/CAML PhD Meeting, Lisboa. Portugal. 30 March 2016. (Oral Presentation)

Pinto R. Asymmetry versus symmetry: the role of dmrt2a in the formation of the vertebrate body plan. X IMM/CAML PhD Meeting, Lisboa. Portugal. 30 March 2016. (Oral Presentation)

Ribeiro A. The bloody side of spinal cord regeneration. 2nd Meeting of the Portuguese Network for Spinal Cord Injury Research, Hospital de Santa Maria, Lisboa, Portugal. 13 October 2016. (Oral Presentation)

Martins I. Angiocrine factors as modulators of spinal cord regeneration. 2nd Meeting of the Portuguese Network for Spinal Cord Injury Research, Hospital de Santa Maria, Lisboa, Portugal. 13 October 2016. (Poster Presentation)

Chapela D. Learning to swim again: Spinal Cord injury regeneration in a transected zebrafish larval model. 2nd Meeting of the Portuguese Network for Spinal Cord Injury Research, Hospital de Santa Maria, Lisboa, Portugal. 13 October 2016. (Poster Presentation)

Organisation of Conferences

Saúde L. Co-Organizer of 4th European Zebrafish Principal Investigators Meeting (EZPM), Pavilhão do Conhecimento, Lisboa, Portugal, 15-19 March 2016.

Saúde L. & Ribeiro A. Co-Organizers of SPBD 10th Anniversary Symposium, Museu Nacional de História Natural e da Ciência, Lisboa, Portugal, 23 September 2016.

Saúde L. Organizer of 2nd Meeting of the Portuguese Network for Spinal Cord Injury Research, Hospital de Santa Maria, Lisboa, Portugal, 13 October 2016.

Internationalisation

In October your laboratory started a collaboration with the laboratory of Helmut Augustin (DFKZ-Germany) through the Twinning Network ReTuBi. In this project we will study the role of Endosialin in spinal cord regeneration.

Advanced Teaching

Saúde L. Left-Right Asymmetry in Vertebrates. LisBonBioMed - Lisbon Biomedical and Clinical Research PhD Program, iMM, Lisbon, Portugal. 18 Janeiro 2016.

Saúde L. EMT/MET processes in vertebrate development. ProRegeM - PhD PROGRAMME in MECHANISMS of DISEASE and REGENERATIVE MEDICINE, CEDOC, Lisbon, Portugal. 3 February 2016.

Saúde L. Embryonic Development. Stem cells get practical Post-Graduation Couse. ICVS/ECS-Universidade do Minho, Braga, Portugal. 1 March 2016.

Saúde L. Genetics & Development Course, Programa de Pós-Graduação Ciência para o Desenvolvimento, Praia, Santiago, Cape Verde. 7-9 March 2016.

Saúde L. The amazing regenerative capacity of the zebrafish. GABBA PhD Programme, IBMC, Porto, Portugal. 14 June 2016.

Saúde L. Left-Right Patterning. GABBA PhD Programme, IBMC, Porto, Portugal, 7 July 2016.

Ribeiro A. Creating diversity and functional integration: the central nervous system. Master in Evolutionary and Developmental Biology, Faculdade de Ciências da Universidade de Lisboa, Portugal. March 15 2016.

Science and Society

Saúde L. (30 April 2016) – Fund Raising Call Centre, Maratona da Saúde, Lisboa, Portugal.

Chapela D. (30 April 2016) – Live Antena 1 Radio interview on neurodegenerative diseases organizes by Maratona da Saúde, Lisboa, Portugal.

Saúde L. (16 June 2016) – 60 minutos de Ciência, Museu Nacional de História Natural e da Ciência, Lisboa, Portugal.

Saúde L. (30 September 2016) – Participation in the “European Night of Researchers”, Lisboa, Portugal.

Ribeiro A. (30 September 2016) – Participation in the “European Night of Researchers”, Lisboa, Portugal.

Chapela D. (30 September 2016) – Participation in the “European Night of Researchers”, Lisboa, Portugal.

Martins I. (30 September 2016) – Participation in the “European Night of Researchers”, Lisboa, Portugal.

Saúde L. (7 October 2016) – Interview PUBLICO newspaper.

Sebastião, Ana

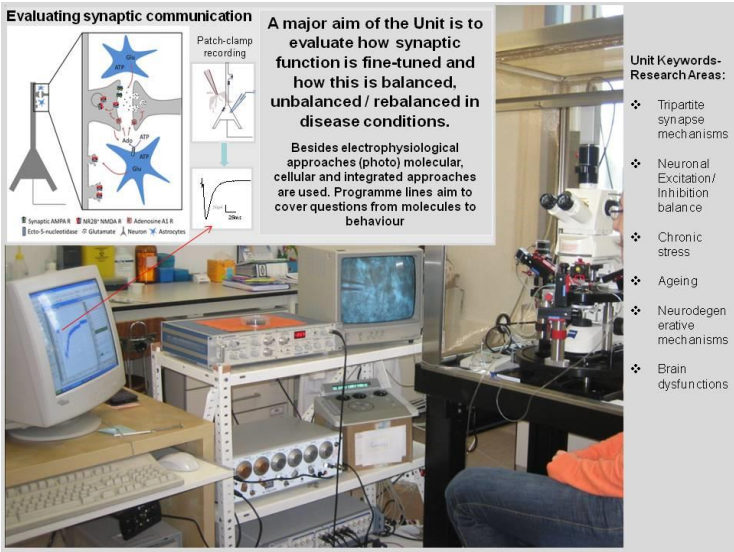
Major Interests / Objectives

To fight brain diseases one has to correct abnormal synaptic function, a main challenge to Neurosciences. We aim to elucidate how the neuronal and glial components of the tripartite synapse are fine-tuned under normal and dysfunctional situations. How endogenous modulators affect the pre- post and glial components of the tripartite synapse, neuronal excitability, neuronal and glial cell renewal, neuronal and glial maturation and degeneration, under normal and pathological conditions, are topics under current investigation by the Unit. As endogenous modulators we focus on neurotrophic factors, adenosine and endocannabinoids. As disease models we have been focusing on Alzheimer's disease, epilepsy, amyotrophic lateral sclerosis and multiple sclerosis.

Head of Laboratory

Ana M Sebastião, PhD, Full Professor.

Graphical Abstract



Research Team

Amílcar Silva dos Santos	MD	PhD Student
Ana Filipa Ferreira da Cunha Ribeiro	Master	PhD Student
Ana Iolanda d'Armada Moreira	Master	PhD Student (started February)
Ana Sofia Cristóvão Ferreira	PhD	Volunteer Investigator
Armando Dulcídio da Silva Cruz	Master	PhD Student

Catarina Miranda Lourenço	PhD	PhD Student (Started September)
Cátia Isabel Afonso Domingos	Graduate	MSc Student (Left September)
Cláudia Alexandra dos Santos Valente de Castro	PhD	Investigator
Cláudia Filipa Martins Afonso	Graduate	MSc Student
Cláudia Sofia Beltrão Cavacas	Graduate	MSc Student (Started September)
Daniela Cristina Melo Magalhães	Master	Trainee
Diogo Miguel Rombo	PhD	Investigator
Francisco Melo Albuquerque Saraiva Mouro	Master	PhD Student
Isabel Maria do Amaral Rodeia Rodrigues de Brito	Undergraduate	Trainee
Joana Amorim Freire	Master	MSc Student (Started September)
João Filipe Fonseca Gomes	Master	PhD Student (Started April)
João Pedro de Almeida Jesus	Graduate	MSc Student
Joaquim Alexandre Ribeiro	MD/PhD	Principal Investigator
Leonor Pedro Oliveira Ribeiro Rodrigues	Graduate	MSc Student (Started September)
Liana Shvachiy	Master	Trainee
Luís Afonso Chambel André	Graduate	MSc Student
Margarida Leonor Ferreira Martins	Master	MSc Student (Left August)
Maria Alexandra Pereira Botelho	Undergraduate	Administrative
Maria José Diógenes	PhD	Investigator, Faculdade Medicina da Universidade de Lisboa, Assistant Professor
Nádia Raquel Henriques Rei	Master	PhD Student
Nuno Miguel Da Silva Rosa	Master	MSc Student
Pedro Dinis Avelar Agostinho	Master	Investigator (Left December)
Raquel Alice da Silva Baptista Dias	MD/PhD	Investigator
Rita Abrunhosa Soares	Master	Trainee
Rita Alexandra Figueira Belo	Master	PhD Student
Rita Cruz Coelho de Mira Ramalho	PhD	Post-Doctoral Investigator
Rita Isabel Pedro Aroeira	PhD	Manager
Rui Miguel Silva Rodrigues	Graduate	Trainee
Sandra Cristina Henriques Vaz	PhD	Post-Doctoral Investigator
Sara Alves Xapelli	PhD	Investigator
Sara Luísa Ramalho Tanqueiro	Master	PhD Student
Sara Raquel Landeira Nabais do Paulo	Graduate	MSc Student (Started September)
Tatiana Pinto Morais	Graduate	Trainee
Tiago Filipe Martins Rodrigues	Master	Investigator

Laboratory Keywords / Research Areas

Tripartite synapse mechanisms, Neuronal excitation/inhibition balance, Neurodegenerative Mechanisms, Ageing, Epilepsy, Drug Abuse.

Major Scientific Achievements

- Recognizing maladaptative synaptic plasticity as underlying mechanisms of an 'atypical' form of young adult epilepsy as well as of memory dysfunction in the aged (Sandau-J Neurosci; Pinho Neuropharmacology; Figueira–Mechan Ageing Develop).

- Identifying how inhibitory synaptic transmission at the hippocampus is fine-tuned by adenosine and BDNF, an issue largely disregarded in the past (Rombo-Cerebral Cortex; Colino-Oliveira -Purinergic Signalling; Aroeira-Neurochem int; Rombo-J Neurochem).

- Identifying a yet unknown role for adenosine at the hippocampus: modulation of axonal growth, opening a window for a role on neuronal regeneration (Ribeiro FF- Brain Struct & Func; Ribeiro FF- Neuropharmacology; Ribeiro FF -Neural Regen Res).

- Identifying cGMP as being involved in the inhibitory action of adenosine on synaptic transmission (Pinto-Front Pharmacol).

- Associating chocolate consumption with a lower risk of cognitive decline in the elderly (Moreira-J Alzheimer's Disease).

Selected Publications

Rombo DM, Ribeiro JA, Sebastião AM (2016) Adenosine A1 receptor suppresses Tonic GABAA receptor currents in hippocampal pyramidal cells and in a defined subpopulation of interneurons. Cerebral Cortex 26, 1081-1095. (Journal IF: 8.285, Citations: 9).

Dias RB, Rombo DM, Ribeiro JA, Henley JM, Sebastião AM (2013) Adenosine: setting the stage for plasticity. Trends in Neuroscience 36, 428-257. (Journal IF: 12.504, Citations: 42).

Diogenes MJ, Costenla AR, Lopes LV, Jerónimo-Santos A, Sousa VC, Fontinha BM, Ribeiro JA, Sebastião AM (2011) Enhancement of LTP in aged rats is dependent on endogenous BDNF. Neuropsychopharmacology 36, 1823-1836. (Journal IF: 6.399, Citations: 50).

Ribeiro JA, Sebastião AM (2010) Caffeine and Adenosine. J. Alzheimer's Disease 20, S3-S15. (Journal IF: 3.92, Citations: 80).

Sebastião AM, Ribeiro J A (2009) Adenosine Receptors in the Central Nervous System. Handbook of Experimental Pharmacology 193, 471-534. (Journal IF: 3.89, Citations: 156).

Ongoing Research Projects

2013/2016: PhD in Biomedical Sciences, Specialty in Neuroscience. Coordinator: Ana M Sebastião. Agency: Cardlane Ltd. Reference: PhD project Armand Cruz. Amount: 80984.00.

2014/2016: Neurophysiological mechanisms of aging: novel view of old concepts. Coordinator: Maria José Diógenes. Agency: Fundação Bial. Reference: Bial fellowship programme 57/12. Amount: 49000.00. Amount (total): 49000.00.

2016/2016: não aplicável. Coordinator: Ana M Sebastião. Agency: FAPESP. Reference: Fapesp - Karian Marra. Amount: 377.30. Amount (total): 377.30.

2016/2018: TWINNING (H2020) *Neurologic and Psychiatric Disorders: from synapses to networks* – SynaNet, financed by European Commission. Coordinator: Ana Sebastião. Amount: 525.437,50. Amount (total): 1.000.000,00.

2016/2019: Synaptic, mechanisms involved in the brain cannabinoid actions and their modulation by adenosine receptors: implications for memory and mood control. Coordinator: Ana M Sebastião. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/DTP-FTO/3346/2014. Amount: 189900.00. Amount (total): 199900.00.

2016/2019: Optogenetic dissection of neural circuits controlling adiposity. Collaborative project with Gulbenkian Institute of Science (project coordinator: Ana Domingos). PTDC/BIM-MET/3750/2014. Coordinator at IMM: AM Sebastião. IMM budget: 19.800,00; total budget: 199.999,00. Nº of participants: 2.

2016/2019: Relationship between adenosine and chromosomal instability: a new perspective to understand the oncogenic mechanism in glioblastoma. Collaborative Project with Universidade da Beira Interior (project coordinator: José Francisco Cascalheira). PTDC/BIMONC/7121/2014. Coordinator at IMM: AM Sebastião. IMM budget: 25.000,00. Total budget: 155.000,00. Nº of participants: 3

Other Projects

2010/2016: Glycinergic neurotransmission at the hippocampus. Coordinator: Cláudia Valente.

2010/2020: Amyloid beta peptide-induced toxicity: impact on hippocampal function. Coordinator: Maria José Diógenes.

2013/2016: Synaptic activity modulation by Erythropoietin. Coordinator: Raquel Dias.

2013/2020: Modulatory role of adenosine and canabinoids in oligodendrogenesis and neurogenesis derived from neural stem/progenitor cells of the subventricular zone. Coordinator: Sara Xapelli.

2013/2020: Deciphering the role of inflammation in epileptogenesis. Coordinator: Cláudia Valente.

2014/2017: Targeting selected synapses to develop new antiepileptic drugs with minimal side effects. Coordinator: Ana M Sebastião (collab. Ken Jackobson, NIH, Bethesda).

2014/2018: Modulation of cholinergic signalling in cultured superior cervical ganglion neurons. Coordinator: Sandra Vaz. Coordinator Institution: Gulbenkian Institute of Science. Coordinator PI: Ana Domingos.

2015/2016: Hebbian Plasticity-driven changes of synaptic homeostasis in Alzheimer's Disease (Financed by Bolsas Gulbenkian/FMUL: 2.500,00€). Coordinator: Maria José Diógenes.

2015/2016: NR2B-Containing NMDA Receptors in the dorsal and ventral hippocampus on the behavioral consequences of Chronic Unpredictable Stress. Coordinator: Raquel Dias. Coordinator Institution: Universidade do Minho. Coordinator PI: João J. Cerqueira.

2015/2016: Inhibition of inflammatory pathways – Protective effect upon epileptogenesis. GAPIC funded (2500€). Coordinator: Cláudia Valente.

2015/2018: Astrocytic influence of BDNF actions at the hypocampus. Coordinator: Sandra Vaz (Colab, João Oliveira, Neurosciences Research Domain (NeRD), ICVS/3B´s Laboratório Associado, University of Minho).

2016/2017: Influência dos astrócitos na plasticidade sináptica no hipocampo de ratinho: modulação pelo BDNF, pelos receptores A2A de adenosina e pelo péptido ß-amilóide. GAPIC Funded (2500€). Coordinator: Sandra Vaz.

2016/2018: Análise do sistema nitrérgico em astrócitos após estimulação de receptores de ATP: avaliação do envolvimento dos receptores A1 e A2A de adenosina. Coordinator: Sandra Vaz (in collaboration with University of S. Paulo - intership of Karina Lucatto Marra from February 2016 to June 2016.

2016/2020: Astrosomes - A novel approach for the regulation of neuronal communication. Coordinator: Sandra Vaz (in collaboration with Brigitte Städler Aarhus University for the PhD Thesis of Ana Armada-Moreira).

2016/2020: Adenosine kinase activity in Rett Syndrome. Coordinator: MJ Diógenes (in collab with Detlev Boison, Portland, USA).

Publications in Peer Review Journals

Rombo DM, Dias RB, Duarte ST, Ribeiro JA, Lamsa KP, Sebastião AM (2016). Adenosine A1 receptor suppresses Tonic GABAA receptor currents in hippocampal pyramidal cells and in a defined subpopulation of interneurons. Cereb Cortex 26:1081-1095 (IF:8.285; Citations:9).

Sandau US*, Colino-Oliveira M*, Jones A, Saleumvong B, Coffman SQ, Liu L, Miranda-Lourenço C, Palminha C, Batalha VL, Xu Y, Huo Y, Diógenes MJ, Sebastião AM**, Boison D** (2016). Adenosine Kinase Deficiency in the Brain Results in Maladaptive Synaptic Plasticity. J Neurosci. 36:12117-12128 (*co-first authors; **co-senior authors) (IF: 5.924/Q1).

Ribeiro FF, Neves-Tomé R, Assaife-Lopes N, Santos TE, Silva RFM, Brites D, Ribeiro JA, Sousa MM, Sebastião AM (2016) Axonal elongation and dendritic branching is enhanced by adenosine A2A receptors activation in cerebral cortical neurons. Brain Struct & Func 221:2777-2799 (IF: 5.811/Q1, Citations: 3).

Pinho J, Vale R, Batalha VL, Costenla AR, Dias R, Rombo D, Sebastião AM, de Mendonça A, Diógenes MJ (2016) Enhanced LTP in aged rats: Detrimental or compensatory? Neuropharmacology. [Epub Nov 23rd] (IF 4.936/Q1).

Pinto I, Serpa A, Sebastião AM, Cascalheira JF (2016) The Role of cGMP on Adenosine A 1 Receptor-mediated Inhibition of Synaptic Transmission at the Hippocampus. Front Pharmacol. 7:103 doi: 10.3389/fphar.2016.00103. eCollection 2016 (IF: 4.418; Q1).

Aroeira RI, Vaz SH, Sebastião AM, Valente CA (2016) BDNF modulates glycine uptake in hippocampal synaptosomes by decreasing membrane insertion of glycine transporter 2. Neurochem Int. 99:94-102 (IF: 3.385/Q2).

Colino-Oliveira M., Rombo D. M., Dias R. B., Ribeiro J. A., Sebastião A. M. (2016) BDNF-induced pre-synaptic facilitation of GABAergic transmission in the hippocampus of young adults is dependent of TrkB and adenosine A2A receptors. Purinergic Signal., 12:283-294 (IF: 3.196/Q2).

Moreira A, Diógenes MJ, de Mendonça A, Lunet N, Barros H (2016). Chocolate Consumption is Associated with a Lower Risk of Cognitive Decline. J Alzheimer´s Dis 53: 85-93 (IF 3.920/ Q2).

Moura M, Silva-Dos-Santos A, Afonso J, Talina M (2016). First-episode psychosis in a 15-year-old female with clinical presentation of anti-NMDA receptor encephalitis: a case report and review of the literature. BMC Res Notes. 9:374 (IF: NA).

Ribeiro FF, Xapelli S, Miranda-Lourenço C, Tanqueiro SR, Fonseca-Gomes J, Diógenes MJ, Ribeiro JA, Sebastião AM (2016). Purine nucleosides in neuroregeneration and neuroprotection, Neuropharmacology, 104:226-242 (IF 4.936/Q1, Citations:8).

Oliveira JF, Gomes CA, Vaz SH, Sousa N, Pinto L (2016). Glial plasticity in depression. Front. Cell. Neurosci. 10:163. doi: 10.3389/fncel.2016.00163. eCollection 2016 (IF: 4.609/Q1).

Rombo DM, Ribeiro JA, Sebastião AM (2016). Hippocampal GABAergic transmission: a new target for adenosine control of excitability. J Neurochem. 139:1056-1070 (IF: 3.842/Q2).

Figueira I, Fernandes A, Mladenovic A, Lopez-Contreras A, Henriques CM, Selman C, Ferreiro E, Gonos ES, Trejo JL, Misra J, Rasmussen LJ, Xapelli S, Ellam T, Bellantuono I (2016) Interventions for age-related diseases: shifting the paradigma Mechanisms of Ageing and Development 160:69-92. (IF: 2.892/Q2).

Ribeiro FF, Sebastião AM (2016) Adenosine A2A receptors in neuronal outgrowth: a target for nerve regeneration? Neural Regen Res. 11:706-708 (IF: 0.968/Q4).

Correia L, Sebastião AM, Santana P (2016) On the role of stigmergy in cognition. Prog. Artif Intell. Epub, DOI 10.1007/s13748-016-0107-z

Other Publications International

Ferré S, Sebastião AM (2016) Dissecting striatal adenosine-cannabinoid receptor interactions. New clues from rats over-expressing adenosine A2A receptors. J Neurochem. 136:897-899 (IF: 3.842/Q2).

Dale N, Sebastião AM (2016) Dissecting neurovascular coupling mechanisms: a role for adenosine A2A receptor: An Editorial highlight for 'Correlation of transient adenosine release and oxygen changes in the caudate-putamen'. J Neurochem. 2017 Jan;140(1):10-12 (Epub December 15th) (IF: 3.842/Q2).

Silva-Dos-Santos A (2016) Commentary on 'Blue-blocking glasses as additive treatment for mania: A randomized placebo-controlled trial'. Bipolar Disord. 18:708-709 (IF 4.882/Q1).

Sardá-Arroyo L, Schitine C, Xapelli S, Ulrich H. (2016) Mice post-natal subventricular zone neurospheres: derivation, culture, differentiation and applications In: Working with Stem Cells – A quick and easy approach of methodologies and applications (Negraes PD, Ulrich H, eds), Springer Publishing.

Other Publications National

Diógenes MJ, Duarte ST, Sebastião AM (2016) "Fármacos antiepiléticos: mecanismos de ação e farmacocinética". Em: Epilepsia, conceitos, diagnóstico e tratamento pp 179-204. Lidel.

Cunha RA, Sebastião AM (2016) Sistema Purinérgico. In: Neurociências, ed: Rego AC et al, LIDEL - Edições Técnicas, Lisboa.

Invited Lectures and Seminars

Sebastião AM (2016) Purinergic modulation of astrocytic function. 48th Brazilian Congress of Pharmacology and Therapeutics and 21st Latin American Congress of Pharmacology, Outubro 4-7, Foz-de-Iguaçu, Paraná, Brasil.

Sebastião AM (2016) Modulation of GABAergic transmission at the hippocampus by adenosine. Departamento de Farmacologia, Universidade Federal de S. Paulo, Outubro 10, S. Paulo, Brasil.

Diógenes MJ (2016) Age-related alterations of fine control of neuronal communication- EIT-Health Ageing Brain summer school. 5 Julho, 2016, Groningen, the Netherlands.

Ribeiro JA (2016) ALS: an experimental update. Xenopus Oocytes. From synapses from brain diseases. 1st SynaNet workshop, 13-14 June, Rome, Italy.

Vaz, SV (2016) Calcium imaging. Neuroimaging workshop of the Mind-Brain College of the University of Lisbon, June 2-3, Lisboa, Portugal.

Sebastião AM (2016) The Novel Object Recognition task – outline and example applications. 3rd SynaNet Workshop, 26-27 Setembro, Lancaster, UK.

Sebastião AM, Rombo DM, Lamsa KP, Ribeiro JA (2016) Modulation of GABAergic inhibitory inputs to hippocampal interneurons by adenosine. 7th ISN Special Neurochemistry Conference 'Synaptic Function & Dysfunction in Brain Diseases, June 1-4 2016, Coimbra, Portugal.

Sebastião AM, Nascimento F, Rocha MC, Ribeiro JA (2016) Pathological changes at the neuromuscular junction of an ALS mice model. ALS Symposium, Faculdade de Farmácia, Universidade de Lisboa, 22-23 Abril, Lisboa, Portugal.

Ribeiro JA (2016) Neuromuscular transmission in the SOD1 (G93A) mice model of Amyotrophic Lateral Sclerosis: Regulation by adenosine. SynaNet Kick-off Meeting, 11-12 Fevereiro, Lisboa, Portugal.

Ana Maria Sebastião (2016) Adenosine modulation of GABAergic neurons: relationship with cannabinoid signalling. SynaNet Kick-off Meeting, 11-12 Fevereiro, Lisboa, Portugal.

Diógenes MJ (2016) Rett Syndrome and Alzheimer´s disease: different disorders with common features. SynaNet Kick-off Meeting, 11-12 Fevereiro, Lisboa, Portugal.

Valente CA (2016) Neurobiology of inflammation - interplay with epilepsy. SynaNet Kick-off Meeting, 11-12 Fevereiro, Lisboa, Portugal.

Armada-Moreira A (2016) "Astrosomes: A novel approach for the regulation of neuronal communication." iNANO Cell Mimicry Group Meeting, Aarhus, Denmark.

Sebastião AM (2016) Desafios da aprendizagem: a resposta das neurociências. Os avanços das Neurociências aplicados à formação, III Encontros das Academias Coorporativas, Fundação Calouste Gulbenkian, 24 de Novembro, Lisboa, Portugal.

Diógenes MJ (2016) Farmacocinética e Farmacodinamia - Workshop de farmacologia clínica na criança e no adolescente. 14 Abril, 2016, Faculdade de Medicina da Universidade de Lisboa.

Communications in International Conferences

Cruz A, Carlstrom M, Sebastião AM (2016) The Role of Adenosine A1 Receptor in Hippocampal Synaptic Plasticity Modulated by Cannabinoid CB1 Receptor. 10th Forum of European Neuroscience, 2nd-6th July, Copenhagen, Denmark. (Poster)

Fonseca-Gomes J, Jerónimo-Santos A, Sebastião AM, Diógenes MJ (2016). Characterization of the newly discovered TrkB receptor fragment formed in the presence of amyloid beta peptide. 10th Forum of European Neuroscience, 2nd-6th July, Copenhagen, Denmark. (Poster)

Miranda-Lourenço C, Palminha C, Duarte ST, Gaspar C, Colino-Oliveira M, Gomes R, Ferreira S, Rodrigues TM, Lopes LV, Sebastião AM, Diógenes MJ (2016). Dysregulation of adenosinergic system in Rett Syndrome. 10th Forum of European Neuroscience, 2nd-6th July, Copenhagen, Denmark. (Poster)

Sebastião AM. Rombo DM, Lamsa KP and Ribeiro JA (2016) Modulation of tonic GABAergic currents in cannabinoid CB1 receptor immunopositive hippocampal interneurons by adenosine A1 receptors. 10th Forum of European Neuroscience, 2nd-6th July, Copenhagen, Denmark. (Poster)

Vaz SH, de Castro-Abrantes H, Avelar P, Diógenes MJ, Sebastião AM (2016) Adenosine A1 and A2A receptors modulate mGluR5-mediated calcium signalling in rat cortical primary astrocytes. 10th Forum of European Neuroscience, 2nd-6th July, Copenhagen, Denmark. (Poster)

Miguelez C, Chazalon M, Morin S, Martinez A, Cristóvão-Ferreira S, Vaz SH, Sebastião AM, Bioulac B, Boue-Grabot E, Ugedo L, Paredes E, Baufreton J (2016) Aberrant tonic inhibition in the globus pallidus in parkinsonian rodents. 10th Forum of European Neuroscience, 2nd-6th July, Copenhagen, Denmark. (Poster)

Ribeiro FF (2016) Modulation of neurogenesis by adenosine and BDNF - Route28 Summits of Neurobiology, Adult Neurogenesis: Form & Function, 9th Edition, Frauenchiemsee, Germany, February 19-25 (Poster)

Rodrigues RS (2016) Modulation of neurogenesis by cannabinoids and adenosine - Route28 Summits of Neurobiology, Adult Neurogenesis: Form & Function, 9th Edition, Frauenchiemsee, Germany, February 19-25. (Poster)

Soares R, Ribeiro FF, Xapelli S, Sebastião AM, Rodrigues CMP, Solá S (2016) The bile acid tauroursodeoxycholic acid enhances the neural stem cell pool and increases the neuronal differentiation in vivo - FENS-SFN Summer School "On Cellular Mechanisms and Networks in Addiction", Bologna (Italy), 29 of May - 4 of June. (Poster)

Cruz A, Carlstrom M, Sebastião AM (2016) The influence of CB1 and A1 receptors on the modulation of synaptic plasticity. 7th ISN 2016 Special Neurochemistry "Synaptic Function and Dysfunction in Brain Diseases", June, Coimbra, Portugal. (Poster)

Rei N, Vaz SH, Colino-Oliveira M, Valente CA, Ribeiro JA, Sebastião AM (2016) Molecular characterization of Adenosine and VEGF receptors in SOD1(G93A) mouse model of Amyotrophic Lateral Sclerosis (ALS); 5th Iberian Biophysics Congress, June, 15th-17th, Porto, Portugal. (Poster)

Communications in National Conferences

Armada-Moreira A, Rodrigues R, Ribeiro FF, Sebastião AM, Xapelli S (2016) Exploring the modulatory role of A2A receptors in oligodendrogenesis derived from rat subventricular zone neural stem/progenitor cells. - XLVI Annual meeting of The Portuguese Pharmacological Society, Porto (Portugal), 4-6 of February. (Oral Presentation)

Fonseca-Gomes J, Jerónimo-Santos A, Sebastião AM, Diógenes MJ (2016). TrkB-ICD: Characterization of this newly discovered TrkB receptor fragment formed by calpain cleavage. XLVI Reunião Anual da Sociedade Portuguesa de Farmacologia, Faculdade de Medicina, Universidade do Porto. (Oral Presentation)

Martins MF, Shvachiy L, Mouro FM, Perrazo J, Coelho JE, Xapelli S, Valente CA, Castanho MA, Sebastião AM (2016) Neuroprotective action of a kyotorphin derivate in an animal model of alzheimer's disease. XLVI Annual meeting of The Portuguese Pharmacological Society, Porto (Portugal), 4-6 of February. (Oral Presentation)

Miranda-Lourenço C, Palminha C, Duarte ST, Gaspar C, Colino-Oliveira M, Gomes R, Ferreira S, Rodrigues TM, Lopes LV, Sebastião AM, Diógenes MJ (2016). Adenosinergic system: a new central player in Rett Syndrome. XLVI Annual meeting of The Portuguese Pharmacological Society, Porto (Portugal), 4-6 of February. (Oral Presentation)

Mouro FM, Batalha VL, Ferreira DG, Coelho JE, Younis Baqi Y, Müller CE, Lopes LV, Ribeiro JA, Sebastião AM (2016) Adenosine A2ARs: Hand-In-Hand with CB1Rs Mediating Memory Consolidation Deficits. XLVI Annual meeting of The Portuguese Pharmacological Society", Porto (Portugal), 4-6 of February. (Oral Presentation)

Rei N, Vaz SH, Colino-Oliveira M, Ribeiro JA, Sebastião AM. Characterization of neuromodulatory Dysfunction in Amyotrophic Lateral Sclerosis. XLVI Annual meeting of The Portuguese Pharmacological Society, Porto (Portugal), 4-6 of February. (Oral Presentation)

Rodrigues R, Ribeiro FF, Armada-Moreira A, Sebastião AM, Xapelli S (2016) Adenosine A2A receptors' role on cannabinoid-mediated neurogenesis in the dentate gyrus. - XLVI Annual meeting of The Portuguese Pharmacological Society, Porto (Portugal), 4-6 of February. (Oral Presentation)

Soares R, Ribeiro FF, Xapelli S, Sebastião AM, Rodrigues CMP, Solá S (2016) Role of a bile acid in improving survival and function of neural stem cells. - XLVI Annual meeting of The Portuguese Pharmacological Society, Porto (Portugal), 4-6 of February. (Oral Presentation)

Ribeiro FF, Ferreira F, Soares R, Rodrigues R, Armada-Moreira A, Solá S, Mira H, Sebastião AM, Xapelli S (2016) Adenosine A2A Receptor Activation Regulates Postnatal Hippocampal Neurogenesis – Brain without borders, Coimbra (Portugal), 18-19 of November. (Oral Presentation)

Cruz A, Carlstrom M, Sebastião AM (2016) Modulation of Synaptic Plasticity by Endocannabinoids: Cross-Talk with Adenosine A1 Receptors. 2nd PhD students Meeting of the Mind-Brain College, Lisboa, November 28-29. (Oral Presentation)

Afonso C, Ribeiro FF, Sebastião AM, Xapelli S (2016) Exploring the modulatory role of adenosine A2A receptors in rat in vivo oligodendrogenesis - 2nd PhD students Meeting of the Mind-Brain College, November 28-29, Lisboa, Portugal. (Poster)

Fonseca-Gomes J, Jerónimo-Santos A, Sebastião AM, Diógenes MJ (2016). Characterization of the newly discovered TrkB receptor fragment (TrkB-ICD) formed by calpain cleavage. 2nd Meeting of PhD Students from Mind-Brain College of the University of Lisbon, November 28-29, Lisboa, Portugal (Poster)

Morais T, D Coelho, AM Sebastião, CA Valente (2016). Expression and function of Glycine receptor in rat cortical astrocytes. 2nd Meeting of Mind-Brain College, November 28-29, Lisbon, Portugal. (Poster)

Magalhães D, N Pereira, AM Sebastião, CA Valente (2016). Progression of inflammatory mediators in the organotypic hippocampal slice model of epileptogenesis. 2nd Meeting of Mind-Brain College, November 28-29, Lisbon, Portugal. (Poster)

Rei N, Vaz SH, Colino-Oliveira M, Ribeiro JA, Valente CA, Sebastião AM (2016) Expression of VEGF, Adenosine and VEGF receptors in Amyotrophic Lateral Sclerosis (ALS) mice model at different disease stages. 2nd Meeting of Mind-Brain College, November 28-29, Lisbon, Portugal. (Poster)

Ribeiro FF, Soares R, Solá S, Mira H, Sebastião AM, Xapelli S (2016) Adenosine A2A receptor activation regulates postnatal neurogenesis - 2nd PhD students Meeting of the Mind-Brain College, Lisboa, November 28-29. (Poster)

Rodrigues R, Ribeiro FF, Ferreira F, Sebastião AM, Xapelli S (2016) Interaction between cannabinoid type 1 and type 2 receptors in the modulation of subventricular zone and dentate gyrus neurogenesis - 2nd PhD students Meeting of the Mind-Brain College, Lisboa, November 28-29. (Poster)

Soares R, Ribeiro FF, Xapelli S, Sebastião AM, Rodrigues CMP, Solá S (2016) Subventricular administration of the bile acid tauroursodeoxycholic acid increases neural stem cell pool and early neurogenesis in the adult brain - 2nd PhD students Meeting of the Mind-Brain College, Lisboa, November 28-29. (Poster)

Cruz A, Carlstrom M, Sebastião AM (2016) The impact of adenosine A1 receptor on cannabinoid receptor 1-induced modulation of synaptic plasticity. X PhD iMM/CAML meeting, Lisbon, Portugal, March 2016. (Oral Presentation)

Armada-Moreira A, Städler B, Vaz SH (2016) “Astrosomes: a novel approach for the regulation of neuronal communication.” X iMM/CAML PhD meeting, 30th March-1st April, Lisboa, Portugal (Oral Presentation)

Belo R, Sebastião AM, Neves V, Diógenes MJ (2016). Kyotorphin as new pharmacological therapeutic strategy for Alzheimer's disease. X IMM/CAML PhD Meeting. Instituto de Medicina Molecular, Lisboa. (Oral Presentation)

Fonseca-Gomes J, Sebastião AM, Diógenes MJ (2016). BDNF receptor cleavage: relevance for Alzheimer's disease pathophysiology. X IMM/CAML PhD Meeting. Instituto de Medicina Molecular, Lisboa. (Oral Presentation)

Magalhães D, Sheridan GK, Valente CA (2016) Enhancing cognitive resilience in aged and socially-isolated mice by modulating cellular crosstalk between immune and central nervous systems. X IMM/CAML PhD Meeting. Instituto de Medicina Molecular, Lisboa. (Oral Presentation)

Miranda-Lourenço C, Diógenes MJ, (2016). Regulation of adenosinergic system as a new therapeutic strategy in Rett Syndrome. IMM/CAML PhD meeting. Instituto de Medicina Molecular, Lisboa. (Oral Presentation)

Rei N, Vaz SH, Colino-Oliveira M, Valente CA, Ribeiro JA, Sebastião, AM (2016) Molecular characterization of Adenosine and VEGF receptors in SOD1(G93A) mouse model of Amyotrophic Lateral Sclerosis (ALS); X iMM PhD meeting, 31st March – 1st April 2016; Lisbon – Portugal. (Poster)

Sebastião AM (2016) Neurotrophic actions of neurotrophins. IMM internal Seminar, July (Oral)

Soares R, Ribeiro FF, Xapelli S, Sebastião AM, Rodrigues CMP, Solá S (2016) Tauroursodeoxycholic Acid as a Potential Treatment of Impaired Neurogenesis Diseases - 8th Postgraduate iMed.ULisboa Students Meeting, Lisbon (Portugal), 14-15 of July. (Poster)

Cabrita J, Macau R, Sebastião AM, Vaz SH (2016) The influence of astrocytes in synaptic plasticity in mice hippocampal region: modulation by BDNF and adenosine A2A receptors. Dia da Investigação para Estudantes de Medicina - Educação pela Ciência" (GAPIC) program, 14th December, Lisboa, Portugal. (Oral Presentation)

Brito I, N Rosa, AM Sebastião, CA Valente (2016). Inibição de Vias Inflamatórias – Efeito Protetor na Epileptogénese. Dia da Investigação para Estudantes de Medicina - Educação pela Ciência" (GAPIC) program, 14th December, Lisboa, Portugal. (Poster)

Organisations of Conferences

Sebastião AM and Rita Aroeira. Organizers of the Kick-off meeting of the H2020 SynaNet twinning action - January 2016.

Sebastião AM, Aroeira R, Belo R, Fonseca-Gomes J, Miranda-Lourenço C, Morais T, Ribeiro FF, Rodrigues R, Tanqueiro S. Organizers of the 2nd Meeting of the Mind-Brain College of the University of Lisbon.

Rita Aroeira and Sandra Vaz together with the Student Committee of the Mind-Brain College, organized a theoretical and practical workshop on 'Brain Imaging – an introduction'. This workshop counted also with the active participation of researchers from other Institutions of the University of Lisbon.

Internationalisation

Present International Collaborations:

Brigitte Städler - (AArhus, Denmark) with Sandra Vaz on astrocytic-like approaches for the regulation of neuronal communication.

Brigitte Städler - Interdisciplinary Nanoscience Center (iNANO).

Christopher Parsons (Frankfurt, Germany) with MJ Diógenes within the project on Neurophysiological mechanisms of aging: novel view of old concepts, funded by the Bial Foundation.

Cristha E Muller (Bonn, Germany) with Ana Sebastião on the influence of adenosine upon memory impairment by cannabinoids.

Detlev Boison (Portland, USA) with M J Diógenes on the role of adenosine metabolizing enzymes in Rett Syndrome.

Eero Castren (Helsinki) on Neurotrophin signalling dysfunction in Alzheimer disease models.

Jérôme Baufreton (CNRS, Bordeaux) with Sandra Vaz and Ana Sebastião on GABA transport and GABAergic tonic inhibition in the Globullus Pallidus: dysfunction characterization in an animal model of Parkinson's disease.

Karl Jaconson (NIH, Bethesda, USA) with Ana Sebastião on the characterization of the action of an antiepileptic compound at selected hippocampal synapses.

Vincent Crunelli (Cardiff, UK) Ana Sebastião on the role of GABA transporters and BDNF in absence epilepsy.

COST Action BM1302 - Joining Forces in Corneal Regeneration Research - Management Committee member: Sara Xapelli.

COST Action BM1402 - Development of A European Network for Preclinical Testing of Interventions in Mouse Models of Age and Age-Related Diseases (MouseAGE). Management Committee Substitute Member: Sara Xapelli.

Twinning H2020 action – SynaNet – collaboration between several Unit members with researchers of the University of Rome, University of Eastern Finland, University of Lancaster. Coordinator: Ana Sebastião.

Editorial Activity:

Ana M Sebastião – Handling Editor of Journal of Neurochemistry;

Ana M Sebastião – Member of the Editorial Board of European Journal of Pharmacology;

Ana M Sebastião – Member of the Editorial Board of Purinergic Signalling;

JA Ribeiro – Member of the Editorial Board of Purinergic Signalling;

JA Ribeiro – Member of the Editorial Board of the Journal of Caffeine Research;

JA Ribeiro – Member of the Editorial Board of Pharmacologia;

Sara Xapelli – Member of the Editorial Board of Neuroimmunology and Neuroinflammation;

Sandra Vaz - Guest Editor of the Special Issue on “Glial plasticity in depression” of the Journal Frontiers in Cellular Neuroscience.

Reviewer Activity:

Unit Members acted as project reviewers for the Medical Research Council;

Unit Members acted as reviewers of the following Journals:

Journal of Neurochemistry; Neurochemical Research; Acta Physiologica; International Neurochemistry; The European Journal of Pharmacology; Neuroscience; Neuroimmunology and Neuroinflamation; Current Alzheimer research; Neuroscience letters; BMC-Neuroscience; Brain research; Frontiers in Pharmacology; Frontiers in Neuroscience.

Prizes, Honours and Awards

Best Poster Communication on the Neurodegeneration and regeneration section of the 2nd Meeting of Mind-Brain College of the University of Lisbon, 2016.

Advanced Teaching

1) **Directive Roles**

AM Sebastião – Director of the Doctoral Mind-Brain College, University of Lisbon.

AM Sebastião – Director of the Integrated Neurociences PhD Programme (Supported by FCT).

AM Sebastião - Member of the Scientific Board of the MSc/PhD in Neurosciences, Faculdade de Medicina da Universidade de Lisboa.

AM Sebastião - Member of the Scientific Board MSc/PhD Programme in Cognitive Sciences, Universidade de Lisboa.

AM Sebastião – Member of the Coordination Board of the Master in Biomedical Engineering, IST/FMUL.

Ribeiro JA - Coordinator of the Module on Neuroethics, Ms/PhD in Neurosciences.

Sebastião AM – Coordinator of the following modules of the MSc/PhD in Neurosciences: 'Cellular and Molecular Neurosciences', 'Neuronal Networks', 'Neuronal Degeneration and Regeneration'.

2) **'Neuroscience Seminars'** run once per week on Mondays, constituting a forum for discussion of scientific achievements, projects to start or running, as well as to invite members from other institutions to share their ideas on different topics. These seminars are open to the IMM community, but are particularly designed for training of Master and PhD students at the Unit. The seminars are also open to Medical students as well as to members of the Mind-Brain College of the University of Lisbon. The following list includes the seminars given by Unit members or, whenever indicated, by those invited from outside IMM. Seminars given by members of other Units at IMM (3 from Luisa Lopes Unit, 2 from Miguel Remondes Unit, 1 from Vanessa Morais Unit, 1 from José Ferro Unit, and 1 from Bruno Silva Santos Unit) are not listed to avoid repetition with other Unit reports. Seminar scheduling and organization is in charge of Sandra Vaz, a post-doc at the Unit:

January

04/01 – Cátia Domingos (Master student) "Probing the synaptic target of a new putative antiepileptic drug: modulation of the excitatory transmission in the hippocampus."

11/01 – Hugo Ferreira (Instituto de Biofísica e Engenharia Biomédica, Faculdade de Ciências da Universidade de Lisboa) "Classification of neuropsychiatric disorders based on brain connectivity patterns."

18/01 – Filipe Nascimento (Neural Control of Movement Lab, School of Psychology and Neuroscience, University of St Andrews, St Andrews, Fife, United Kingdom) "Neuromodulation of Neural Networks Controlling Mammalian Locomotion."

25/01 – Margarida Martins (Master student) "Neuroprotective action of a Kyotorphin derivative in an animal model of Alzheimer's disease."

February

22/02 – Ana Luísa Raposo (Faculdade de Psicologia da Universidade de Lisboa) "Dynamics of memory."

29/02 – Nuno Rosa (Master student) "The NLRP3 Inflammasome as a potential therapeutic target for the treatment of epilepsy"

March

07/03 – Cláudia Afonso (Master student) "New potential therapy for multiple sclerosis: a role for adenosine A2A receptors."

14/03 – Ana Fred (Instituto de Telecomunicações, Instituto Superior Técnico) BioPrint: Biosignals as Health, Emotion, and Identity Markers

21/03 – João Jesus (Master student) "Role of SNARE-dependent gliotransmitter release by astrocytes in the modulation of synaptic plasticity by BDNF."

April

04/04 – Cláudio M. Gomes (Faculdade de Ciências da Universidade de Lisboa) "When proteins misfold in the brain: the molecular and chemical biology of neurodegeneration."

11/04 – Helder Coelho (Faculdade de Ciências da Universidade de Lisboa) "Social Simulation with Agent-Based Modelling."

18/04 – Maria João Freitas (Faculdade de Letras da Universidade de Lisboa and Centro de Linguística da Universidade de Lisboa) and Cristiane Lazzarotto-Volcão (Universidade Federal de Santa Catarina) "How do we use production data to assess phonological development?"

May

16/05 – Afonso André (Master student) "Chronic Cannabinoid Exposure May Produce a Depression Pattern in Adolescent Mice."

23/05 – Catarina Lourenço (PhD student) “From the characterization of adenosinergic system to a future therapeutic strategy in Rett Syndrome.”

30/05 – Mariana Rocha (Welcome Trust Centre for Mitochondrial Research, Newcastle University) "A novel assay to quantify mitochondrial dysfunction in human skeletal muscle - implications for the diagnosis and treatment of mitochondrial diseases."

June

27/06 – Carolina Maruta (Laboratório de Estudos de Linguagem, Faculdade de Medicina, Universidade de Lisboa) "Primary Progressive Aphasia: Neuropsychological Analysis and Evolution."

July

11/07 – Amilcar Santos (PhD Student) "Bipolar Disorder."

18/07– Nadia Rivero Segura (Facultad de Química- Universidad Nacional Autónoma de México) "Prolactin as a new model of neuroprotection against excitotoxicity."

25/07 – Francisco Mouro (PhD student) “Adenosine A2Ars: Hand-In-Hand with CB1Rs Mediating Memory Consolidation Deficits.”

October

03/10 – Rita Belo (PhD student) "Kyotorphin as new pharmacological therapeutic strategy for Alzheimer's Disease"

17/10 – Gareth Miles (School of Psychology and Neuroscience, University of St Andrews, St Andrews, Fife, United Kingdom) (gbm4@st-andrews.ac.uk) "Active roles for glial cells of the mammalian spinal cord in health and disease."

24/10 – Sanna Loppi (Neuroinflammation Research Group, University of Eastern Finland, A.I. Virtanen Institute for Molecular Sciences, Department of Neurobiology Kuopio, Finland) “A journey to the land of explorers - Visiting IMM to learn new techniques."

November

14/11 – Rui Costa Lopes (Instituto de Ciências Sociais da Universidade de Lisboa (ICS)) “Meritocracy, implicit associations and socially critical decisions towards low status groups.”

December

05/12 – Armando Cruz (PhD student) “Modulation of synaptic plasticity by endocannabinoids and A1 receptors involvement.”

12/12 – Rui Rodrigues (PhD student (year zero)) "CB1R-CB2R: a cannabinoid two-level interaction controlling subventricular and hippocampal neurogenesis."

19/12 – Catarina Orcinha (Experimental Epilepsy Research Group, Department of Neurosurgery, Medical Center, University of Freiburg) "Seizure-induced motility of differentiated dentate granule cells is prevented by the central Reelin fragment."

3) <u>Seminars at the PhD and Master Courses in Neuroscience.</u> The list below refers to the seminars presented by Unit members or, whenever indicated, by those invited from outside IMM. Again, and as in 1) above, seminars given by members of other IMM Units (1 from Miguel Remondes Unit, 1 from Vanessa Morais Unit, 1 from Diana Prata Unit) are not listed to avoid repetition with other Unit reports:

21/09

09:30 – 10:45 – Receptor quantification assays: binding and Western Blot (Nadia Rei and Rita Belo)

11:00 – 12:45 - Imaging molecules by immunofluorescence – Applications to neuroscience (Cláudia Valente)

14:00 – 16:00 – Evaluation of synaptic activity through electrophysiological recording Techniques (Diogo Rombo)

16:15 – 17:45 – Transport of molecules along the axon: Function of the cytoskeleton (Carlos Plancha - FMUL)

28/09

17:00 – 18:30 - Modulation of AMPA receptor recycling: molecular aspects (Ana Luisa Carvalho, FCTUC, CNC)

12/10

17:30 – 19:00 – Influence of cannabinoids upon memory: synaptic basis and behavioral evidence (Francisco Mouro)

19/10

14:00 - 15:30 – Neuroimaging: an overview (Eduardo Ducla-Soares, FCUL)

15:45 – 17:15 - Optogenetic manipulation of neuronal circuits (João Peça, CNC)

26/10

17:00-18:30 – Neurological basis of social stress (Rui Oliveira, ISPA)

16/11

14:00–15:30 – Neuronal regeneration (Mónica Sousa, UP)

15:45 – 17:15 - The ubiquitin/proteosome system and control of neuronal death (Carlos Duarte, FCTUC, CNC)

23/11

17:00 – 18:30 – Neuroinflammation in epilepsy (Cláudia Valente)

30/11

9:30 – 11:00 – Modulation of neuronal outgrowth in cultured neurons (Ana Filipa Ribeiro)

11:15 – 12:45 – Driving Cell Death Machinery towards Neural Differentiation (Susana Solá, FFUL)

14:00 – 15:30 - Molecular dysfunctions in multiple sclerosis (Adelaide Fernandes, FFUL)

15:45 – 17:15 – Modeling Neurodevelopmental Disorders with Human Induced Pluripotent stem Cells: From Genes to Function (Sofia Duarte, Neuropediatria, Hospital da Estefânia)

17:30 – 19:00 - Peptidergic innervation of the mammalian vascular system (Sérgio Gulbenkian, FG/FMUL)

7/12

17:00 – 19:30 – Genetic dysfunction in motor neuron diseases (Margarida Gama-Carvalho, FCUL)

4) <u>Lectures at the Master and PhD courses of Neurosciences and at the Master and PhD Courses of Cognitive Sciences.</u>

The list below refers to the lectures presented by Unit members or, whenever indicated, by those invited from outside IMM. Again, and as in 1) and 2) above, lectures given by members of other IMM Units (1 from Luisa Lopes Unit) are not listed to avoid repetition with other Unit reports.

20/9 – Basic principles of neuronal excitability: membrane potential, action potential, synaptic potential, integration of the nervous impulse. Ion channels (Ana M Sebastião).

22/9 – Inhibitory and excitatory synaptic transmission. Glutamate and GABA. Ionotropic receptors, metabotropic receptors, G proteins and transducing pathways (Ana Sebastião).

27/9 – Synaptic plasticity (Raquel Dias).

29/9 – Acetylcholine, noradrenaline and dopamine. Concept of neuromodulation and main neuromodulators. Concept of co-transmission (Ana M Sebastião).

4/10 – Phasic and tonic GABAergic transmission phasic modulation (Diogo Rombo).

6/10 – Glial cells and their ability to control synaptic activity (Sandra Vaz).

11/10 – Cellular and molecular mechanisms of drug dependence (J Alexandre Ribeiro).

13/10 - Conceitos informadores das Neurociências numa perspectiva integrada (Alexandre Castro Caldas, Instituto Ciências Saúde, UCP).

18/10 – Major neurotransmitter pathways and their role in brain function (Ana Sebastião).

25/10 – Nociceptive pathways and Mechanisms involved in the genesis of pain (Fani Neto, FMUP).

27/10 and 3/11 - Sensory organs and sensory circuits (Carlos Neves, FMUL).

8/11 - Brain Rhythms: networks, cognitive functions and multimodal functional imaging (Fernando Lopes da Silva, Univ. Amsterdam/FMUL/IST).

10/11 - Models and main circuits affected in neurodegenerative diseases (Alexandre Ribeiro).

15/11 – Neurotrophic factors: key molecules for neuronal survival and plasticity (Maria José Diógenes).

17/11 – Apoptosis and neuronal death (Cecília Rodrigues, iMed.ULisboa, FFULisboa).

22/11 – Neuroinflamation and Microglia: functions and dysfunction in neurodegenerative diseases (Dora Brites).

24/11 – Postnatal Neurogenesis and oligodendrogenesis – role and disease implications (Sara Xapelli).

06/12 – Genetic approaches to fight neurodegenerative diseases (Luis Pereira de Almeida, FF, UC).

5) Pre- and post - graduation internships. The following students spend short periods at the Unit for lab rotations or short internships:

International Internships Post-Graduate

Sanna Loppi, University of Eastern Finland, Finland (2 months); supervisor: Cláudia Valente.

International Internships Pre-Graduate

Asimina Nasika, University of Thessaly, Faculty of Medicine, Greece (1 month); supervisor: Cláudia Valente.

Ana Margarida Silva, Universitat Autònoma de Barcelona, Faculty of Medicine, Spain (1 month); supervisor: Cláudia Valente.

Karina Lucatto Marra, Universidade de São Paulo (USP), Brasil (5 months); supervisor: Sandra Vaz.

National Internships

Ana Pardal from Instituto Superior Técnico, 3 months; supervisor: Sandra Vaz.

Science and Society

Most unit members actively participated in Science and Society activities on the grounds of the Brain Awareness week, March 12th-19th, 2016.

Main activities were:

1) 'Neuroscientists go to School', where unit members were to schools to talk with the students on:

- How the brain works
- Brain development
- Drugs and the brain
- Neurodegenerative diseases
- How to study the brain

These activities involved 11 Unit members that visited the following schools:

SCHOOL	NUMBER OF STUDENTS ATTENDING
Escola Secundária Virgílio Ferreira	125
Escola Secundária de Azambuja	100
Colégio Pedro Arrupe	125
Escola Profissional Gustave Eiffel/Inst. Sup. Educação e Ciências	80
Escola Profissional Alda Brandão de Vasconcelos	90
Escola Secundária Manuel Cargaleiro	100
Escola Alemã de Lisboa	100
TOTAL	720

Other events:

1) Ana M Sebastião – invited by Ciência Viva to participate on 2 sessions 'Meet the Scientist - Escola Ciência Viva' to speak on the brain to primary school children of the 2nd year (March 18th) and of the 4th year (December 2nd).

2) Round tables for Seniors

Rita Aroeira – Organization of two Round Tables, one dedicated to 'Parkinson's Disease' (April, 15th) and the other dedicated to Alzheimer's disease (November, 29th). These round tables are

open to the community in general, but in particular to senior citizens, patients and care-givers, who put questions answered by a panel of specialists. The Round Table 'Parkinson's Disease' had also the participation of two group leaders of other IMM Units (Joaquim Ferreira and Luisa Lopes). The Round table on 'Alzheimer's Disease had the participation of Alexandre the Mendonça (José Ferro Unit) and Maria José Diógenes.

3) Participation in the European Night of Scientists

iMM Unit members, together with other colleagues of the Mind-Brain College, actively participated in this event, with a booth on the Brain.

1) 4th National Congress on Science Communication – SciCom PT 2016

Rita Aroeira presented a poster summarizing the activities on science and society, including those with seniors.

PhD Thesis Completed

Simões do Couto, F. (2016) Is depression a risk factror for dementia? A translational research 21 de Julho de 2016. Supervisor: J.A. Ribeiro; co-orientador: ML Figueira. Faculdade de Medicina da Universidade de Lisboa, Lisboa. Portugal.

MSc Thesis Completed

Margarida Martins 26/02/2016 Neuroprotective action of a Kyotorphin derivative in an animalmodel of Alzheimer's disease University of Lisbon Ana M Sebastião Miguel Castanho.

Diogo Guimarães 04/03/2016 The role of brain-derived neurotrophic factor (BDNF) on epilepsy University of Lisbon Maria José Diógenes.

Sara Tanqueiro 18/02/2016 Deciphering the mechanisms underlying the loss of BDNF neuroprotection in Alzheimer's disease University of Lisbon Maria José Diógenes Rita Ramalho.

João Gomes 18/02/2016 Study the function of the newly discovered TrkB receptor fragment (TrkB-ICD) formed by calpain cleavage University of Lisbon Maria José Diógenes André Jerónimo dos Santos.

Cátia Domingos 24/06/2016 Probing the synaptic target of a new putative antiepileptic drug University of Lisbon Ana M Sebastião Diogo Rombo and Pedro Lima.

Silva-Santos, Bruno

Major Interests / Objectives

We study the biology of T lymphocytes and their key roles in immunity to infection and cancer. Our projects focus on the development of these cells in the vertebrate thymus, and on their functions upon export to the periphery. We investigate differentiation and activation signals for T cells in the mouse system, providing crucial in vivo models for infectious (such as malaria) and autoimmune diseases (such as multiple sclerosis). We also study human peripheral blood T cells and their recognition and elimination of leukemias and lymphomas. Overall, we envisage the identification of molecular mechanisms involved in the differentiation, activation and function of T cells, aiming towards the design of new treatments for cancer, on the one hand, and (auto) immune disorders, on the other.

Head of Laboratory

Bruno Silva Santos, PhD, Associate Professor.

Research Team

Ana Maria de Amarante Pamplona Dias dos Santos	PhD	Post-Doctoral Investigator
André Gonçalo do Espírito Santo Simões	PhD	Post-Doctoral Investigator (Started February)
Anita Raquel Quintal Gomes	PhD	Investigator, Escola Superior de Tecnologia da Saúde de Lisboa, Assistant Professor
Beatriz Santos de Almeida	Undergraduate	Trainee
Biagio Di Lorenzo	Master	PhD Student
Cláudia Filipa Balseiro Reforço	Graduate	MSc Student
Daniel Vargas Correia	PhD	Post-Doctoral Investigator
Diogo Maia e Silva	Undergraduate	Trainee
Francisco Landeck Moreira Franco Caiado	PhD	Post-Doctoral Investigator
Gisela Silva Gordino	Graduate	MSc Student
Haakan Rolf Norell	PhD	Investigator
Hiroshi Kubo	PhD	Post-Doctoral Investigator
Julie Cecile Caroline Ribot	PhD	Principal Investigator
Karine Serre	PhD	Post-Doctoral Investigator
Maria Helena Cristiano Brigas	Master	PhD Student
Miguel Alexandre Ferreira PInto	Graduate	MSc Student (Started September)
Miguel Alves Rovisco Ribeiro	Master	Trainee
Miguel Muñoz Ruiz	Master	PhD Student
Natacha Maria Gonçalves Silva Sousa	Master	Lab Manager
Nina Alexandra Schmolka	PhD	Post-Doctoral Investigator
Paula Estefania Vargas Romero	PhD	Post-Doctoral Investigator (Started April)

Pedro Henrique Papotto Rosa	Master	PhD Student
Sérgio Tiago de Freitas Ribeiro	Master	PhD Student
Sofia Mensurado Santos	Master	PhD Student
Tiago Maria de Carvalho da Costa Amado	Master	PhD Student

Laboratory Keywords / Research Areas

T cell development/ differentiation, T cell activation, Tumour immunology, Leukemia clonal evolution, Immunopathogenesis of Severe Malaria, Neuroimmunology.

Major Scientific Achievements

In 2016 we published original papers demonstrating: a) that T cell receptor (TCR) signal strength controls the functional differentiation of pro-inflammatory gd T cells in vivo (Muñoz-Ruiz et al. Nature Immunol 2016); b) that these subsets have distinct transcription factor requirements than their conventional CD4+ T helper counterparts (Barros-Martins et al. J Immunol 2016); c) that Casein Kinase 2 (CK2) is a key determinant of the survival of normal and leukemic gd T cells (Ribeiro et al. Leukemia 2016); and d) that human Vd1+ gd T cells expressing Natural Cytotoxicity Receptors (NKp30 and NKp44) are strikingly capable of preventing leukemia cell dissemination in pre-clinical xenograft models (Almeida et al. Clin Cancer Res 2016). These strengthened our position as one of the leading laboratories world-wide in gd T cell research, which was further testified by our 5 oral communications and 1 invited lecture in the International gd T cell conference (London, UK).

Selected Publications

Schmolka N*, Serre K*, Grosso AR, Rei M, Pennington DJ and Silva-Santos B (2013) Epigenetic and transcriptional signatures of stable versus plastic differentiation of pro-inflammatory gd T cell subsets. Nature Immunology, 14 (10), 1093. (Journal IF: 26.199, Citations: 24).

Coquet J*, Ribot JC*, Babala N, Middendorp S, Xiao Y, Neves JF, Fonseca-Pereira D, Jacobs H, Pennington DJ, Silva-Santos B** and Borst J** (*Co-first Authors; **Co-senior Authors) (2013) Epithelial and dendritic cells in the thymic medulla promote CD4+ Foxp3+ regulatory T cell development via the CD27-CD70 pathway. Journal of Experimental Medicine, 210(4), 715. (Journal IF: 13.216, Citations: 40).

Correia DV, Fogli M, Hudspeth K, da Silva MG, Mavilio D and Silva-Santos B. (2011) Differentiation of human peripheral blood Vdelta1+ T cells expressing the natural cytotoxicity receptor NKp30 for recognition of lymphoid leukemia cells. Blood, 118, 992-1001. (Journal IF: 10.555, Citations: 46).

Lança T, Correia DV, Moita CF, Raquel H, Ferreira C, Ramalho JS, Barata JT, Moita LF, Gomes AQ and Silva-Santos B. (2010) The MHC class Ib protein ULBP1 is a non-redundant determinant of leukemia/ lymphoma susceptibility to gd T-cell cytotoxicity. Blood, 115, 2407-11. (Journal IF: 10.555, Citations: 42).

Ribot JC, deBarros A, Pang DJ, Neves JF, Peperzak V, Girardi M, Borst J, Hayday AC, Pennington DJ and Silva-Santos B. (2009) CD27 is a thymic determinant of the balance between IFN-g- and IL-17-producing gd T cell subsets. Nature Immunology, 10, 427-36. (Journal IF: 26.218, Citations: 229).

Ongoing Research Projects

2014/2016: Preprogrammed versus stochastic clonal evolution of relapsing Acute Myeloid Leukaemia: Impact on disease development and therapeutic responses. Coordinator: Haakan Rolf Norell. Agency: Associação Portuguesa contra. Reference: APCL-SEMAPA 2013-2015. Amount: 40000.00. Amount (total): 40000.00.

2015/2016: Modulation of T cell fitness in the tumor environment. Coordinator: Bruno Silva Santos. Agency: Astrazeneca-Produtos Farmacêuticos. Reference: AstraZeneca. Amount: 6000.00. Amount (total): 0.00.

2015/2020: MicroRNA determinants of the balance between effector and regulatory T cells in vivo. Coordinator: Bruno Silva Santos. Agency: Comissão Europeia. Reference: DevoTed_miR - 646701. Amount: 2000000.00. Amount (total): 0.00.

2015/2020: Projecto de Investigação Exploratória. Coordinator: Karine Serre. Agency: Fundação para a Ciência e a Tecnologia, IP. Coordinator Institution: 0. Reference: Projecto de Investigação Exploratória. Amount: 50000.00. Amount (total): 50000.00.

2015/2020: Projecto de Investigação Exploratória. Coordinator: Julie Cecile Caroline Ribot. Agency: Fundação para a Ciência e a Tecnologia, IP. Coordinator Institution: 0. Reference: Projecto de Investigação Exploratória. Amount: 50000.00. Amount (total): 50000.00.

2016/2017: Transferência adoptiva de linfócitos T Delta 1 para imunoterapia do cancro. Coordinator: Bruno Silva Santos. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/DTP-PIC/4931/2014. Amount: 166389.00. Amount (total): 0.00.

2016/2019: Caracterização dos mecanismos de regulação pós-transcriionais, mediados por microRNAs, da diferenciação de linfócitos T gd. Coordinator: Anita Raquel Quintal Gomes. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/BEX-BCM/3592/2014. Amount: 172334.00. Amount (total): 0.00.

Other Projects

2016/2018: Papel de microRNAs na modulação da diferenção funcional de linfócitos T gamma-delta anti-tumorais. Coordinator: Julie Ribot. Agency: Infarmed. Reference: FIS-FIS-2015-01_ONC_20150630-162. Amount: 90000.00. Amount (total): 90000.00.

2016/2018: Participation in project TWINNING (H2020) "Unleash iMM's research excellence in immunity and infection through twinning to infect Lisbon and Portugal with its increase in competitiveness and innovation" – TwinToInfect, financed by the European Commission. Coordinator: Maria M. Mota.

2016/2019: Participation in PRECISE Project – Programa de Atividades Conjuntas – Project number 016394 Precise (Promoção do avanço significativo do conhecimento na área de medicina de precisão e sua translação para benefício da sociedade), financed by the Comissão Diretiva do Programa Operacional Regional de Lisboa and by Fundação para a Ciência e a Tecnologia, I.P. Coordinator: Maria Carmo-Fonseca.

Publications in Peer Review Journals

Muñoz-Ruiz M, Ribot JC, Grosso AR, Gonçalves-Sousa N, Pamplona A, Pennington DJ, Regueiro JR, Fernandez-Malavé E and Silva-Santos B (2016). TCR signal strength controls thymic differentiation of discrete proinflammatory gd T cell subsets. Nature Immunol 17(6):721-7. (Journal IF: 19.381, Citations: 2).

Ribeiro ST, Tesio M, Ribot JC, MacIntyre E, Barata JT and Silva-Santos B (2016). Casein kinase 2 controls the survival of normal thymic and leukemic gd T cells via promotion of AKT signaling. Leukemia Dec 16, doi: 10.1038/leu.2016.363. (Journal IF: 12.104).

Almeida AA, Correia DV, da Silva CL, da Silva MG, Anjos DR and Silva-Santos B (2016). Delta One T cells for immunotherapy of chronic lymphocytic leukemia: clinical-grade expansion/ differentiation and preclinical proof-of-concept. Clin Cancer Res: Epub 15 Jun 2016. (Journal IF: 8.738).

Henriques A, Silva C, Santiago M, Henriques MJ, Martinho A, Trindade H, da Silva JA, Silva-Santos B, Paiva A (2016). Subset-specific alterations in frequencies and functional signatures of gd T cells in systemic sclerosis patients. Inflamm Res 65(12):985-994. (Journal IF: 2.557).

Barros-Martins J, Schmolka N, Fontinha D, Simas JP, Brok I, Ferreira C, Veldhoen M, Silva-Santos B and Serre K (2016). Effector gd T cell differentiation relies on master but not auxiliary Th cell transcription factors. J Immunol 196(9):3642-52. (Journal IF: 4.985, Citations: 1).

Caiado F, Silva-Santos B and Norell H (2016). Intra-tumour heterogeneity – going beyond genetics. FEBS J, Epub 4 Mar 2016. doi: 10.1111/febs.13705. (Journal IF: 4.237, Citations: 3).

Other Publications International

Ribot JC, Serre K, Silva-Santos B. Developmental and Functional Assays to Study Murine and Human gd T Cells. In “T-Cell Differentiation: Methods and Protocols”, Methods in Molecualr Biology, vol. 1514. Springer, New York, 2016.

Invited Lectures and Seminars

B. Silva-Santos. Gamma-delta T cells in Tumor Immunology. Institut fur Immunologie und Virologie, Wurzburg (Germany), 11 January 2016.

B. Silva-Santos. Estudo e manipulação de linfócitos T para imunoterapia do cancro. Prémio Professor Pulido Valente Ensino 2016. Faculdade de Medicina, Universidade de Lisboa, 5 May 2016.

B. Silva-Santos. Gamma-delta T cells and leukemia. The Netherlands Cancer Institute, Amsterdam (The Netherlands), 20 May 2016.

B. Silva-Santos. Development and functions of pro-inflammatory gamma-delta T cell subsets. Université de Toulouse (France), 10 October 2016.

B. Silva-Santos. Gamma-delta T cells and leukaemia. Cancer Research UK – Manchester Research Institute (United Kingdom), 10 November 2016.

B. Silva-Santos. Development of pro-inflammatory gamma-delta T cell subsets. CS&D Masterclass, University Medical Center Utrecht (The Netherlands), 9 December 2016.

H. Norell. Dissecting the dynamics of single-tumor-cell-lineages that underpin recurrence of AML. Center for Hematology and Regenerative Medicine/ Department of Medicine Huddinge, Karolinska Institutet (Sweden), 7 November 2016.

Julie Ribot. Analysing T cell subsets within the Central Nervous System in health and disease. Life and Health Sciences Research Institute (Braga, Portugal). 4 April 2016.

Julie Ribot. Future trends in basic research – Preceptorship in Cancer Immunology. Faculdade de Medicina, Universidade de Lisboa (Lisbon, Portugal). 5 May 2016.

Communications in International Conferences

B. Silva-Santos, Julie C. Ribot, Rita Neres, Vanessa Luís, Maria M. Mota and Ana Pamplona. Gamma-delta T cells dictate Plasmodium pathogenicity in experimental cerebral malaria. 7th International Gamma-delta T Cell Conference, London (UK), 16-19 June 2016. (Oral Presentation)

B. Silva-Santos. Gamma-delta T Cells in Cancer. 7th International Gamma-delta T Cell Conference, London (UK), 16-19 June 2016. (Invited Speaker)

Bruno Silva-Santos (presenting author), Julie Ribot, Rita Neres, Liliana Mâncio-Silva, Vanessa Zuzarte-Luís, Anita Q. Gomes, Maria M. Mota and Ana Pamplona. Immunomodulation of Plasmodium pathogenicity by hepatic gamma-delta T cells in experimental cerebral malaria. 16th International Congress of Immunology, Melbourne (Australia), 21-26 August 2016. (Oral Presentation)

Daniel V. Correia, Afonso Almeida, Maria G. Silva, Diogo Anjos and Bruno Silva-Santos. Vdelta1 T cells expressing natural cytotoxicity receptors for adoptive cell therapy of leukemia. 16th

International Congress of Immunology, Melbourne (Australia), 21-26 August 2016. (Oral Presentation)

B. Silva-Santos. European Organisation for Research and Treatment of Cancer – Melanoma Group Meeting. Lisboa, 27 October 2016. (Invited Speaker)

Ribeiro M., Coelho J., Temido-Ferreira M., Ferreira D., Lopes L.V, Silva-Santos B and Ribot J.C. gd T cells are the major source of IL-17 in the meninges and control brain cognitive functions. Gamma-Delta Conference. London, UK. 16-19 June 2016. (Oral Presentation)

Pedro H. Papotto, Natacha Gonçalves-Sousa, Nina Schmolka, Sofia Mensurado, Julie C. Ribot, Bruno Silva-Santos. Peripheral induction of IL-17-producing Vd4+ gd T cells in experimental autoimmune encephalomyelitis. 7th International Gamma-Delta T Cell Conference, 16th - 19th June 2016. (Oral & Poster Presentation)

Pedro H. Papotto, Natacha Gonçalves-Sousa, Nina Schmolka, Sofia Mensurado, Julie C. Ribot, Bruno Silva-Santos. Peripheral induction of IL-17-producing Vd4+ gd T cells in experimental autoimmune encephalomyelitis. 2nd EMBO meeting on Innate Lymphoid Cells, Berlin (Germany), 30th November - 2nd December 2016. (Poster Presentation)

Ribot, J.*, Neres R.*, Mancio-Silva L., Gomes A.Q., Luís V., Mota M., Silva-Santos B. and Ana Pamplona Hepatic gd T cells dictate Plasmodium Pathogenicity in Experimental Cerebral Malaria Gamma Delta Conference 2016, 16 – 19th June, King's College London, England, United Kingdom. * Equal contribution. (Poster Presentation)

Kubo H., Serre K., Gonçalves-Sousa N., Mensurado S and Silva-Santos B. A monocyte-NK cell partnership established by the primary tumour strongly inhibits melanoma metastization to the lung. EORTC MELANOMA GROUP MEETING, Lisboa, 27 - 28 Oct 2016. (Oral Presentation)

Ribeiro, S.T.; Tesio, M.; Ribot, JC; Macintyre, E.; Barata, JT; Silva-Santos, B.; Casein Kinase 2 controls the survival of normal thymic and leukemic gd T-cells via modulation of AKT signalling. Gamma Delta T-Cell Conference, London (UK), 2016. (Poster Presentation)

Ribeiro, S.T.; Tesio, M.; Ribot, JC; Macintyre, E.; Barata, JT; Silva-Santos, B.; Casein Kinase 2 controls the survival of normal thymic and leukemic gd T-cells via modulation of AKT signalling. XLII Annual Meeting of the Portuguese Society for Immunology, Oeiras, 2016. (Oral Presentation)

Sofia Mensurado, Margarida Rei, Telma Lança, Natacha Gonçalves-Sousa, Hiroshi Kubio, Karine Serre and Bruno Silva-Santos. In vivo inhibition of tumour-associated IL-17-producing gd T cells by neutrophils. 7th International Gamma-Delta T-Cell Conference, London (UK), June 16-19th, 2016. (Oral & Poster Presentation)

S. Mensurado, M. Rei, T. Lança, N. Gonçalves-Sousa, K. Serre* and B. Silva-Santos*. Tumour-associated neutrophils inhibit pro-tumour IL17-producing gd T cells. Keystone symposia: Myeloid Cells (D3), 2016, April 10-14, Killarney, Co. Kerry IRELAND. (Poster Presentation)

Correia D.V., Almeida A., Gomes da Silva M., Anjos D., and Silva-Santos B. Vd1+ T cells expressing natural cytotoxicity receptors for immunotherapy of leukemia: clinical-grade expansion/ differentiation and preclinical proof-of-concept. 7th International Gamma-Delta T-Cell Conference, London (England), 16 - 19 June 2016. (Oral & Poster Presentation)

Schmolka, N., Amado T., Gomes A.Q. and Silva-Santos B. MicroRNA-146a controls the functional plasticity of gamma delta T cells. Mycrosymposium on Small RNA Biology, IMBA, Vienna, 2-4 May, 2016.

Schmolka N., Amado T., Papotto P., Gomes A.Q., and Silva-Santos B. MicroRNA-146a controls IFN-g production and functional plasticity of murine gd T cells. 7th International Gamma-Delta T Cell Conference, 16th - 19th June 2016. (Poster Presentation)

Communications in National Conferences

B. Silva-Santos. Gamma-delta T lymphocytes in the tumour environment: from oncoimmunology to aoptive immunotherapy. 2nd International Congress of ASPIC - Associação Portuguesa de Investigação sobre o Cancro, Porto, 28 April 2016. (Invited Speaker)

B. Silva-Santos. New perspectives in immunotherapy of haematological neoplasms. Reunião Anual da Sociedade Portuguesa de Hematologia, Espinho, 18 November 2016. (Invited Speaker)

Schmolka N., Amado T., Papotto P., Gomes A.Q., and Silva-Santos B. MicroRNA-146a controls IFN-g production and functional plasticity of murine gd T cells. SPI2016 - Annual Meeting of the Portuguese Society for Immunology, 1st May - 3rd June 2016. (Oral Presentation)

Gordino G., Schmolka N., Amado T., Gonçalves-Sousa N., Gomes A.Q., Silva-Santos B., and Ribot J.C. Targeting microRNAs for modulation of the anti-tumor human gd T cell differentiation. XLII

Annual Meeting of the Sociedade Portuguesa de Imunologia. 01-03 June 2016, IGC Oeiras, Portugal. (Poster Presentation)

Mensurado S., Rei M., Lança T., Gonçalves-Sousa N., Kubo H., Serre K. and Silva-Santos B. In vivo inhibition of tumour-associated IL-17-producing gd T cells by neutrophils. XLII Annual Meeting of Sociedade Portuguesa de Imunologia, Oeiras, 1-3 June 2016. (Poster Presentation)

S. Mensurado, M. Rei, T. Lança, H. Kubo, N. Gonçalves-Sousa, B. Silva-Santos* and K. Serre*. Tumour-associated neutrophils inhibit pro-tumour IL17-producing gamma-delta T cells. 2nd ASPIC international congress, April 28-29th, 2016, IPO-Porto, PORTUGAL. (Oral Presentation)

Di Lorenzo B., Correia DV, da Silva CL, Silva-Santos B. Vd1+ T cell expansion strategy for the identification of the molecular determinants of AML tumor cell recognition through the TCRgd. MIT Portugal: 10 years engineering a better future, Braga (Portugal), 30 June 2016. (Poster Presentation)

Pedro H. Papotto, Natacha Gonçalves-Sousa, Nina Schmolka, Sofia Mensurado, Julie C. Ribot, Bruno Silva-Santos. Peripheral induction of IL-17-producing Vd4+ gd T cells in experimental autoimmune encephalomyelitis. XLII Annual Meeting of the Portuguese Society for Immunology, Oeiras, 1st - 3rd June 2016. (Poster Presentation)

Ribeiro M., Coelho J., Temido-Ferreira M., Ferreira D., Lopes L. V, Silva-Santos B and Ribot J.C. Impact of meningeal T cell subsets on physiological aspect of brain functions: Learning/Memory. XLII Annual meeting of the Sociedade Portuguesa de Imunologia. Oeiras, Portugal. 1-3 June 2016. (Oral Presentation)

Organisation of Conferences

Gonçalves-Sousa N. Co-organizer of the XLII Annual Meeting of the Portuguese Society for Immunology, Oeiras, Junho 2016.

Internationalisation

Collaborative work with Drs. Daniel J. Pennington (Blizard Institute, Queen Mary College, London, UK), Adrian Hayday (The Francis Crick Institute, London, UK), Brigitta Stockinger (The Francis Crick Institute, London, UK), Ton Schumacher (The Netherlands Cancer Institute, Amsterdam, The Netherlands), Domenico Mavilio (Istituto Clinico Humanitas, Milan, Italy), Julie

Déchanet-Merville (CIRID, University of Bordeaux, France), José Ramon Regueiro (Universidad Complutense, Madrid, Spain).

Prizes, Honours and Awards

B. Silva-Santos. Prémio Científico Universidade de Lisboa – Saúde.

Sofia Mensurado and Pedro Papotto were awarded individual Travel Grants from Sociedade Portuguesa de Imunologia.

Pedro Papotto was awarded an individual travel grant from TwinnToInfect Project.

7th International Gamma-Delta T Cell Conference travel grant awarded to Julie Ribot, Pedro Papotto, Daniel Correia and Sofia Mensurado.

Julie Ribot was awarded the Prémio Arala Chaves by the Sociedade Portuguesa de Imunologia (Best Oral Presentation).

Advanced Teaching

B. Silva-Santos lectured on “Immunology and immunotherapy of cancer” in the Oncobiology course of the LisbonBioMed PhD Program, IMM, 13 January 2016.

B. Silva-Santos co-organized and lectured on “Gamma-delta T cell responses to tumors” in the Immunology course of the LisbonBioMed PhD Program, IMM, 1-5 February 2016.

Karine Serre lectured on “Molecular mechanisms of gamma-delta T cell differentiation” in the Immunology course of the LisbonBioMed PhD Program, IMM, 1-5 February 2016.

B. Silva-Santos lectured on “Effector T cell differentiation” in the Immunology course of the Gulbenkian PhD Program, Instituto Gulbenkian de Ciência, 1 April 2016.

B. Silva-Santos lectured on “Gamma-delta T cell responses to tumors” in the Oncoimmunology Master course of Faculdade de Ciências Médicas, Universidade Nova de Lisboa, 7 April 2016.

B. Silva-Santos lectured on “Gamma-delta T cell differentiation and response to tumors” in the Molecular Biology and Genetics Master course of Faculdade de Ciências, Universidade de Lisboa, 22 April 2016.

B. Silva-Santos lectured on “Current approaches in cancer immunotherapy” in the Immunotherapy workshop for Medical Oncologists, Instituto Português de Oncologia, Porto, 27 April 2016.

B. Silva-Santos lectured on “Why so much hope in cancer immunotherapy?” in the Preceptorship in Cancer Immunology. iMM Lisboa, 5 May 2015.

B. Silva-Santos lectured on “T cell differentiation” in the GABBA PhD Program course, Instituto de Biologia Molecular e Celular, Universidade do Porto, 31 May 2016.

B. Silva-Santos lectured on cancer immunotherapy in the Oncology course of the Hospital and Clinical Pharmacy Academy, 15 September 2016.

B. Silva-Santos lectured on Gamma-delta T cells in cancer in the MSc Immunology and Infectious Diseases, University of Toulouse, 10 October 2016.

Science and Society

B. Silva-Santos. Consenso estratégico sobre o valor da Imuno-Oncologia em Portugal. Universidade Católica de Lisboa. Lisboa, 17 May 2016.

B. Silva-Santos. Imunoterapia do cancro. Europacolon 2016. Porto, 9 July 2016.

MSc Thesis Completed

Gisela Gordino 19/10/2016 Targeting microRNAs for modulation of the anti-tumor human gd T cell differentiation Universidade de Lisboa Julie C. Ribot.

Simas, Pedro

Major Interests / Objectives

We utilize murid herpesvirus 4, which causes persistent infection in B lymphocytes in laboratory mice, as a model to study human gammaherpesvirus pathogenesis, namely Kaposi's sarcoma associated herpesvirus (KSHV).

KSHV is the etiologic agent of KS and primary effusion lymphoma. KSHV infection of tumor cells is primarily latent and KSHV drives cells to proliferate. KSHV persists in latently infected tumor cells as an extrachromosomal, multi-copy episome (plasmid). KSHV latency-associated nuclear antigen (kLANA) mediates KSHV episome persistence, thus tumor cell viability. Since there is no tractable animal model for KSHV, the MuHV-4 model provides a unique opportunity to study gammaherpesviruses in vivo.

Head of Laboratory

João Pedro Monteiro e Louro Machado de Simas, PhD

Research Team

Ana Patrícia Páscoa Quendera	Master	Trainee (Left March)
André Filipe Coimbra e Seixas	Graduate	MSc Student
Aura Daniela Gonçalves Franco	Graduate	MSc Student (Started September)
Diana Marisa Pinto Freire Fontinha	PhD	PhD Student (Left March)
Francesca Patricia Regales Martin	Graduate	MSc Student (Left April)
Inês Cordeiro Filipe	Master	Trainee (Started October)
Inês Marques Basto	Graduate	MSc Student
Kateryna Kholod	Graduate	MSc Student (Started September)
Maria João Rua Frias	PhD	Post-Doctoral Investigator (Started February – Left November)
Maria Leonor dos Santos Diniz Orge	PhD	Investigator
Marta Pires de Miranda	PhD	Post-Doctoral Investigator

Laboratory Keywords / Research Areas

Herpes virus, B Lymphocytes, Chronic Infection, Kaposi Sarcoma Herpesvirus (KSHV), B Cell and Lymphomas, MuHV-4 and Animal Model of Infection.

Major Scientific Achievements

We found that despite 60 million years of evolutionary divergence, kLANA and mLANA act reciprocally on TR DNA and kLANA can rescue mLANA deficient virus to enable chimeric virus to establish latent infection in mice. This system will for the first time allow in vivo investigation of kLANA in a well-established small animal model of infection.

We feel this work is of broad interest as it successfully tests the concept of functional substitution of a human pathogen gene into a model pathogen to allow in vivo investigation. Previously, such chimeric viruses were felt to be non-viable due to evolutionary divergence, and have not been attempted. Importantly, these findings have the potential to be applied to other human pathogens which lack small animal models.

Selected Publications

Jérémie Decalf, Cristina Godinho-Silva, Diana Fontinha, Sofia Marques, J. Pedro Simas (2014) Establishment of Murine Gammaherpesvirus Latency in B Cells Is Not a Stochastic Event. PLoS Pathogens 10(7), e1004269 (Journal IF: 8.06, Citations: 0).

Godinho-Silva, C., Marques, S., Fontinho, D., Stevenson, P.G., Simas, J.P (2014) Defining Immune Engagement Thresholds for in vivo Control of virus-driven Lymphoproliferation. PLoS Pathogens 10(6):, e1004220 (Journal IF: 8.06, Citations: 1).

Pires de Miranda M, Lopes FB, McVey CE, Bustelo XR, Simas JP. (2013) Role of Src-homology domain binding in signaling complexes assembled by the murid gammaherpesvirus M2 protein. Journal of Biological Chemistry 288, 3858 (Journal IF: 4.773, Citations: 5).

Correia, B., Cerqueira, S.A., Beauchemin, C., Pires de Miranda, M., Li S., Ponnusamy, R., Rodrigues, L., Schneider, T.R., Carrondo, M.A., Kaye, K.M., Simas, J.P., McVey C.E. (2013) Crystal structure of the gamma-2 herpesvirus LANA DNA binding domain identifies charged surface residues which impact viral latency. PLoS Pathogens 9(10), e1003673 (Journal IF: 8.06, Citations: 2).

Lénia Rodrigues, Nikita Popov, Kenneth M. Kaye and J. Pedro Simas (2013) Stabilization of Myc through Heterotypic Poly-Ubiquitination by mLANA is Critical for Herpesvirus Lymphoproliferation. PLoS Pathogens 9(8), e1003554 (Journal IF: 8.02, Citations: 2).

Ongoing Research Projects

2016/2019: Chimera virus model to investigate the pathogenesis of Kaposi´s sarcoma herpesvirus in laboratory mice. Coordinator: João Pedro Monteiro e Louro Machado de Simas. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: PTDC/IMI-MIC/0980/2014. Amount: 199998.00. Amount (total): 199998.00.

Other Projects

2016/2018: Chimera virus model to investigate the pathogenesis of Kaposis sarcoma associated herpesvirus in laboratory mice. Coordinator: Pedro Simas (PTDC/IMI-MIC/0980/2014).

2016/2018: Participation in project TWINNING (H2020) "Unleash iMM's research excellence in immunity and infection through twinning to infect Lisbon and Portugal with its increase in competitiveness and innovation" – TwinToInfect, financed by the European Commission. Coordinator: Maria M. Mota.

Publications in Peer Review Journals

Patrícia Meireles, Joana Sales-Dias, Carolina M. Andrade, João Mello-Vieira, Liliana Mancio-Silva, J. Pedro Simas, Henry M. Staines, Miguel Prudêncio. (2017) GLUT1-mediated glucose uptake plays a crucial role during Plasmodium hepatic infection. Cellular Microbiology. 19(2). doi: 10.1111/cmi.12646.

Cerqueira SA, Tan M, Li S, Juillard F, McVey CE, Kaye KM, Simas JP. (2016). LANA E3 Ubiquitin-Ligase Activity Impacts Gammaherpesvirus-Driven Germinal Center B Cell Proliferation. Journal of Virology 12;90(17):7667-83. doi: 10.1128/JVI.00813-16.

Barros-Martins J, Schmolka N, Fontinha D, Pires de Miranda M, Simas JP, Brok I, Ferreira C, Veldhoen M, Silva-Santos B, Serre K. (2016) Effector T Cell Differentiation Relies on Master but Not Auxiliary Th Cell Transcription Factors. Journal of Immunology 196(9):3642-52. doi: 10.4049/jimmunol.1501921. Epub 2016 Mar 18.

Lawler C, Tan CS, Simas JP, Stevenson PG. (2016). Type I Interferons and NK Cells Restrict Gammaherpesvirus Lymph Node Infection. Journal of Virology. 2016 Sep 29;90(20):9046-57. doi: 10.1128/JVI.01108-16.

Sousa, Ana E.

Major Interests / Objectives

Human Immunodeficiency & Immune Reconstitution Lab research focuses on human T cell homeostasis and immune regulation with the ultimate goal of identifying new strategies for immunological reconstitution and targets for immune-based therapies.

An important part of Human Immunodeficiency & Immune Reconstitution Lab research effort is centered on HIV/AIDS immunopathogenesis, mainly through the study of HIV-2 infection, a naturally attenuated form of HIV disease.

Human Immunodeficiency & Immune Reconstitution Lab prioritizes the "bedside to the bench" approach and, given the transversal nature of Clinical Immunology, brings together physician/clinical researchers, from different medical areas, and basic researchers.

Head of Laboratory

Ana Espada de Sousa, PhD Agregação, Associate Professor, MD.

Research Team

Ana Berta da Fonseca Vieira Álvares e Sousa Ferrand de Almeida	MD/PhD	Investigator, HSM - CHLN, Clinical Specialist, Faculdade Medicina da Universidade de Lisboa, Assistant Professor
Ana Catarina de Castro Chinita	Graduate	Technician (Started February - Left September)
Ana Catarina Taborda Godinho dos Santos	Master	Investigator (Started June)
Ana Cláudia Viseu Varandas	Graduate	MSc Student (Left June)
Ana Isabel Gouveia Costa da Fonseca Lopes	MD/PhD	Investigator, HSM/CHLN, Clinical Specialist, Faculdade Medicina da Universidade de Lisboa, Assistant Professor
Ana Isabel Vieira Antão	Graduate	MSc Student
Ana Luísa Caetano	Graduate	Technician, Faculdade Medicina da Universidade de Lisboa
Ana Rita Varanda Correia Pires	Graduate	Investigator
Andreia de Jesus Amaral Gomes Barbosa Fonseca	PhD	Post-Doctoral Investigator, BioFIG (Left October)
Andreia Sofia Ramalho dos Santos	Graduate	MSc Student
Bárbara Estefânia da Silva Pereira Nogueira Tavares	Master	MSc Student (Started June)
Catarina Sofia Fino Caseiro	Graduate	MSc Student (Left November)
Cheila Cristina Pereira Alves Rocha Garcez de Lencastre	PhD	Trainee (Left July)
Helena Nunes Cabaço	PhD	Post-Doctoral Investigator

Henrique Pedro Pereira da Silva Amaral Machado	Master	Investigator (Started May)
Inês Filipa dos Santos Martins	Master	Consultant
Isabel Cristina e Castro de Menezes Esteves	Master	Investigator, HSM/CHLN, Clinical Specialist, Faculdade Medicina da Universidade de Lisboa, Teaching Assistant
Joana Gomes Cochicho	Undergraduate	MSc Student
João Nuno Marques Vitorino	Undergraduate	Trainee (Started September)
José Gonçalo Duque Pereira Monteiro Marques	Master	Investigator, HSM/CHLN, Clinical Specialist, Faculdade Medicina da Universidade de Lisboa, Teaching Assistant
Maria Catarina Mota da Silva	Master	Investigator, HSM/CHLN, Clinical Specialist
Maria da Conceição Galvão Barata Pinto Pereira dos Santos	PhD	Investigator, Faculdade Medicina da Universidade de Lisboa
Mariana Gaspar Fonseca	PhD	Visiting Researcher (Started March)
Marta Cristina Coimbra Maneira e Sousa	Master	Trainee (Started June)
Marta Duque	Master	Technician (Left February)
Paula Cristina Frade dos Santos Matoso	Master	Investigator (Left January)
Robert Alfred Badura	Master	Investigator
Ruben Daniel Duarte Ferreira	Master	Investigator (Started April)
Rui Manuel Martins Victorino	MD/PhD	Principal Investigator, Faculdade Medicina da Universidade de Lisboa, Full Professor, Clinical Service Director
Russell Bourne Foxall	PhD	Post-Doctoral Investigator
Sara Branco Pereira da Silva	Master	Investigator, HSM/CHLN, MD
Susana Clara Barão Lopes da Silva dos Anjos	MD/PhD	Investigator, HSM/CHLN, Clinical Specialist, Faculdade Medicina da Universidade de Lisboa, Teaching Assistant (started November)
Susana Mendes Fernandes	Master	Investigator, HSM/CHLN, Clinical Specialist, Faculdade Medicina da Universidade de Lisboa, Teaching Assistant
Tiago André da Silva Ferreira	Master	Investigator (Started October)
Yumie Tokunaga	Master	PhD Student (Started March)

Laboratory Keywords / Research Areas

Human T Cell Homeostasis, Immune Regulation, HIV/AIDS Immunopathogenesis, HIV-2 Infection, Primary Immunodeficiencies, Immunological Reconstitution.

Major Scientific Achievements

Cell activation is vital for T-cell differentiation and productive HIV infection. MicroRNAs (miRs) fine-tune cell responses. We published the first miR landscape of human naïve CD4 T cells and its modulation by T-cell receptor stimulation and/or HIV-1/HIV-2 infection. Our results identified

miR-34c-5p as a common link between both processes, impacting on pathways critical for T-cell activation and HIV replication.

FoxP3-expressing regulatory CD4 T-cells (Tregs) are widely recognized as master controllers of immune responses and tissue pathology, yet the factors governing their maintenance remain poorly understood. Naïve Tregs are committed to this lineage in the thymus and continuously replenish the fully-suppressive memory-activated Treg pool throughout life. We revealed that human naïve Tregs feature high steady-state turnover in adults, which fully compensates thymic renewal loss upon total thymectomy. Moreover, IL-7 contributes to naïve Treg homeostasis through PI3K/mTOR pathway.

Selected Publications

Markert ML, Marques JG, Neven B, Devlin BH, McCarthy EA, Chinn IK, Albuquerque AS, Silva SL, Pignata C, de Saint Basile G, Victorino RM, Picard C, Debre M, Mahlaoui N, Fischer A, Sousa AE (2011) First use of thymus transplantation therapy for FOXN1 deficiency (nude/SCID): a report of 2 cases. Blood 117, 688. (Journal IF: 11.847, Citations: 30) web of Science.

Azevedo RI, Soares MV, Barata JT, Tendeiro R, Serra-Caetano A, Victorino RM, Sousa AE (2009) IL-7 sustains CD31 expression in human naive CD4+ T cells and preferentially expands the CD31+ subset in a PI3K-dependent manner. Blood 113, 2999. (Journal IF: 11.847, Citations: 41) web of Science.

Pereira-Santos M.C., Baptista A.P., Melo A., Alves R.R., Soares R.S., Pedro E., Pereira-Barbosa M., Victorino R.M.M., Sousa A.E (2008) Expansion of circulating FoxP3+CD25bright CD4+ T cells during specific venom immunotherapy. Clinical & Experimental Allergy 38, 291. (Journal IF: 5.587, Citations: 37) web of Science.

Sousa, A. E., J. Carneiro, M. Meier-Schellersheim, Z. Grossman, and R. M. Victorino (2002) CD4 T cell depletion is linked directly to immune activation in the pathogenesis of HIV-1 and HIV-2 but only indirectly to the viral load. J Immunol 169, 3400. (Journal IF: 4.985, Citations: 319) web of Science.

Grossman, Z., M. Meier-Schellersheim, A. E. Sousa, R. M. Victorino, and W. E. Paul (2002) CD4+ T-cell depletion in HIV infection: are we closer to understanding the cause? Nature Medicine 8, 319. (Journal IF: 30.357, Citations: 321) web of Science.

Ongoing Research Projects

2013/2016: Plataforma para o Desenvolvimento de Médicos-Cientistas. Coordinator: Ana Espada de Sousa. Agency: Fundação Calouste Gulbenkian. Reference: Plataforma Desenv Medicos-Cientistas. Amount: 100000.00. Amount (total): 100000.00.

2013/2016: RESERVATÓRIOS E REPLICAÇÃO VIRAL NAS CÉLULAS T CD4 DE MEMÓRIA-CENTRAL E FOLICULARES NA INFECÇÃO HIV-2. Coordinator: Ana Espada de Sousa. Agency: Gilead Sciences, Lda. Reference: Gilead. Amount: 14500.00. Amount (total): 14500.00.

2015/2017: HIV-2 Infection: Clinical and Biological Repository. Coordinator: Ana Espada de Sousa. Agency: Gilead Sciences, Lda. Reference: Programa Gilead Génese - Ana Sousa. Amount: 20000.00. Amount (total): 20000.00.

2015/2017: Targeting Germinal Centre Dysregulation in Allergy. Coordinator: Luis Graca. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: HMSP-ICT/0034/2013. Amount: 180672.00. Amount (total): 300000.00.

2015/2019: European Network linking informatics and genomics of helper T cells. Coordinator: Ana Espada de Sousa. Agency: Comissão Europeia. Reference: ENLIGHT-TEN. Amount: 433512.72. Amount (total): 3354685.20.

2015/2017: HIV-2 impact on Lymph Nodes. Coordinator: Susana Mendes Fernandes. Agency: Gilead Sciences, Lda. Reference: Programa Gilead Génese - Susana Fernandes. Amount: 20000.00. Amount (total): 20000.00.

2016/2017: Directors' Exploratory Projects (DEP) 2016. Coordinator: Ana Espada de Sousa. Agency: Fundação para a Ciência e a Tecnologia, IP. Reference: DEP 2016 AESousa. Amount: 50000.00. Amount (total): 0.00.

2016/2017: Preservação da produção de linfócitos T no timo humano mediada por fatores de restrição do hospedeiro durante a infeção por HIV. Coordinator: Helena Nunes Cabaço. Agency: Gilead Sciences, Lda. Reference: Programa Gilead Génese - Helena Cabaço. Amount: 30000.00. Amount (total): 30000.00.

Other Projects

2016/2019: Participation in PRECISE Project – Programa de Atividades Conjuntas – Project number 016394 Precise (Promoção do avanço significativo do conhecimento na área de medicina de precisão e sua translação para benefício da sociedade), financed by the Comissão Diretiva do Programa Operacional Regional de Lisboa and by Fundação para a Ciência e a Tecnologia, I.P. Coordinator: Maria Carmo-Fonseca.

2016/2018: Participation in project TWINNING (H2020) "Unleash iMM's research excellence in immunity and infection through twinning to infect Lisbon and Portugal with its increase in competitiveness and innovation" – TwinToInfect, financed by the European Commission. Coordinator: Maria M. Mota.

Publications in Peer Review Journals

Amaral AJ, Andrade J, Foxall RB, Matoso P, Matos AM, Soares RS, Rocha C, Ramos CG, Tendeiro R, Serra-Caetano A, Guerra-Assunção JA, Santa-Marta M, Gonçalves J, Gama-Carvalho M, Sousa AE. (2017) miRNA profiling of human naive CD4 T cells links miR-34c-5p to cell activation and HIV replication. The EMBO Journal 36, 346-360 Published online 19.12.2016. DOI: 10.15252/embj.201694335.

Silva SL, Albuquerque AS, Serra-Caetano A, Foxall RB, Pires AR, Matoso P, Fernandes SM, Ferreira J, Cheynier R, Victorino RM, Caramalho I, Barata JT, Sousa AE. (2016) Human naïve regulatory T-cells feature high steady-state turnover and are maintained by IL-7. Oncotarget. 15;7(11):12163-75. DOI: 10.18632/oncotarget.7512.

Foxall RB, Fernandes SM, Sousa AE (2016) Profile of interleukin-22 in gut mucosal health and disease. International Journal of Interferon, Cytokine and Mediator Research 8: 1–11. DOI: 10.2147/IJICMR.S64856.

Silva SL, Sousa AE (2016). Establishment and maintenance of the human naïve CD4+ T-cell compartment. Frontiers in Pediatrics. DOI: 0.3389/fped.2016.00119.

Valério de Azevedo S., Maltez C, Lopes A.I (2016). Pediatric Crohn's disease, iron deficiency anemia and intravenous iron treatment: A follow-up study. Scand J Gastroenterol [Epub ahead of print] DOI: 10.1080/00365521.2016.1224381.

Mota C, Ferreira C, Oliveira ME, Meneses J, Victorino RMM (2016). Multisystemic sarcoidosis with early gastrointestinal symptoms. Portuguese Journal of Gastroenterology. DOI: 10.1159/000450899.

Other Publications National

Pereira Santos MC (2016) Hipersensibilidade a fármacos – A contribuição do laboratório: Há novidades? Rev Portuguesa de Imunoalergologia; 24 (2): 93-97.

Marques JG, Cunha F, Bettencourt C, Lavado P (2016) Doença Invasiva por Haemophilus influenzae na Criança: Estudo Multicêntrico Nacional 2010-2014. Grupo de estudo da doença invasiva por Haemophilus influenzae na criança. Acta Pediatr Port 47:21-9.

Torres E, Marques B, Gil J, Virtuoso MJ, Sousa AB, Esteves I, Marques JG (2016) Ectima gangrenoso: um alerta para imunodeficiência. Acta Pediatr Port 47:172-6.

Pereira Santos MC (2016) Asma: Diagnóstico Etiológico in vitro. In Asma. Ana Todo-Bom (ed). Lidel, Lisboa: 79-82.

Cosme J, Lopes A, Spínola Santos A, Campos Melo A, Pereira Santos MC, Pereira Barbosa M. (2016) Anafilaxia perioperatória: a importância da investigação etiológica. In Livro de Casos Clínicos do Centro Hospitalar Lisboa: 33-39.

Invited Lectures and Seminars

Sousa AE. Chronic immune Activation and Inflammation in the pathogenesis of AIDS. Hospital and Clinical Pharmacy Academy, Advanced Course in HIV Therapeutic Management, Lisboa, January 20, 2016.

Silva SL. Imunodeficiências Primárias. Simpósio Kedrion - XXII Jornadas de Pediatria do Hospital Santa Maria, Lisboa, January 21-22, 2016.

Silva SL, Sousa AE. Thymectomy in early infancy: does it matter? Sessão CAML, Lisboa, February 2, 2016.

Silva SL. Autoimunidade como manifestação de Imunodeficiência – a perspetiva do Clínico. VII Reunião de Imunodeficiências Primárias, GPIP, Porto, February 26, 2016.

Marques JG Table "Inflammation and Primary Immunodeficiencies". VII Meeting of Primary Immunodeficiencies. Porto, February 26, 2016.

Fernandes SM Understanding the human immune system through the study of immunodeficiency disorders. AEICMBAS Medical Congress, Porto. March 5, 2016.

Sousa AE and Serra-Caetano A. T-cell evaluation by flow cytometry. EuroFlow PID Meeting. Rome, Italy. March 7-9, 2016.

Sousa AE. Myeloid derived suppression cells. Mye-Euniter Meeting. Stockholm, Sweden, April 11-13, 2016.

Sousa AE. Human Immunodeficiency & Immune Reconstitution. TwinToInfect Meeting, Arrábida, April 14, 2016.

MC Pereira Santos. Hipersensibilidade a fármacos – A contribuição do laboratório: Há novidades? Reunião Primavera da Sociedade Portuguesa de Alergologia e Imunologia Clinica, Sintra, April 2016.

Lopes AI. Infecção por H. pylori em idade pediátrica e úlcera péptica, 1º Curso Hispano-Luso de Formacion Continuada en Gastrenterologia Pediátrica, XX III Curso La Cristalera, Lisboa, April 2016.

Marques JG 1st Technical Meeting of the Regional Commission of Vaccination of the RA of Madeira. BCG in Portugal and Highlights on Convulsive Cough Funchal April 4, 2016.

Marques JG Infectious exanthems. VI Meeting of Updates in Pediatrics. Evora, May 21 and 22, 2016.

Lopes AI. O Papel da Nutrição na Saúde 4º Seminário - A Saúde nos Objectivos do Desenvolvimento Sustentável, Organização: Colégio F3: Food, Farming and Forestry, Universidade de Lisboa, Lisboa, June 2016.

Sousa AE. Myeloid derived suppression cells. Mye-Euniter Meeting. Glasgow, UK, September 6-7, 2016.

Sousa AE. Alterações inflamatórias/metabólicas e aterosclerose acelerada na doença VIH: Patogénese da Inflamação crónica. Infecção & Imunidade (I&I), Porto, October 1, 2016.

Silva SL. Principais IDP em idade pediátrica. Workshop: Imunodeficiências Primárias em Idade Pediátrica; 37ª Reunião Anual da SPAIC, Lisboa, October 7-9, 2016.

Pereira Santos MC Lecturer of Workshop "Alergénios Moleculares aplicados á clinica. Annual meeting of the Sociedade Portuguesa de Alergologia e Imunologia Clínica (SPAIC), Lisboa, Portugal, October 9-11, 2016.

Mota C. Towards the therapeutic use of Regulatory T cells for the treatment of human autoimmune diseases". 14th MedInterna International Meeting, Porto, October 2016.

Sousa AE. Potential common mechanisms in Autoimmune Diseases and Immunodeficiencies: from AID to AIDS. Porto's Autoimmunity Meeting (PAM), Porto, October 20, 2016.

Silva SL. Primary Immunodeficiencies - The Portuguese experience. Porto´s Autoimmune Meeting. Porto, October 20-22, 2016.

Sousa AE. Novas terapias de base imunológica e Ensaios Clínicos. Comissão de Ética para a Investigação Clinica (CEIC), Lisboa, October 24, 2016.

Sousa AE and Serra-Caetano A. Markers of T-cell differentiation and function. EuroFlow PID Meeting. Prague, Czech Republic. November 1, 2016.

Marques JG BCG vaccination Conference 17th National Congress of Pediatrics. Porto, 2-4 November 2016.

Marques JG Haemophilus influenzae Infection in the Child. 17th National Congress of Pediatrics. Porto, 2-4 November 2016.

Sousa AE. Novas Fronteiras em Ensaios Clínicos- Moderador. Simpósio CEIC - Ensaios Clínicos: novos desafios, papel social e centros de ensaio. Lisbon, November 22, 2016.

Lopes AI. Infeção por Hpylori em Idade Pediátrica – O Estado da Arte 2º Curso de Gastrenterologia Pediátrica do Hospital Pediátrico de Coimbra Coimbra, November 2016.

Pereira Santos MC. "Casos Clínicos na doença alérgica: importância da correlação clínico-laboratorial na alergia a fármacos"3º ABC de Imunologia para médicos. Fundação Calouste Gulbenkian, Lisboa, November, 2016.

Marques JG. Antibiotics - when and how. Saturdays of knowledge. Order of Physicians, Lisbon, November 26, 2016.

Comunications in International Conferences

Amaral AJ, Foxall RB, Matoso P, Soares R, Tendeiro R, Pinto F, Sousa AE, Gama-Carvalho M. Small-RNA-seq of HIV infected human T cells reveals the existence of HIV-encoded miRNA-like molecules and the activation of host siRNA machinery. NGS2016 Barcelona, Spain 4-6 April 2016.

Tokunaga Y, Nunes-Cabaço H, Sousa AE. Factors controlling regulatory T cell development in the human thymus and the homeostasis of naive regulatory T cells. 1º ENLIGHT-TEN Summer School "BASIC ASPECT OF THE IMMUNE SYSTEM", Turku, 6-9 June 2016.

Ramos C G, Andrade J, Muniz C, Domingues N, Amaral A, Almeida S, Sousa AE, Gama-Carvalho M. micro RNA-34c-5p modulates HIV-1 reactivation in latently infected T-cells. EMBO|EMBL Symposia: Innate Immunity in Host-Pathogen Interactions, June 26 – 29, Heidelberg, Germany 2016.

Pereira Santos MC, Campos Melo A, Caramalho I, Pedro E, Victorino RMM, Barbosa MA, Sousa AE. Expansion of FOXP3-expressing regulatory T cells in beekeepers during the beekeeping season. XXXV Congress of the European Academy of Allergy and Clinical Immunology, Vienna, Austria, 11-15 June 2016.

Duarte Ferreira R, Pereira da Silva S, Baldaia C, Correia L, Sousa AE, Silva SL. Is there a link between intestinal inflammation and nodular regenerative hyperplasia in CVID? – A cohort immunohistological analysis.17º Biennial Meeting of the European Society for Immunodeficiencies (ESID), Barcelona, 21-24 September 2016.

Silva SL, Albuquerque A, Amaral AJ, Raman I, Lian Y, Quan-Zhen L, Mota C, Victorino RMM, Sousa AE. Autoimmunity in adults submitted to complete thymectomy early in infancy. 17º Biennial Meeting of the European Society for Immunodeficiencies (ESID), Barcelona, 21-24 September 2016.

Serra-Caetano A, Silva SL, Albuquerque A, Marques JG, Cheynier R, Ligeiro D, Pignata C, Louise Markert M, Sousa AE. Long-term persistence of aberrant double-negative?? T-cells in a patient with FOXN1-null phenotype despite successful thymic transplantation. 17º Biennial Meeting of the European Society for Immunodeficiencies (ESID), Barcelona, 21-24 September 2016.

Tokunaga Y, Nunes-Cabaço H, Serra-Caetano A, Godinho-Santos A, Sousa AE. Factors controlling regulatory T cell development in the human thymus and the homeostasis of naive regulatory T cells. 1º ENLIGHT-TEN Annual Network Meeting, Rade, 11-13 October 2016.

Franco C, Vaz S, Azevedo S, Mourato P, Loreto H, Lopes AI. Eosinophilic Esophagitis: Clinical Profile and Trends in Childhood 8th Conference Excellence in Pediatrics, London, 8th-10th December 2016.

Communications in National Conferences

Miranda M, Silva EM, Pinto P, Serra-Caetano A, Silva SL, Sousa AM, Marques JG STAT3 Mutation with gain of function. VII Meeting of Primary Immunodeficiencies. Porto, 26 de February de 2016.

Bettencourt C, Borges V, Gonçalo-Marques J, Cunha F, Bajanca-Lavado Multilocus sequencing typing as a tool to investigate childhood Haemophilus influenzae invasive disease in Portugal. 11th International Meeting on Microbial Epidemiological Markers (IMMEM XI), Estoril, 9-12 March 2016.

Neto S, Gaspar J, Palha A, Mourato P, Lopes AI. Laceração esofágica e mediastinite manifestação rara de Esofagite Eosinofílica em idade pediátrica. I Curso Hispano-luso de Gastrenterologia Pediátrica, Lisboa, April 2016.

Fernandes A, Azevedo S, Lopes AI. Citomegalovirus na Colite Ulcerosa. Inocente ou Culpado? I Curso Hispano-Luso de Gastrenterologia Pediátrica. Lisboa, April 2016.

Miranda M, Teixeira Martins A, Carvalho S, Serra-Caetano A, Albuquerque A, Campos Melo A, Esteves I, Marques JG. BCG (Bacillus Calmette-Guérin) Vaccine in Children with DiGeorge / Chromosome 22q11.2 Deletion Syndrome – Is It Safe? 34th Annual Meeting of the European Society for Paediatric Infectious Diseases (ESPID 2016), Brighton, UK, May 10-14, 2016.

R Machado, S. Pacheco, A Luz, MJ Palaré, AFerrão, AI Lopes, A Morais. Anemia ferropénica refractária e doença auto-imune. Reunião Anual da Sociedade Portuguesa de Hemato-Oncologia Pediátrica, Lisboa, May 2016.

Antão A, Foxall RB, Matoso P, Pires AR, Serra-Caetano A, Sousa AE, Nunes-Cabaço H, Rocha C. HIV-2 infection of lymphoid tissues. XLII Annual Meeting of Sociedade Portuguesa de Imunologia (SPI), Oeiras, 1-3 June 2016.

Ramalho-dos-Santos, L. Martins, I. Caramalho, J. Barata, Sousa AE, Nunes-Cabaço H. A role for IL-4 in CD4 T Cell Plasticity. Annual Meeting of Sociedade Portuguesa de Imunologia (SPI), Oeiras, 1-3 June 2016.

Susana L. Silva, Adriana Albuquerque, Andreia J. Amaral, Indu Raman, Yun Lian, Quan-Zhen Li, Catarina Mota, Rui MM Victorino, Ana E. Sousa. Autoimmunity in adults submitted to complete thymectomy early in infancy. XLII Annual Meeting of Sociedade Portuguesa de Imunologia (SPI), Oeiras, 1-3 June 2016.

Marcelino J., Costa A.C., Pereira Santos MC. Pereira Barbosa MA. Alergénios moleculares aplicados à clínica - Caso clínico. XXXVII Reunião anual da SPAIC, Lisboa, October 2016.

Ornelas C, Caiado J, Campos Melo A, Pereira Santos MC, Pereira Barbosa MA. "Contributo do Teste de Ativação de Basófilos para o Diagnóstico de Reações de Hipersensibilidade a Oxaliplatina". XXXVII Reunião Anual da SPAIC, Lisboa, October 2016.

Ornelas C, Duarte F, Pereira Santos MC. "Alergia alimentar múltipla - como resolver?" 37ª Reunião Anual da SPAIC, Lisboa, October 2016.

Guimarães C, Azurara L, Morais A, Marques JG. Invasive bacterial disease in children with asplenia. 17th National Congress of Pediatrics. Porto, November 2-4, 2016.

Organisation of Conferences

Lopes AI. Co-organizer of the 1º Curso Internacional Hispano-Luso de Formacion Continuada en Gastrenterologia Pediátrica, XX III Curso La Cristalera, Lisboa, 7-9 de April 2016.

Pereira Santos MC Organizer of “Workshop” Alergénios Moleculares aplicados á clinica. Annual meeting of the Sociedade Portuguesa de Alergologia e Imunologia Clínica (SPAIC), Lisboa, Portugal, October 9-11, 2016.

Sousa AE. Member of the Organizer Committee of the Simpósio CEIC - Ensaios Clínicos: novos desafios, papel social e centros de ensaio. Lisbon, November 22, 2016.

Internationalisation

Sousa AE. National Coordinator and Member of the Management Committee of the COST Action BM1404 "European Network of Investigators Triggering Exploratory Research on Myeloid Regulatory Cells (Mye-EUNITER)". 2014/2017. Agency: Comissão Europeia. Reference: COST BM1404. http://www.mye-euniter.eu/

Sousa AE and Serra-Caetano A. Part of the EuroFlow International Consortium on Primary Immunodeficiency. http://euroflow.org/

Sousa AE. Member of ENLIGHT-TEN - European Network Linking Informatics and Genomics of Helper T cells comprising TEN beneficiaries. 2015/2019 – ETN funded by the European Union's Horizon 2020 research and innovation programme under the Marie Skodowska-Curie grant agreement No.: 675395. http://www.enlight-ten.eu/

Amaral AJ. National Coordinator and Member of the Management Committee of the COST Action CA15112 "Functional Annotation of Animal Genomes – European Network (FAANG-Europe)". 2016/2019. Agency: Comissão Europeia. Reference: COST CA15112. http://www.faang-europe.org/

Prizes, Honours and Awards

GAPIC David-Ferreira 2016 – 2º Menção Honrosa. From immune phenotype to clinical manifestations in CVID. Cláudia Varandas.

Industry Contract Research

Multicentric Clinical trial entitled: "A phase 3 Randomized double blinded Study Comparing TR-701 FA and Linezolid in Ventilated Gram-positive Nosocomial Pneumonia". Funded by Cubic. PI at CHLN: Susana M. Fernandes.

Government/Organisation Contract Research

Sousa AE. Member of the National Ethical Committee for Clinical Investigation (CEIC).

Sousa AE. Member of the "Comissão de Avaliação de Tecnologias de Saúde (CATS)". INFARMED — Autoridade Nacional do Medicamento e Produtos de Saúde, I. P. (INFARMED, I. P.).

Sousa AE. Coordinator of the GAPIC - -Department for promotion of scientific research of medical students. Faculdade de Medicina, Universidade de Lisboa.

Sousa AE – Member of the Comissão Científica de Biociências da Santa Casa da Misericórdia de Lisboa.

Victorino RMM and Sousa AE, Members of the Scientific Council, Faculdade de Medicina, Universidade de Lisboa.

Victorino RMM and Sousa AE, Members of the Scientific Board of the PhD Program of the Lisbon Academic Medical Centre.

Victorino RMM, Member of the Directive Board of the Sociedade de Ciências Médicas de Lisboa.

Victorino RMM. Member of the Scientific Council of the Fundação Pulido Valente.

Victorino RMM. Member of the Clinical Research Committee from University Hospital Santa Maria.

Sousa AE. Grant evaluation, Fundação para a Ciência e Tecnologia (FCT).

Silva SL and Marques JG, Members of the Comissão Técnica de Vacinação da Direção-Geral de Saúde.

Marques JG. Member of the Comissão Nacional de Verificação da Eliminação do Sarampo e da Rubéola.

Marques JG. Representative of the Direcção Geral de Saúde (DGS) in the procedure for the acquisition of the intravenous formulation of zanamivir by the hospitals of the health system.

Marques JG. Member of the CHLN Local Coordination Group of the Program for the Prevention and Control of Infections and Resistance to Antimicrobials.

Marques JG. Coordination of the Haemophilus influenzae Invasive Disease Study Group in the Child.

Marques JG Collaboration in the elaboration of the Guidance of the Direção Geral da Saúde nº 004/2016 of 09/23/2016, "Vaccination against influenza. 2016/2017". Co-author of PNV 2017.

Lopes AI. Member of the Pedagogic Council, Faculdade de Medicina, Universidade de Lisboa.

Lopes AI. Member of the Working Group for Clinical Curriculum Review, Faculdade de Medicina de Lisboa, Universidade de Lisboa.

Lopes AI. Member of the Board of the Pediatric Gastrenterology College - Portuguese Medical Association (Ordem dos Médicos).

Lopes AI. Member of the Ethical Committee of Hospital Santa Maria and Lisbon Academic Medical Centre.

Advanced Teaching

Sousa AE, Pereira-Santos MC, Victorino RMM, Silva SL, Fernandes SM, and Serra-Caetano A. Clinical Immunology teaching in the core curriculum for Medical Students, Area: Medicine 2, 5th year. Faculdade de Medicina da Universidade de Lisboa.

Sousa AE, Pereira-Santos MC, Victorino RMM, Silva SL, Fernandes SM, Mota C and Serra-Caetano A. Teaching of the discipline of Clinical Immunology of the 4th and 5th year of the Degree in Medicine – Faculdade de Medicina, Universidade de Lisboa.

MC Pereira Santos: Specialty in Immunoallergology: Supervision of the Clinical Immunology Laboratory training period for the final degree (Ordem dos Médicos/Ministry of Health): Cristina Isabel Figueiredo Ornelas from February to May; and Rúben Daniel Duarte Ferreira from October until December 2016.

Sousa AB and Sousa AE: Collaboration in the teaching of Immunology in the core curriculum for Medical Students, 2nd year. Faculdade de Medicina da Universidade de Lisboa.

Lopes AI. Regency and Teaching of the Discipline of Pediatrics (Module VI II), core curriculum, 5th year of the Degree in Medicine – Faculdade de Medicina, Universidade de Lisboa.

Lopes AI. Regency of the Elective Discipline Clinical Procedures in Pediatrics. 5th year of the Degree in Medicine – Faculdade de Medicina, Universidade de Lisboa.

Lopes AI. Coordination of the Pediatric Module of the Master Program in Clinical Nutrition, Faculdade de Medicina de LIsboa.

Lopes AI. Co-coordination of the Pos-Graduation Program in Pediatric Clinical Nutrition, Instituto de Ciências da Saude, Universidade Católica de Lisboa.

Fernandes SM. Teaching of the Discipline of Intensive Care Medicine of the 4th and 5th year of the Degree in Medicine – Faculdade de Medicina, Universidade de Lisboa.

Marques JG Infections: when thinking about primary immunodeficiencies. 11th Course of Pediatric Infection. Coimbra 28 and 29 January 2016.

Marques JG Central Nervous System Infections. V Course of Antimicrobials of the Pediatric Infectious Society. Evora, April 14 and 15, 2016.

Marques JG Exanthematic infantile diseases of the child. 11th Post-Graduation Course on Infectious Diseases. Miraflores, November 14, 2016.

Science and Society

Silva SL (2016), Medical Advisor for Associação Portuguesa de Doentes com Imunodeficiências Primárias.

PhD Thesis Completed

Susana Lopes da Silva 21/11/2016 Living without thymus: lessons from adults thymectomized in early infancy Faculdade de Medicina da Universidade de Lisboa Ana E. Sousa Professor Manuel P. Barbosa.

MSc Thesis Completed

Ana Isabel Vieira Antão 28/10/2016 In vitro infection of lymphoid tissues by HIV-2 Faculdade de Ciências, Universidade de Lisboa Helena Nunes-Cabaço Nuno Taveira.

Andreia Sofia Ramalho dos Santos 08/11/2016 Role of IL-4 in the lineage plasticity of human CD4 single positive thymocytes Faculdade de Ciências, Universidade de Lisboa Helena Nunes-Cabaço Margarida Telhada.

Ana Cláudia Viseu Varandas 03/06/2016 From immune phenotype to clinical manifestations in CVID Faculdade de Medicina da Universidade de Lisboa Susana Lopes da Silva Ana E. Sousa.

Joana Cochicho 22/07/2016 Allergy in Young Adults Submitted to Thymectomy Early in Infancy Faculdade de Medicina da Universidade de Lisboa Susana Lopes da Silva Ana E. Sousa.

Veiga-Fernandes, Henrique

Major Interests / Objectives

The immune system is a key player in the resolution and prevention of severe pathologies, such as infectious and inflammatory diseases. To accomplish their function throughout life, immune cells interact with each other and with their external environment. Thus, all immune cell processes, ranging from hematopoiesis to immune cell response to pathogens, require the establishment of effective cellular and molecular interactions. However, the mechanisms that underpin immune cell function and communication with their environment remain largely elusive. Our research is centered on novel communication pathways that determine immune cell fate and disease progression in the context of lymphoid organogenesis and lymphoid cell development and function.

Head of Laboratory

José Henrique Veiga Fernandes, PhD.

Research Team

Ana Filipa Ribeiro Cardoso	Master	PhD Student (Started March)
Bethania García Cassani	Master	PhD Student
Bruno Miguel Belchior Raposo	Master	Technician
Chesne Julie Michelle Evelyne	PhD	Post-Doctoral Investigator
Cristina Sofia Godinho da Silva	No degree	Post-Doctoral Investigator
Hélder Manuel Piedade Ribeiro	Master	Technician
Manuela Cristina Fernandes Ferreira	PhD	Post-Doctoral Investigator
Rita Gomes Domingues	Master	PhD Student
Sales Ibiza	PhD	Post-Doctoral Investigator
Silvia Moura Arroz Nobre Madeira	Master	PhD Student
Telmo Filipe Araújo Catarino	Master	PHD Student (Started September)
Valdir Avelino Rocha Semedo	Master	PhD Student (Started November)
Vânia Rita de Faria Cardoso	Master	PhD Student

Laboratory Keywords / Research Areas

Lymphoid organogenesis, Haematopoiesis, Innate Lymphoid Cells, Lymphocyte function.

Major Scientific Achievements

The major achivements in 2016:

Accpeted Paper:

Ibiza, S., García-Cassani, B., Ribeiro, H., Carvalho, T., Almeida, L., Marques, R., Misic, A. M., Bartow-McKenney, C., Larson, D.M., Pavan, W.J., Eberl, G., Grice, E.A., Veiga-Fernandes, H. (2016). Glial cell-derived neuroregulators control type 3 innate lymphoid cells and gut defence. Nature 535:440-3.

Veiga-Fernandes, H and Mucida, D. (2016). Neuro-immune interactions at barrier surfaces. Cell 165:801-11.

Patent:

RET agonist molecules are critical to control type 3 innate lymphoid cell-derived interleukin 22, intestinal inflammation and infection. National patent pending. Authors: Henrique Veiga-Fernandes, Sales Ibiza, Bethania García-Cassani (2016).

Selected Publications

Ibiza S., García-Cassani B., Ribeiro H., Carvalho T., Almeida L., Marques R., Misic A.M., Bartow-McKenney C., Larson D.M., Pavan W.J., Eberl G., Grice E.A. and Veiga-Fernandes H. (2016) Glial-cell-derived neuroregulators control type 3 innate lymphoid cells and gut defence. Nature 535, 440-+. http://www.nature.com/nature/journal/v535/n7612/full/nature18644.html. (Journal IF: 38.138, Citations: 6).

Xu W*, Domingues RG*, Fonseca-Pereira D, Ferreira M, Ribeiro H, Lopez-Lastra S, Motomura Y, Moreira-Santos L, Bihl F, Braud V, Kee B, Brady H, Coles MC, Vosshenrich C, Kubo M, Di Santo JP, Veiga-Fernandes H. (2015) NFIL3 orchestrates the emergence of common helper innate lymphoid cell precursors. Cell Reports 10, 2043-2054. http://www.cell.com/cell-reports/pdf/S2211-1247(15)00234-X.pdf. (Journal IF: 7.87, Citations: 42).

van de Pavert, S. A., Ferreira, M., Domingues R. G., Ribeiro, H., Molenaar, R., Moreira-Santos, L., Almeida, F.F., Ibiza, S., Barbosa, I., Goverse, G., Labao-Almeida, C., Godinho-Silva, C., Konijn, T., Schooneman, D., O'Toole, T., Mizee, M.R., Habani, Y., Haak, E., Santori, F.R., Littman, D.R., Schulte-Merker, S., Dzierzak, E., Simas, J.P., Mebius, R.E. and Veiga-Fernandes, H. (2014) Maternal retinoids control type 3 innate lymphoid cells and set the offspring immunity. Nature

508, 123-127. http://www.nature.com/nature/journal/vaop/ncurrent/abs/nature13158.html. (Journal IF: 38.138, Citations: 98).

Fonseca-Pereira, D., Arroz-Madeira, S., Rodrigues-Campos, M., Barbosa, I., Domingues, R.G., Bento, T., Almeida, A.R.M., Ribeiro, H., Potocnik, A., Enomoto, H. and Veiga-Fernandes, H. (2014) The neurotrophic factor receptor RET drives haematopoietic stem cell survival and function. Nature 514, 98-101. http://www.nature.com/nature/journal/v514/n7520/full/nature13498.html. (Journal IF: 38.138, Citations: 14).

Patel, A., Harker, N., Moreira-Santos, L., Ferreira, M., Alden, K., Timmis, J., Foster, K., Garefalaki, A., Pachnis, P., Andrews, P., Enomoto, H., Milbrandt, J., Pachnis, V., Coles, M., Kioussis, D., Veiga-Fernandes, H. (2012) Differential RET Signaling Pathways Drive Development of the Enteric Lymphoid and Nervous Systems. Science Signaling 5 (235), ra55. http://stke.sciencemag.org/content/5/235/ra55.long. (Journal IF: 7.359, Citations: 21).

Ongoing Research Projects

2013/2016: Controlo da função das células inatas linfoides e da homeostasia intestinal por fatores neurotróficos. Coordinator: José Henrique Veiga Fernandes. Agency: Fundação Ciência e Tecnologia. Reference: FCT-ANR/IMI-IMU/0094/2012. Amount: 250300.00. Amount (total): 562000.00.

2014/2017: Regulation of Innate Lymphoid Cell function and intestinal defense by neuroregulatory factors. Coordinator: José Henrique Veiga Fernandes. Agency: Cronh's & Colitis. Reference: Lymphoid Cell Function - CCFA. Amount: 280258.06. Amount (total): 254277.00.

2015/2016: Control of innate lymphoid cells and intestinal homeostasis by neurotrophic factors. Coordinator: José Henrique Veiga Fernandes. Agency: Kenneth Rainin Foundation. Reference: Kenneth Award. Amount: 90818.27. Amount (total): 90818.27.

2015/2020: Glia-derived factors in innate lymphoid cell sensing and intestinal defence. Coordinator: José Henrique Veiga Fernandes. Agency: Comissão Europeia. Reference: ERC - 647274 - GliaInnateSensing. Amount: 2270000.00. Amount (total): 0.00.

Other Projects

2016/2018: Participation in project TWINNING (H2020) "Unleash iMM's research excellence in immunity and infection through twinning to infect Lisbon and Portugal with its increase in competitiveness and innovation" – TwinToInfect, financed by the European Commission. Coordinator: Maria M. Mota.

Publications in Peer Review Journals

Veiga-Fernandes H. and Pachnis V. (2016) Neuroimmune regulation during intestinal development and homeostasis. Nat Immunol, 18(2):116-122. doi: 10.1038/ni.3634. Review. (Journal IF: 19.381, Citations: 0).

Goverse G, Labao-Almeida C, Ferreira M, Molenaar R, Wahlen S, Konijn T, Koning J, Veiga-Fernandes H, Mebius RE. (2016) Vitamin A Controls the Presence of ROR? Innae Lymphoid Cells and Lymphoid Tissue in the Small Intestine. J Immunol, 15;196(12):5148-55. doi: 10.4049/jimmunol.1501106.

Veiga-Fernandes H, Mucida D. (2016) Neuro-Immune Interactions at Barrier Surfaces. Cell, 5;165(4):801-11. doi: 10.1016/j.cell.2016.04.041. Review. (Journal IF: 28.71, Citations: 5).

Other Publications International

Ettersperger J, Montcuquet N, Malamut G, Guegan N, Lopez-Lastra S, Gayraud S, Reimann C, Vidal E, Cagnard N, Villarese P, Andre-Schmutz I, Gomes Domingues R, Godinho-Silva C, Veiga-Fernandes H, Lhermitte L, Asnafi V, Macintyre E, Cellier C, Beldjord K, Di Santo JP, Cerf-Bensussan N, Meresse B. (2016) Interleukin-15-Dependent T-Cell-like Innate Intraepithelial Lymphocytes Develop in the Intestine and Transform into Lymphomas in Celiac Disease. Immunity, 20;45(3):610-25. doi: 10.1016/j.immuni.2016.07.018. (Journal IF: 24.082, Citations: 2).

Alden K, Timmis J, Andrews P, Veiga-Fernandes H, Coles M. (2016) Extending and Applying Spartan to Perform Temporal Sensitivity Analyses for Predicting Changes in Influential Biological Pathways in Computational Models. IEEE/ACM Trans Comput Biol Bioinform. 2016 Feb 11. [Epub ahead of print] (Journal IF: -, Citations: 0).

Invited Lectures and Seminars

Keystone symposium, US, February, 2016.

CEDOC, Lisbon, Portugal, March, 2016.

ITQB, Oeiras, Portugal, March, 2016.

Instituto Gulbenkian de Ciência, Oeiras, Portugal, June, 2016.

GABBA PhD program, Porto, Portugal, June, 2016.

KRF, USA, July, 2016.

MBO conference on Innate Lymphoid Cells, Berlin, Germany, November, 2016.

BSI NVVI 2016, Liverpool, England, December, 2016.

Communications in International Conferences

Domingues, R.G., Transcriptional Regulation of Innate Lymphoid Cells, EMBO conference on Innate Lymphoid Cells, 30 November – 02 December 2016, Berlin, Germany (Poster).

Cassani, B., EMBO conference on Innate Lymphoid Cells, 30 November – 02 December 2016, Berlin, Germany (Poster).

Cassani, B., Synanet workshop on neuroinflammation, UEF, November 2016, Kuopio, Finland (Poster).

Communications in National Conferences

Domingues, R.G., NFIL3 orchestrates the emergence of common helper innate lymphoid cell precursors, X PhD Students meeting of the Instituto de Medicina Molecular (IMM)/ Lisbon Academic Medical Center (CAML); Lisboa, 30th and 31th of March 2016. (Oral Presentation)

Domingues, R.G., NFIL3 orchestrates the emergence of common helper innate lymphoid cell precursors, XLII Annual Portuguese Society of Immunology (SPI) meeting at IGC, Oeiras, 1st to 3rd June 2016. (Oral Presentation)

Godinho-Silva, C., Control of innate lymphoid cells by circadian clock signals. Immunology club. Instituto de Medicina Molecular, Lisboa, Portugal, 2016. (Oral Presentation)

Cardoso, A.F.R., Regulation of type 2 innate lymphoid cells at barrier sites, X PhD Students meeting of the Instituto de Medicina Molecular (IMM)/ Lisbon Academic Medical Center (CAML); Lisboa, 30th and 31th of March 2016. (Oral Presentation)

Silvia Madeira, S., Role of Retinoic Acid in Lymphocyte development, X PhD Students meeting of the Instituto de Medicina Molecular (IMM)/ Lisbon Academic Medical Center (CAML); Lisboa, 30th and 31th of March 2016. (Poster)

Cardoso, V., The neuropeptide neuromedin U regulates group 2 innate lymphoid cells, X PhD Students meeting of the Instituto de Medicina Molecular (IMM)/ Lisbon Academic Medical Center (CAML); Lisboa, 30th and 31th of March 2016. (Poster)

Cardoso, V., The neuropeptide neuromedin U regulates group 2 innate lymphoid cells, XLII Annual Portuguese Society of Immunology (SPI) meeting at IGC, Oeiras, 1st to 3rd June 2016. (Poster)

Godinho-Silva, C., Environmental sensing by innate lymphoid cells. XLII Annual Meeting of the Portuguese Society of Immunology, Instituto Gulbenkian de Ciência, Oeiras, Portugal, 2016. (Poster)

Godinho-Silva, C., Control of innate lymphoid cells by circadian clock signals. 3rd Cross-Institutional Meeting of Young Researchers, Tróia, Portugal, 2016. (Poster)

Prizes, Honours and Awards

Pfizer award for Basic Science, 2016 to Henrique Veiga-Fernandes.

SPI Best Paper Award 2016. Xu W.*, Domingues R.G.*, Fonseca-Pereira D.*, et al. NFIL3 orchestrates the emergence of common helper innate lymphoid cell precursors. Cell Reports, 2015. doi: 10.1016/j.celrep.2015.02.057.

Investigator FCT (Starting Grant 2017-2022), Fundação para a Ciência e Tecnologia to Manuela Ferreira.

SFRH/BPD/126380/2016 - Bolsa de Pós-Doutoramento da Fundação para a Ciência e Tecnologia to Cristina Godinho-Silva.

Embo travel grant - To attend the EMBO conference on Innate Lymphoid Cells, Berlin, Germany.

GQ men of the year 2016. Science, 2016 to Henrique Veiga-Fernandes.

Best Poster presentation award in the EMBO Conference on Innate Lymphoid Cells Berlin-Germany Nov 2016 To Bethania Cassani.

Patents / Prototypes

RET agonist molecules are critical to control type 3 innate lymphoid cell-derived interleukin 22, intestinal inflammation and infection. National patent pending. Authors: Henrique Veiga-Fernandes, Sales Ibiza, Bethania García-Cassani (2016).

Advanced Teaching

Domingues, R.G., Workshop: Graphic Design in Science - CAML Advanced Course, 9th November 2016.

Cardoso, C., Course in Laboratory Animal Science (Cat. B) 2016 (19th April to 3rd May 2016).

Ferreira, M., Member of Master Thesys Jury, Universidade Nova de Lisboa - Genética Molecular e Biomedicina - António Duarte Zapito Bicho de Sousa Franco, September 2016.

Veldhoen, Marc

Major Interests / Objectives

Mucosal Immunology; the maintenance, activation and differentiation of T cells at epithelial sites.

Head of Laboratory

Marc Veldhoen, PhD.

Research Team

Cristina da Conceição Varandas Ferreira	PhD	Investigator (Started September)
Marta Sofia Serra Baptista	Master	Technician (Started September)

Laboratory Keywords / Research Areas

Immune regulation, Mucosal Immunity, Th17 cells, T cell differentiation, Intra-epithelial lymphocytes, Auto-immunity.

Selected Publications

Brucklacher-Waldert V, Ferreira C, Innocentin S, Kamdar S, Withers DR, Kullberg MC, Veldhoen M. (2016) Tbet or Continued ROR-t Expression Is Not Required for Th17-Associated Immunopathology. J Immunology 196(12), 4893-904. (Journal IF: 4.92, Citations: 2).

Withers DR, Hepworth MR, Wang X, Mackley EC, Halford EE, Dutton EE, Marriott CL, Brucklacher-Waldert V, Veldhoen M, Kelsen J, Baldassano RN, Sonnenberg GF. (2016) Transient inhibition of ROR-t therapeutically limits intestinal inflammation by reducing TH17 cells and preserving group 3 innate lymphoid cells. Nature Medicine 22(3), 319-23. (Journal IF: 30.357, Citations: 18).

Zaid A, Mackay LK, Rahimpour A, Braun A, Veldhoen M, Carbone FR, Manton JH, Heath WR, Mueller SN. (2014) Persistence of skin-resident memory T cells within an epidermal niche. PNAS 111(14), 5307-12. (Journal IF: 9.423, Citations: 53).

Li Y, Innocentin S, Withers DR, Roberts NA, Gallagher AR, Grigorieva EF, Wilhelm C, Veldhoen M (2011) Exogenous stimuli maintain intraepithelial lymphocytes via aryl hydrocarbon receptor activation. Cell 147(3), 629-40. (Journal IF: 28.710, Citations: 283).

Hirota K, Duarte JH, Veldhoen M, Hornsby E, Li Y, Cua DJ, Ahlfors H, Wilhelm C, Tolaini M, Menzel U, Garefalaki A, Potocnik AJ, Stockinger B. (2011) Fate mapping of IL-17-producing T cells in inflammatory responses. Nature Immunology 12(3), 255-63. (Journal IF: 20.004, Citations: 549).

Other Projects

2016/2018: Participation in project TWINNING (H2020) "Unleash iMM's research excellence in immunity and infection through twinning to infect Lisbon and Portugal with its increase in competitiveness and innovation" – TwinToInfect, financed by the European Commission. Coordinator: Maria M. Mota.

Publications in Peer Review Journals

Goverse, G., Molenaar, R., Macia, L., Tan, J., Erkelens, M.N., Konijn, T., Knippenberg, M., Cook, E.C., Hanekamp, D., Veldhoen, M., et al. (2017). Diet-Derived Short Chain Fatty Acids Stimulate Intestinal Epithelial Cells to Induce Mucosal Tolerogenic Dendritic Cells. J Immunol.

Brucklacher-Waldert, V., Ferreira, C., Innocentin, S., Kamdar, S., Withers, D.R., Kullberg, M.C., and Veldhoen, M. (2016). Tbet or Continued RORgammat Expression Is Not Required for Th17-Associated Immunopathology. J Immunol 196, 4893-4904.

Withers, D.R., Hepworth, M.R., Wang, X., Mackley, E.C., Halford, E.E., Dutton, E.E., Marriott, C.L., Brucklacher-Waldert, V., Veldhoen, M., Kelsen, J., et al. (2016). Transient inhibition of ROR-gammat therapeutically limits intestinal inflammation by reducing TH17 cells and preserving group 3 innate lymphoid cells. Nat Med 22, 319-323.

Barros-Martins, J., Schmolka, N., Fontinha, D., Pires de Miranda, M., Simas, J.P., Brok, I., Ferreira, C., Veldhoen, M., Silva-Santos, B., and Serre, K. (2016). Effector gammadelta T Cell Differentiation Relies on Master but Not Auxiliary Th Cell Transcription Factors. J Immunol 196, 3642-3652.

Other Publications International

Veldhoen, M. (2017). Th17 Cells Require You to Chew before You Swallow. Immunity 46, 8-10.

Invited Lectures and Seminars

Veldhoen; Presenter and panel member; NCI WORKSHOP: "Modulation of Anti-Tumor Immune Responses by Dietary and Microbial Metabolites", Washington, US; August 30 Sept 1st 2016.

Veldhoen; Epithelial barriers: Maintaining and activating intra-epithelial lymphocytes. Lund, Sweden, September 26th 2016.

Veldhoen; Epithelial barriers: Maintaining and activating intra-epithelial lymphocytes, Edinburg, UK, November 24th, 2016.

Advanced Teaching

Supervisory board member, Management board member, IP board member, WP lead, ENLIGHT-TEN ITN, 1st annual meeting, Germany, October 11-13th, 2016.

Lecturer Course of " Immunologie Approfondie " of the Pasteur Institute (part of the M2 Master's degree of the Paris V, VI, VII Universities.) Pasteur Institute, Paris, France; December 2016.

Science and Society

Since there is no place elsewhere:
Editor-in-chief of Immunity Inflammation and Disease.
Editorial board member of European Journal of Immunology.
Editorial board member of International Immunology.

Technical Facilities

Biobank

Major Interests / Objectives

Biobanco-iMM is a structure created by the Instituto de Medicina Molecular (IMM), which receives and stores a wide collection of biological samples donated voluntarily and its correspondent clinical information in order to foster biomedical research. Biobanco-iMM aims to achieve sustainable growth, focused on improving quality, not only in samples but also in data management. Services include not only storage and processing of human samples but also Nucleic Acids Extraction, Isolation of Peripheral Blood Mononuclear Cells, Data Management and study design.

Head of Facility

Sérgio Jerónimo Rodrigues Dias, PhD, Associate Professor

Team

Ana Sofia Zhao	Master	Technician (Left June)
Ângela Maria Cerqueira Coelho Afonso	Master	Technician
Brígida Alexandra Amaral Mendes Riso	Master	PhD Student, Superior de Ciências do Trabalho e da Empresa (Started February)
Fabiana Cândida da Rocha Rodrigues	Graduate	Technician (Started April)
Joaquim Miguel Polido Pereira	Graduate	Investigator, CHLN, MD
Rebeca Tatiana de Souto Santos	Master	Technician
Susana Raquel Salsinha Ferreira	Master	Technician (Started September)

Keywords

Biobanks, Human Samples, Clinical Information, Biomedical Research.

Major Scientific Achievements

In 2016 we started 5 new collections, and in total there are 49 active collections in Biobanco-iMM covering all the main clinical areas. From each donor different samples can be collected, according to the need of each collection. We store predominantly serum samples (53,64%), followed by whole blood (20.85%) and DNA samples (8.83%). In 2016, 3214 samples have left Biobanco-iMM mostly through collaboration with research institutions in Portugal, Germany

and Finland. Serum is still being the most requested sample type corresponding to 44.41% of the requested samples. Biobanco-iMM is certified with ISO 9001 Quality Management System by TÜV Rheinland Portugal, as part of IMM Certification.

Selected Publications

Rosa N, Marques J, Esteves E, Fernandes M, Mendes VM, Afonso Â, Dias S, Pereira JP, Manadas B, Correia MJ, Barros M (2016) Protein Quality Assessment on Saliva Samples for Biobanking Purposes. Biopreservation and Biobanking (Journal IF: 1.804, Citations: 0).

Afonso A, Polido-Pereira J, Dias S. (2014) Biobank Profile: Biobanco-IMM, Lisbon Academic Medical Centre. Biopreservation and Biobanking 12, 433-434. (Journal IF: 1.578, Citations: 0).

Other Publications International

Sousa I, Abrantes P, Francisco V, Teixeira G, Monteiro M, Neves J, Norte A, Cordeiro Carlos, Sá João, Reis E, Santos P, Oliveira M, Sousa S, Fradinho M, Malheiro F, Negrão L, Feijó Salvato, Oliveira S (2016) Multicentric Genome-Wide Association Study for Primary Spontaneous Pneumothorax. PLoS One 11, (Journal IF: 3.64, Citation:0).

Ferreira A, Alho I, Vendrell I, Melo M, Brás R, Costa A, Sousa A, Mansinho A, Abreu C, Pulido C, Macedo D, Pacheco T, Correia L, Costa L, Casimiro S (2016) The prognostic role of RANK SNP rs34945627 in breast cancer patients with bone metastases. Oncotarget 7, (Journal IF: 6.356, Citation:0).

Martins J E, Simões M, Rosa N, D'Alimonte D, Mendes V M, Correia M J, Barros M, Manadas B (2016). Happiness as a self state and trait of consciousness: clinical hypnosis and saliva molecular biomarkers - a brief revision. Experimental Pathology and Health Sciences: Research, Clinics, Teaching and Society, 8 (1): 51-54.

Araujo GR, Fujimura PT, Vaz ER, Silva TA, Rodovalho VR, Britto-Madurro AG, Madurro JM, Fonseca JE, Silva CHM, Santos PS, Mourao AF, Canhao H, Goulart LR, Goncalves J, Ueira-Vieira C (2016) A novel reactive epitope-based antigen targeted by serum autoantibodies in oligoarticular and polyarticular juvenile idiopathic arthritis and development of an electrochemical biossensor. Immunobiology. 224(5):634-640. (Journal IF: 2.781, Citation:0).

Malik R, Traylor M, Pulit S, Bevan S, Hopewell J, Holliday E, Zhao W, Abrantes P, Amouyel P, Attia J, Battey T, Berger K, Boncoraglio G, Chauhan G, Cheng Y, Chen W, Clarke R, Cotlarciuc I, Debette S, Falcone G, Ferro J, Gamble J, Ilinca A, Kittner E, Kourkoulis C, Lemmens R, Levi C, Lichtner P, Lindgren A, Liu J, Meschia J, Mitchell B, Oliveira S, Pera J, Reiner A, Rothwell P, Sharma P, Slowik A, Sudlow C, Tatlisumak T, Thijs V, Vicente A, Woo D, Seshadri S, Saleheen D, Rosand J, Markus H, Worrall B, Dichgans M (2016) Low-frequency and common genetic variation in ischemic stroke: The METASTROKE collaboration. Neurology. 86(13): 1217–1226 (Journal IF: 8.166, Citation:0).

Invited Lectures and Seminars

Polido-Pereira, J. Apresentação curso investigação CHLN - Biobanco(s), Lisboa, Portugal 18 de May 2016.

Afonso, Â. Simpósio sobre Genética e Proteção de Dados Pessoais, Lisboa, Portugal, 7 June 2016.

Communications in National Conferences

Polido-Pereira, J. Sessões do CAML aula magna - Biobanco IMM-CAML, Lisboa, 29 September 2016.

Polido-Pereira, J. Dia da Investigação - Biobanco IMM-CAML, Lisboa, 14 December 2016.

Afonso, Â. Seminário de Oncobiologia Universidade Nova de Lisboa- Banco de Tumores – que utilidade- Lisboa, 11 May 2016.

Bioimaging

Major Interests / Objectives

The Bioimaging Facility acts as a support structure to carry out and nurture research done with Light Microscopy inside the institute. Besides managing resources, the Facility provides iMM scientists and visitors with excellence in scientific know-how and expertise in using light microscopy methods for their research. We assist in planning microscopy-oriented projects, choosing materials and equipment, analyzing experimental results, processing acquired images and presenting data. Together with continuous training of new users, we organize regular courses to introduce users to the most recent microscopy techniques and foster interactions and collaborations between microscopy users at the iMM.

Head of Facility

José Miguel Rino Henriques, PhD

Graphical Abstract

Team

Ana Margarida Santos do Nascimento	Master	Technician
António Francisco Pinção Loução Homem Temudo	Master	Technician

Keywords / Research Areas

Fluorescence Microscopy, Laser Scanning Confocal Microscopy, Image Processing and Analysis, Quantification of protein dynamics and interactions, Training in Microscopy.

Major Scientific Achievements

In 2016 three new microscopy systems were acquired by the iMM for the Bioimaging Facility: a lightsheet microscope (Zeiss Lightsheet Z1), a confocal microscope (Zeiss LSM 880 with Airyscan) and a widefield microscope (Zeiss Axio Observer). A new Bioimaging Wiki Page (https://imm.medicina.ulisboa.pt/facility/bioimaging) was created as a reference site with all the relevant information related with the Facility. Scientific collaboration with an iMM research lab resulted in one publication in which José Rino is first author: Rino J et al, Methods (PMID: 26855377, IF: 3.503). In 2016 the Bioimaging Facility services were used by 150 users from 34 different research labs, two of them from outside the IMM. The Bioimaging Facility is a Zeiss labs@location Partner, integrating a community of leading research facilities with expertise in specific applications of technologies that provide in depth knowledge and scientific support to Zeiss customers community.

Selected Publications

Martin RM*, Rino J*, Carvalho C*, Kirchhausen T, Carmo-Fonseca M (2013) Live-Cell Visualization of Pre-mRNA Splicing with Single-Molecule Sensitivity. Cell Reports 4(6), 1144-1155. http://www.sciencedirect.com/science/article/pii/S2211124713004373#. (Journal IF: 7.207, Citations: 15) * these authors have contributed equally to this work.

Carvalho S, Raposo AC, Martins FB, Grosso AR, Sridhara SC, Rino J, Carmo-Fonseca M, de Almeida SF (2013) Histone methyltransferase SETD2 coordinates FACT recruitment with nucleosome dynamics during transcription. Nucleic Acids Res 41(5), 2881-2893. http://nar.oxfordjournals.org/content/41/5/2881.long. (Journal IF: 8.278, Citations: 28).

Martins SB*, Rino J*, Carvalho T, Carvalho C, Yoshida M, Klose JM, de Almeida SF, Carmo-Fonseca M. (2011) Spliceosome assembly is coupled to RNA polymerase II dynamics at the 3' end of human genes. Nat Struct Mol Biol 18, 1115. http://www.nature.com/nsmb/journal/v18/n10/full/nsmb.2124.html. (Journal IF: 12.712, Citations: 40) * these authors have contributed equally to this work.

Domingues I, Rino J, Demmers JA, de Lanerolle P, Santos SC (2011) VEGFR2 Translocates to the Nucleus to Regulate Its Own Transcription. PLoS One 6, e25668. http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0025668. (Journal IF: 4.092, Citations: 21).

Henriques CM, Rino J, Nibbs RJ, Graham GJ, Barata JT (2010) IL-7 induces rapid clathrin-mediated internalization and JAK3-dependent degradation of IL-7R alpha in T cells. Blood 115, 3269-77. http://www.bloodjournal.org/content/115/16/3269.long?sso-checked=true. (Journal IF: 10.558, Citations: 38).

Publications in Peer Review Journals

Rino J, de Jesus AC, Carmo-Fonseca M (2016) STaQTool: Spot tracking and quantification tool for monitoring splicing of single pre-mRNA molecules in living cells. Methods 98:143-9 (Journal IF: 3.503, Citations: 1).

Internationalisation

The Bioimaging Facility is a Zeiss labs@location Partner, integrating a community of leading research facilities with expertise in specific applications of technologies that provide in depth knowledge and scientific support to Zeiss customers community.

Advanced Teaching

Rino, J. lectured (both theoretical lectures and hands-on practicals) at the "II Quantitative Fluorescence Microscopy Course", Center for Neuroscience and Cell Biology, Coimbra, November 28 - December 2, 2016.

Rino, J. organized and lectured (both theoretical lectures and hands-on practicals) the "ReTuBi Microscopy Workshop", iMM, Lisbon, 18 - 22 October, 2016.

Biosafety Level 3 Laboratory

Major Interests / Objectives

The IMM houses a 70 m2 BSL3 Facility meeting the highest safety standards as defined by European and International guidelines. The purpose of this facility is to enable researchers to carry out work with infectious agents that require BSL3 or ABSL3 containment conditions. The Facility is available to IMM internal and affiliated researchers, and, with the exception of ABSL3, to external researchers from academia, pharma and biotech. Work in the BSL3 Lab follows SOPs defined in the Facility's Rules and Guidelines Manual. The IMM BSL3 Facility comprises two fully equipped tissue culture rooms and one animal experimentation room for rodents. Available equipment includes incubators, benchtop centrifuges, refrigerators and freezers, microscopes, a -80 freezer, and an ultracentrifuge.

Head of Facility

Joana Margarida da Silva Marques, PhD

Team

Inês Antunes Cabral Queiroz de Matos	Graduate	Technician
Maria Dolores Paulos Bonaparte Figueira	Graduate	Veterinary
Miguel Prudêncio	PhD	Director (Left October)

Keywords / Research Areas

Biosafety level 3, HIV, Mycobacterium tuberculosis, ABSL3.

Major Scientific Achievements

Merging of Rodent facility with BSL-3 Lab: in order to optimize the use and management of the Biosafety level 3 laboratory, this facility was merged with the rodent facility, allowing for an optimal use of human resources, as well as the standardization of logistics, administrative procedures and general organization and routines.

Advanced Teaching

Prudêncio, M. organized the 12th edition of the course "Biosafety training for users of the iMM BSL-3 facility", iMM, September, June 6, 2016.

Marques, J.M. and Moreira, I. organized the 13th edition of the course "Biosafety training for users of the iMM BSL-3 facility", iMM, September, 16, 2016.

Flow Cytometry

Major Interests / Objectives

The Flow Cytometry Facility provides a state of the art flow cytometry service to iMM Lisboa researchers as well as external groups from other research institutes. We aim at training researchers in the adequate use of the instruments and also on flow cytometry principles, experiment planning, as well as data analysis and interpretation. The facility is equipped with 4 cell analysers (1 BD FACSCalibur, 2 BD LSRFortessa - one of them equipped with equipped with a High Throughput Sampler - and 1 BD Accuri C6) and 2 cell sorters (BD FACSAria IIu and BD FACSAria III). Our staff further ensures quality control and maintenance procedures on all instruments and the implementation of the Quality Management System, according to ISO 9000.

Head of Facility

José Miguel Rino Henriques, PhD

Team

Ana Isabel da Silva Vieira	Master	Technician
Andreia Pereira Gameiro	Master	Technician
Filipa Faria Rosa	Graduate	Technician (Started December)
José Henrique Veiga Fernandes	PhD	Director (Left October)
Mariana Rafael Fernandes	Master	Technician

Keywords / Research Areas

Flow Cytometry, High Speed Cell Sorting, Multiparametric Analysis, Fluorochrome, Fluorescent Protein.

Major Scientific Achievements

In 2016 a total of 148 users from 34 research labs, 5 of them from outside the iMM, used the Flow Cytometry Facility. We performed individual 95 training sessions on the different systems during 2016. In December we concluded the negotiations for the acquisition a new BD LSRFortessa X-20 that will allow for 16-color analysis and will be installed in early 2017. We also concluded the negotiations for the acquisition of a new generation ImageStream Mark II imaging flow cytometer, which combines the high throughput of flow cytometry with optical microscopy imaging and will also be installed in early 2017.

Histology and Comparative Pathology Laboratory

Major Interests / Objectives

The Histology and Comparative Pathology Laboratory aims at providing histology and comparative pathology support to IMM scientists investigating animal models of human disease, and scientists/physicians investigating human disease. Services are also available for extramural investigators.

Services include HISTOLOGY (tissue processing for paraffin-embedding; gelatin/OCT-embedding and cryosectioning; histochemistry), IMMUNOHISTOCHEMISTRY, TRANSMISSION ELECTRON MICROSCOPY and VETERINARY PATHOLOGY. We also provide assistance in study design and procedural training for researchers (necropsy, tissue harvesting).

Head of Facility

Tânia Gilot Mendes de Carvalho Barão, PhD

Team

Ana Margarida Biscaia Fernandes dos Santos	Graduate	Technician
Andreia Lúcia do Nascimento Pinto	Master	Technician
Bruna Camila Coelho Almeida	Graduate	Trainee

Keywords / Research Areas

Histology, Comparative Pathology, Transmission Electron Microscopy, Immunohistochemistry.

Major Scientific Achievements

2016 was an amazing year for the HIstology and Comparative Pathology Lab, culminating with the engagement in medical diagnosis (Primary Ciliary Dyskinesia) and the publication of much of the research work that we were involved in over the past few years. Cancer, sleeping sickness, inflammatory bowel disease, malaria, aging, are just a few examples. All these publications illustrate the power of collaboration, multidisciplinarity and trust in science, and they show the power of anatomic pathology, including immunohistochemistry and transmission electron microscopy special techniques.

Selected Publications

Sandra Trindade, Filipa Rijo-Ferreira, Tânia Carvalho, Daniel Pinto-Neves, Fabien Guegan, Francisco Aresta-Branco, Fabio Bento, Simon A. Young, Andreia Pinto, Jan Van Den Abbeele, Ruy M. Ribeiro, Sérgio Dias, Terry K. Smith, and Luisa M. Figueiredo (2016) Trypanosoma brucei Parasites Occupy and Functionally Adapt to the Adipose Tissue in Mice. Cell Host Microbe (Journal IF: 6.61, Citations: 13).

S Ibiza, B Cassani, H Ribeiro, T Carvalho (…) H Veiga-Fernandes (2016) Glial cell-derived neuroregulators control type 3 innate lymphoid cells and gut defence. Nature (Journal IF: 38.138, Citations: 6).

NC Correia, R Fragoso, T Carvalho, FJ Enguita, JT Barata (2016) MiR-146b negatively regulates migration and delays progression of T-cell acute lymphoblastic leukemia. Scientific Reports (Journal IF: 5.47, Citations: 1).

MC Carneiro, CM Henriques, J Nabais, T Ferreira, T Carvalho, MG Ferreira (2016) Short Telomeres in Key Tissues Initiate Local and Systemic Aging in Zebrafish. PLoS Genetics (Journal IF: 7.17, Citations: 4).

T Hänscheid, T Carvalho, MP Grobusch. (2015) Hemozoin Detection for Human Malaria Diagnosis Investigated in Rodent Models: How Similar Is Similar? Trends in Parasitology (Journal IF: 7.295, Citations: 1)

Publications in peer review Journals

Nunes-Cabaço H, Matoso P, Foxall RB, Tendeiro R, Pires AR, Carvalho T, Pinheiro AI, Soares RS, Sousa AE (2014) Thymic HIV-2 infection uncovers post-transcriptional control of viral replication in human thymocytes. Journal of Virology (Journal IF: 4.648).

Itoe MA, Sampaio JL, Cabal GG, Real E, Zuzarte-Luis V, March S, Bhatia SN, Frischknecht F, Thiele C, Shevchenko A, Mota MM (2014) Host Cell Phosphatidylcholine Is a Key Mediator of Malaria Parasite Survival during Liver Stage Infection. Cell Host Microbe 16, 778. (Journal IF: 12.194).

Shengyong Ng, S March, A Galstian, K Hanson, T Carvalho, M Mota, and S Bhatia (2014) Hypoxia Promotes Liver Stage Malaria Infection in Primary Human Hepatocytes in Vitro. Disease Models & Mechanisms 7, 215. (Journal IF: 5.537).

F Caiado, T Carvalho, I Rosa, L Remédio, A Costa, J Matos, B Heissig, H Yagita, K Hattori, JP Silva, P Fidalgo, A Dias Pereira, S Dias (2013) Bone marrow-derived CD11b+Jagged-2+ cells promote epithelial to mesenchymal transition and metastization in colorectal cancer. Cancer Research 73, 4233. (Journal IF: 8.650).

M Boura, R Frita, A Góis, T Carvalho, and T Hanscheid (2013) The hemozoin conundrum: is malaria pigment immune-activating, inhibiting, or simply a bystander? Trends in Parasitology (Journal IF: 5.513).

Other Publications National

M Peleteiro, J Ferreira da Silva, P Dias-Pereira, T Carvalho, A Faustino, J Correia, H Pissarra, G Stilwell (2016). Manual de Necrópsia Veterinária. Lisboa: LIDEL.

M Peleteiro, R Marcos, M Santos, H Pissarra, J Correia, T Carvalho (2011). Atlas de Citologia Veterinária. Lisboa: LIDEL.

Advanced Teaching

Carvalho, T. lectured on "Mouse pathology and Necropsy". Instituto Gulbenkian Ciência's Practical Course on Animal Handling and Experimentation in mouse and zebrafish, Oeiras, Portugal.

Carvalho, T. organized the course and lectured on "Show me your mouse and I will show you your phenotype - histopathology in biomedical reserach". CAML PhD course. IMM. Lisboa, Portugal.

Carvalho, T. organized the course and lectured on "Workshop Mice VS Human". AIMS meeting - Annual International Medical Students Meeting. Associação de Estudantes da Faculdade de Medicina de Lisboa (AEFML). Faculdade de Medicina, Universidade de Lisboa. Portugal.

Science and Society

Chair of the Instituto Gulbenkian Ciência's Ethics Committee.

Information Systems

Major Interests / Objectives

The Information Systems Unit (USI) mission is to help researchers reach their maximum productivity by using adequate Information Technology resources. Our aims are:

1. Provide state-of-the-art information technology infrastructure and support services.

2. Contribute to improve productivity of researchers and research outcomes.

3. Facilitate and optimize management business processes.

USI intervenes mainly in the following areas:

1. Information Technology (IT) support to IMM users.

2. Planning, implementation and maintenance of the infrastructure that stores, processes and protects research data.

3. Design, implement and integrate information systems to facilitate scientific and management processes.

Head of Facility

Pedro Miguel Bernardino Eleutério, Graduate

Team

André Fílipe Cardoso Gonzalez Fragoso	Undergraduate	Technician (Started May)
Daniel José Vilhena Guerreiro	Graduate	Technician
José Joaquim Carvalho da Costa Braga	PhD	Head of Facility (Left April)
Pedro Viana Maya de Oliveira Pires	Graduate	Technician (Left June)

Keywords / Research Areas

IT support, Data protection, Information integration, Web Services and applications.

Major Scientific Achievements

USI implemented a new booking system to better serve researchers, and facilities staff. This system improves equipment usage, and management, due to new features like statistics data, usage rules, and enhanced permission control.

A new data storage system was designed acquired, and implemented successfully, which allows providing 1Tb per researcher (300Tb total), a tenfold increase on previously available storage space. Before implementing the storage space upgrade, all network equipment's were replaced by newer gigabit models, each of them ten times faster. This network upgrade provides a crucial increase in network bandwidth, causing an excellent performance level on the new storage system.

Half of current iMM Labs have bioinformatics needs. A high performance cluster solution has been studied, designed, and acquired. It will be implemented in 2017. The upgrade of accounting and office applications to the latest 2016 version has been started, 50% of this project has been concluded.

Quality and Safety in Laboratory

Major Interests / Objectives

The QSL is divided in three different areas, each one dedicated to improve the quality of research of the Institute and comply with National and International guidelines and best practices. The Washing Room is responsible for the cleaning and sterilization of lab material, both common and specific of all research units. The Purchasing Office centralizes all the Institute acquisitions, namely products, services and equipments and provides important information related to prices and ongoing promotions to all research units. The Lab Management is responsible for the adequate selection and installation of new equipment, the preventive and corrective maintenance of common equipment and design/renewal of laboratory infrastructures.

Head of Facility

Alexandra Maralhas, Graduate

Team

Alexandre Manuel Raposo de Jesus	Master	Technician
Ana Rita Fonseca Vicente	Graduate	Technician
Cláudia Cavaco Guerreiro	Master	Technician (Started August)
Cláudia Sofia Palmeiro Alves da Costa	Undergraduate	Technician (Started August)
Edna Neias F. Gomes	Graduate	Technician
Fernanda Vila-Chã	Undergraduate	Technician
Irina Vitalivna Semizorova	Undergraduate	Technician (Started April)
Maria Jardim Caramelo Dias Cabral	Master	Technician
Paula Alexandra Rodrigues Luís	Undergraduate	Technician (Started November)
Rossandro Martins Gomes	Undergraduate	Technician (Left January)
Sandra Isabel Francisco Lopes	Graduate	Technician
Sara Diana Pinheiro dos Santos	Master	Technician
Sara Filipa Pires Gonçalves Silva	Undergraduate	Technician (Left March)
Sara Marisa Caseiro Rebelo	Graduate	Technician (Started May)
Saulo de Tárcio de Freitas Silva	Undergraduate	Technician (Started February)
Vânia Isabel Estevens Polido Marques Paula	Graduate	Technician

Keywords

Infrastructure and equipments maintenance, Health and Safety in Work, Laboratory Design, Purchases, Budgeting, Technical Consulting.

Major Scientifc Achievements

The service was actively involved in several re-modeling works of laboratory spaces such as, new laboratory spaces for research groups – a Molecular Biology lab for Miguel Prudêncio and Luísa Figueiredo (7 rooms), together with a new tissue culture room to be used by the research groups. The equipment management (acquisition, maintenance and repair) was improved with the ongoing inventory of all iMM equipments, required for an excellent level of support to over 300 equipments with maintenance contracts. 2016 was also marked by the progressive implementation of the public procurement procedures to all iMM acquisitions and health and safety in work policies and, development of risk assessment procedures, focused on the work developed in the laboratories.

Rodent Facility

Major Interests / Objectives

The rodent facility of the iMM aims to support state-of-the-art animal research. For that purpose, we provide the best housing and care of laboratory rodents and support training and education in Laboratory Animal Science.

Head of Facility

Joana Margarida da Silva Marques, PhD

Team

Ana Catarina Jorge Mendes	Graduate	Technician
Ana Rita da Silva Pereira	Graduate	Technician
Andreia Joana Miguel Madalena	Undergraduate	Technician
Bruno Miguel da Conceição Novais	Master	Technician (Started August)
Carlos Barata da Silva	Graduate	Technician (Left June)
Cecilia Simão	Undergraduate	Technician
Daniel Corte Real Gomes da Costa	Master	Veterinary (Started November)
Felícia Maria Augusto Ramos	Undergraduate	Technician
Filipe Fernandes Delgado	Graduate	Technician
Iolanda Safira Sousa Moreira	Graduate	Technician
José António Vila Chã	No degree	Auxiliary
Márcia Pereira da Silva	Graduate	Trainee (Started April)
Maria Dolores Paulos Bonaparte Figueira	Graduate	Veterinary
Maria Leonor Gomes de Araújo	Undergraduate	Technician (Started August)
Mihaela Elena Morari	Undergraduate	Technician
Olena Pavlovska Borges de Pinho	Undergraduate	Technician
Patrícia Andrade da Fonseca Brites	Undergraduate	Technician (Started December)
Pedro Manuel Nogueira dos Santos	Undergraduate	Technician
Sara Ghirelli	Undergraduate	Technician

Keywords / Research Areas

Rodents, Laboratory Animal Science, Animal welfare.

Major Scientific Achievements

Hiring an Animal Welfare Officer - The Directive 2010/63 harmonises European animal laboratory standards, requiring the implementation of several new requirements to ensure the welfare of animals used in research. To fully implement the legal requirements, the rodent

facility hired a dedicated person – an Animal Welfare Officer - which is the first professional of the sort in Portugal.

Merging of Rodent facility with BSL-3 Lab - As a strategy to optimize the use and management of the Biosafety level 3 laboratory it was merged with the rodent facility, allowing an optimal use of human resources, as well as the standardization of logistics, administrative procedures and general organization routines.

Facilitating iMMs membership to EARA - the European Animal Research Association – is an organization that works with research institutions to inform and educate audiences on the use of animals in biomedical research. It supports researchers and trains them to communicate efficiently.

Other Projects

2013/2016: Modelos animais de doenças humanas: refinamento de estratégias e implementação de novas tecnologias. Coordinator: Joana Marques.

Invited Lectures and Seminars

Marques, J.M. Setting up an ORBEA and promoting a culture of care – an example from the iMM. I Simpósio Nacional de Órgãos Responsáveis pelo Bem-Estar dos Animais (ORBEA) usados em investigação científica. Porto, Portugal, Outubro 18, 2016.

Advanced Teaching

Marques, J.M. Organized the course 'Laboratory Animal Science' (according to FELASA cat. B), iMM, Lisbon. April 10 - May 6, 2016.

Zebrafish Facility

Major Interests / Objectives

Provide a fully functional facility to be used by the IMM research units.

Provide technical assistance to facilitate the use of zebrafish in a wide range of experimentation sets.

Head of Facility

Maria Leonor Tavares Saúde, PhD, Assistant Professor

Team

Aida Gonçalves Lino Barros	No Degree	Technician
Lara Carvalho	Master	Lab Manager
Tiago Filipe Ribeiro Ruas Maçarico	Master	Technician (Left May)

Keywords / Research Areas

Zebrafish, Development, Regeneration, Disease models, Small molecules screening.

Major Scientific Achievements

We achieved the old objective to have a dedicated room to place our Swimming Track System that allows us to evaluate behaviour in a control environment.

Selected Publications

Fior R., Maxwell A.A., Ma T.P., Vezzaro A., Moens C.B., Amacher S.L., Lewis J. and Saúde L. (2012) Differentiation and movement of presomitic mesoderm progenitor cells are both controlled by Mesogenin1. Development 139(24), 4656-65. (Journal IF: 6,273, Citations: 10).

Sousa S., Afonso N., Bensimon-Brito A., Fonseca M., Simões M., Leon J., Roehl H., Cancela M.L., Jacinto A (2011) Differentiated skeletal cells contribute to blastema formation during zebrafish fin regeneration. Development 138(18), 3897-905. (Journal IF: 6,273, Citations: 28).

Azevedo A.S., Grotek B., Jacinto A., Weidinger G. and Saúde L (2011) The regenerative capacity of the zebrafish caudal fin is not affected by repeated amputations. PloS ONE 6(7), e22820. (Journal IF: 3,534, Citations: 5).

Vala, I., Martins, L., Imaizumi, N., Nunes, R., Rino, J., Kuonen, F., Carvalho, L., Rüegg, C., Grillo, I., Barata, J., Mareel, M. and Santos S.C.R (2010) Low doses of ionizing radiation promote tumor growth and metastasis by enhancing angiogenesis. PlosONE 5(6), e11222. (Journal IF: 3,534, Citations: 16).

Lopes S.S., Lourenço R., Pacheco L., Moreno N., Kreiling J. and Saúde L. (2010) Notch signalling regulates left-right asymmetry through ciliary length control. Development 137(21), 3625-32. (Journal IF: 6,273, Citations: 36).

Invited Lectures and Seminars

Carvalho, L. Maintenance and Husbandry in Zebrafish. Course in Laboratory Animal Science (Cat. B), iMM, Lisboa, Portugal, Abril 2016.

Advanced Teaching

We provided advanced training to:

Paola Zarattini - Università degli Studi di Trieste, Italy.

Marta Speck - Centro de Modelos Biológicos Experimental, Pontifícia Universidade Católica do Rio Grande do Sul, Brasil.

Science and Society

The Fish facility was visited by:

13 January - Escola Secundária Caldas da Rainha, Portugal (28 students).

24 February - Escola Secundária D Sancho II, Elvas, Portugal (42 students from 12º year – Biology).

6 April - Agrupamento de Escolas de São Brás de Alportel, Portugal (13 students from 12º year - Biology) Portugal (40 students from 11º and 12º year - Biology).

24 November - Escola da Terra - Profª Maria Seixas (5 students from 9º year).

Administrative Facilities

Career Development

Major Interests / Objectives

General Aim:

Provide training opportunities for success in science to researchers at different stages in their careers.

Ongoing Activities:

- Ensure full running of ongoing PhD (CAML, LisbonBioMed) and Postdoctoral Programs: Launch Calls; Administrative execution; Managerial Support to PhD and Postdoctoral fellows activities;

- Support PhD and Postdoctoral Fellows throughout their training;

- Run Advanced Courses, scheduled upon CAML & LisbonBioMed Scientific Boards approval; cover all organizational aspects.

- Organize the Monday Lectures seminar series.

New Programs:

- Launch & implementation of a Master Program.

Head of Facility

Ana Filipa Duarte Nunes Almeida, PhD

Team

Filipa Pontes de Moraes	PhD	Administrative (Left March)
José Henrique Veiga Fernandes	PhD	Director (Left March)

Keywords / Research Areas

Advanced-Training, Master-Program, PhD-Program, Postdoctoral-Program, Career Development, Advanced Courses.

Major Scientific Achievements

Specific Achievements:

- Launch & administrative execution of LisbonBioMed PhD Program: international pre-call and final call launch, info dissemination, applications management, coordination of the selection and admission process, production of overall program metrics and statistics and reporting, grounding the 8-week initial training program and its implementation.

- Transversal managerial support to:

i) FCT grant applications, renewals, spontaneous applications, general queries;

ii) Advanced courses, Monday Lectures and other scientific events.

Advanced Teaching

Filipa Nunes, organized the seminar "Writing the first draft of your research paper: fast and painless", by Marcia Triunfol, iMM Lisboa, June 2, 2016.

Filipa Nunes, organized the curricular unit "Introduction to Research", MSc in Oncobiology, Faculty of Medicine, University of Lisbon, October 6-13, 2016.

Filipa Nunes, lectured the seminar “Entrepreneurship and strategies to take scientific ideas into the market”, MSc in Oncobiology, Faculty of Medicine, University of Lisbon, October 11, 2016.

Communication

Major Interests / Objectives

The Communication is iMM's first line of interaction with society providing updated, reliable and relevant information on all of iMM's thematic areas, as well as promoting the very best scientific successes made by its research teams. Its mission is to support the internal and external communication of iMM's activities as well to advise iMM Direction on Public Affairs issues.

With the firm belief that science should inform decisions because it impacts everyone's lives, the Communication targets a wide range of audiences (policy makers, public opinion, patients associations, medical societies, schools, academia, industry, media, arts, amongst others). It serves as spokesman for the institute and it's responsible to manage iMM's image aligned with the institute values and mission.

Head of Facility

Ana Maria Matias de Barros, PhD

Team

Ana Cláudia Silva	Graduate	Administrative (Started December)
Andreia Sofia Machado	Graduate	Administrative (Left July)
José Veiga-Fernandes	PhD	Director (Left September)
Sandra Isabel Gertrudes	Graduate	Administrative (Started November)

Keywords

Corporate and Institutional Communication, Science Communication, Public Affairs, Digital Communication.

Funding Programs Office

Major Interests / Objectives

Initially created in 2008 the Funding Programs Office has been restructured in September 2015. With the vision of becoming the strategic front door for funding at iMM, aiming its sustainable growth and its placement as scientific excellence leader and societal influencer, the Office develops its core activities in two main pillars: i) to support the securing of competitive funding at iMM (by disseminating funding opportunities, supporting the preparation & submission of applications, and supporting the negotiation of funded projects); ii) to increase the competitiveness of iMM in the long-term attraction of funding (by developing new and improving existing tools and processes, and liaising with stakeholders).

Head of Facility

Joana Catarina da Rocha Lamego, PhD (Left in November)

Team

Joana Costa	PhD	Manager
Marija Petkovic Garcia	PhD	Administrative

Keywords / Research Areas

Increase the awareness and motivation towards the securing of international competitive funds, Support the securing of national and international competitive funding, Liaise with national and international funding and policy agencies.

Major Scientific Achievements

The Funding Programs Office has:

- Supported 64 and 44 applications submitted to international and national competitive funding agencies, respectively;

- Supported 31 applications submitted to the internal funding schemes of The Director's Fund;

- Supported the negotiation of 22 and 54 international and national applications retained for funding, respectively;

- Supported the implementation of the technical activities of Horizon 2020 ERA Chair project EXCELLtoINNOV and H2020 Twinning project TwinntoInfect, requiring the orchestration of the contributions of different services at iMM Lisboa;

- Liaised with national and international funding and executive agencies, including but not limited to the Comissão de Coordenação e Desenvolvimento Regional de Lisboa e Vale do Tejo and the European Commission Research Executive Agency;

- Secured funding from the successful application to Portugal 2020 11/SI/2015 call – Sistema de Incentivos à Investigação e Desenvolvimento Tecnológico.

Ongoing Research Projects

2016/2018: iNVEST_iMM – Promotion of internationalisation of R&D excellence at iMM Lisboa, aiming at value creation and knowledge-based economy in Lisbon region Portugal 2020, 11/SI/2015, Incentives System to Research and Technological Development, R&D Internationalisation. 289.680 €.

2015/2020: Leverage research EXCELLence and INNOVation. Coordinator: Joana Catarina da Rocha Lamego. Agency: Comissão Europeia. Reference: EXCELLence and INNOVation. Amount: 2777183.75. Amount (total): 2777183.75.

Advanced Teaching

Lectures provided as part of the training module "Introduction to research" of the MSc in Oncobiology, Faculdade de Medicina, Universidade de Lisboa.

- Costa J., "Funding Scientific Research", October 10, 2016.

- Lamego J., "European Collaborative Projects", October 11, 2016.

Management

Major Interests / Objectives

IMM Legal, Human Resources and overall Administrative and Financial matters:

- Accounting – IMM statutory accounts and tax returns; cost accounting;
- Project Management - From contractual start to final report submission; related support to researchers;
- Human Resources - Contracts; compensation; performance assessment;
- Legal – Institutional and researchers support: namely on intellectual property and consortium agreements;
- Quality Management System - Up to date procedures, reports and assessments, fulfilling ISO 9001 requirements;
- IMM's Administrative and Financial support;

The Management Unit also provides support to the Executive Director and Statutory Boards in relation to organizational issues, inter-institutional collaborations, financial and budget management strategy.

Head of Facility

Maria Margarida Mendonça Correia Pires Pinto Gago, Graduate

Team

Ana Clara Pereira Faria Artur	Graduate	Administrative (Started June)
Ana Natália Domingues Dias	PhD	Administrative (Started June – Left July)
André Rebelo da Silva Fialho	Graduate	Lawyer
Andreia Sofia Gonçalves Almeida Vaz Veiga	Graduate	Administrative
Cláudia Aurora Mira Soeiro	Graduate	Administrative
David Abreu	Master	Administrative (Started September)
Eduarda Maria Seabra Rosmaninho	Master	Administrative
Isabel Pequenino Roque	Graduate	Administrative
Lúcia Cristina Manso Alves	Graduate	Administrative (Started June)
Maria José Flores Marques Antunes	Graduate	Administrative
Maria Rosa Vieira Ventura	Graduate	Administrative (Started February)
Mónica Aurora Malheiro Vieira	Graduate	Administrative
Patrícia Ramalhete Mendes da Silva Calado	PhD	Administrative (Left February)
Pedro Gaspar Rebelo Lopes Moura	Master	Administrative
Ricardo Caetano Dias Cotrim	Graduate	Administrative (Started April)
Sandra Paula da Silva Duarte	Graduate	Accountant
Sara Marisa Caseiro Rebelo	Graduate	Administrative (Left May)
Sara Sofia de Almeida Nunes	Graduate	Administrative (Left February)
Susana Isabel dos Santos Pedroso	Undergraduate	Administrative
Tânia Cristina Torres Pereira Ascensão	Graduate	Administrative
Teresa Maria Paulo Ferreira da Conceição Saúde Fernandes	Graduate	Lawyer (Left July)
Tiago José Ramos Reis	No degree	Administrative
Vera Cristina Felício Conceição Rego	Undergraduate	Administrative, NA

Keywords / Research Areas

Continuous improvement, Human Resources, Accounts and Budget control, Project Management, Quality Management System, Legal.

Major Scientific Achievements

- Accounting: Compliance with month-end deadlines; Increased effectiveness and efficiency; Rationalization processes; Management software upgrade;

- Project Management: Process analysis carried out for the definition and implementation of transversal norms and procedures; Software upgrade and introduction of some enhancements; Execution of iMM projects including two institutional projects of the European Commission;
- Human Resources: Review of career regulations and performance appraisal; Justification for team expansion; Improving people management and streamlining processes (all to continue in 2017);
- Legal: Supported complex procedures of the CCP; Support to researchers in contracts and Start-ups;
- Quality: Successful audit, SWOT and annual satisfaction survey completed for iMM;
- Management Unit: Maintained the level of service and satisfaction across all iMM units. Supported researchers and iMM Board of Directors; Effective conflict resolution.

Startups

GenoMed

Major Interests / Objectives

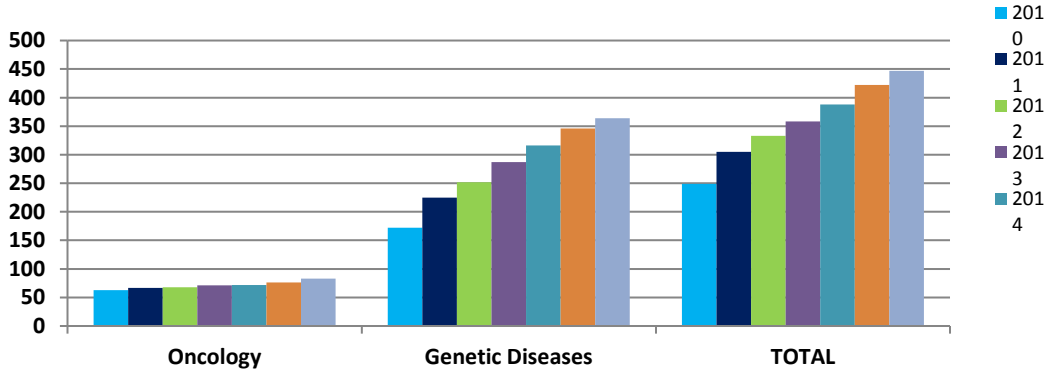
GenoMed is a spin-off company of IMM created in 2004. GenoMed's mission is to provide cutting-edge technology transfer services relevant for medical applications. Currently, GenoMed offers 447 different tests that are used in diagnosis, prognosis and therapeutic follow up. The main medical areas covered include Oncology, Hematology, Cardiology, Neurology, Gastroenterology/Hepatology, Nephrology, Endocrinology/Metabolic diseases, Obstetrics/Gynecology, Pneumology, Dermatology, Ophthalmology, Otorhinolaryngology, Pediatrics, Urology and Pharmacogenetics. Additionally, GenoMed provides parental and ancestry DNA testing.

Head

Teresa Porta Nova, MSc – Executive Director/Technical Director

Marta Zegre Amorin, MD – Clinical Director

Graphical Abstract



Team

Ana Coutinho	PhD	Area Manager, Technician
Ana Carla Sousa	Graduate	Technician
Ana Clemente	MSc	Business Developer
Ana Flores	Undergraduate	Management Assistant
André Janeiro	Graduate	Technician
Catarina Silveira	MSc	Technician, PhD Student BDE (Started PhD April 2016)
Cindy Castelão	MSc	Technician (Left September 2016)
Fernanda Barbosa	Undergraduate	Direction Assistant
Hélia Guerreiro	MSc	Technician
Inês Silva	MSc	Technician, Quality Manager
Joana Lopes	MSc	Technician (Started July 2016)
Joana Tavares	MSc	BioInformatic
Paula Borralho Nunes	MD/PhD	Clinical Pathologist (Started April 2016)
Paula Costa	Graduate	Technician
Rita Raposeiro	MSc	Technician (Started July 2016)
Sandra Matos	MSc	Technician (Started July 2016)
Sara Malveiro	Graduate	Technician
Sofia Fernandes	MSc	Technician (Started December 2016)
Sónia Matos	MSc	Area Manager, Technician
Sónia Santos	PhD	Area Manager, Technician
Vânia Martins	Graduate	Technician

Keywords / Research Areas

Molecular Diagnosis, Oncology, Genetics, Rare Diseases.

Major Scientific Achievements

In 2016 we focused in the implementation of the Next Generation Sequencing gene panels, designed together with the clinicians to fully answer the clinical and society needs. In total we implemented 32 new panels, with a total of 1227 genes. In the solid tumors department was implemented an innovative method for the identification of the mutation Thr790Met in the EGFR gene, with liquid biopsies (circulating tumoral DNA), allowing the patients a much less invasive procedure for the analysis. We also participated in several H2020 projects, taking place in the following years.

Increased number of tests available, in overall.

Ongoing Research Projects

Starting in 2016: Characteristics and frequency of IDH mutations in real world AML patients in Portugal. Celgene. Coordinator: Prof. Carmo-Fonseca. Participants: Sónia Matos.

2016: Diagnosis and monitoring of Chronic Myeloid Leukemia (CML) patients: Molecular and Cytogenetic analysis. Bristol-Myers Squibb. Coordinator: José Alves do Carmo and Lurdes Guerra. Participants: Sónia Santos and Sónia Matos.

2015 - 2016: ASXL1 mutations in patients with Primary Myelofibrosis Disease. Novartis. Coordinator: José Alves do Carmo, Lurdes Guerra and Blanca Polo. Participants: Sónia Matos.

2014 - 2016: Diagnosis and monitoring of Chronic Myeloid Leukemia (CML) patients: Molecular and Cytogenetic analysis. Bristol-Myers Squibb. Coordinator: Ricardo Costa. Participants: Sónia Santos and Sónia Matos.

2016/present: Diagnosis and monitoring of Chronic Myeloid Leukemia (CML) patients: Molecular and Cytogenetic analysis. Bristol-Myers Squibb.

2016/present: Two projects with Centro Hospitalar Lisboa Norte, EPE.

2016/present: One project with Hospital Garcia de Orta, Almada.

2016/present: Partnership with AstraZeneca.

2016/present: Projecto Laço: A caminho da cura.

Invited Lectures and Seminars

O Contributo da Citogenética e Biologia Molecular na Hematologia: Presente e Futuro. S. Santos. Reunião dos Hospitais Distritais, Beja, 01 Outubro 2016.

O próximo passo em frente no tratamento de doentes com cancro do pulmão. Diagnóstico molecular no CPNPC: Panorama Nacional – Participação no painel de Debate. Hotel Delfim Douro, 12 Março 2016.

Silveira C; Coutinho AM, Tavares J, Carmo-Fonseca M; NGS at GenoMed: because no one is standard; Workshop NGS; Soquímica; 11 May 2016.

Marta Amorim: Cross-talk between noncoding RNA and DNA methylation in FMR1-related disorders: towards a therapeutic strategic approach. Global Summit on Rare Diseases and Orphan Drugs, November, 15-1, Dubai, UAE.

Communications in International Conferences

Silveira C, Coutinho AM, Tavares J, Carmo-Fonseca M, Aguiar P; Genetic testing strategy of idiopathic metabolic disorders by NGS; Molecular Med Tri-Con, 6-11 March 2016, São Francisco, CA, EUA. (Poster).

Tavares J, Carmo-Fonseca M, Grosso AR; Identifying Human Genetic Variants in Next-Generation Sequencing Datasets; International Work-conference on Bioinformatics and Biomedical Engineering, 20-22 April 2016, Granada, Spain (Poster).

Coutinho AM, Tavares J, Carmo-Fonseca M; Mutation analysis of Hypertrophic Cardiomyopathy genes using Next-Generation Sequencing. European Society of Human Genetics Conference, 21-24 May 2016, Barcelona, Espanha. (Poster).

Communications in National Conferences

Mielofibrose Primária (MFP): Caracterização dos doentes tratados num único centro. Alves, D., Guerra L., Polo, B., Conde, I., Neves, M., Martins, H. Lopes, C., Valle, S., Matos, S., Santos, S., Lacerda, J., Martins, C., Lourenço, F., Moreno, R., Viriato, D., Antunes, M., Raposo, J. Reunião Anual da Sociedade Portuguesa de Hematologia, Espinho, Novembro 17-19, 2016. (Oral Presentation)

Pesquisa de Mutações no gene ASXL1 num grupo de doentes com mielofibrose primária de novo. Matos, S., Guerreiro, H., Matos, S.C., Santos, S., Polo, B., Martins, C., Guerra, L., Raposo, J. Reunião Anual da Sociedade Portuguesa de Hematologia, Espinho, Novembro 17-19, 2016. (Poster)

Bigotte Vieira M; Gameiro J; Jorge S; Silveira C; Coutinho AM; Tavares J; Nogueira E; Outerelo C; Pereira M; Neves F; Fortes MA; Guerra J; Gomes Da Costa A; Acidose Tubular Renal Tipo I – Nova mutação no gene ATP6V0A4; 30º Encontro Renal 2016, 13-16 April 2016, Vilamoura, Portugal. (Poster)

Gameiro J; Jorge S; Silveira C; Godinho I; Pereira M; Coutinho AM; Tavares J; Nogueira E; Fortes MA; Lopes JA; Gomes Da Costa A; Nefrites Intersticiais Crónicas Autossómicas Dominantes: do fenótipo ao genótipo – Experiência Clínica e proposta de um modelo de investigação diagnóstica; 30º Encontro Renal 2016, 13-16 April 2016, Vilamoura, Portugal. (Poster)

Coutinho AM, Tavares J, Carmo-Fonseca M; Detecção de mutações em genes de Cardiomiopatia Hipertrófica através de Next-Generation Sequencing; Congresso Português de Cardiologia 23-26 April 2016, Vilamoura, Portugal. (Poster)

D. Alves, L. Guerra, B. Polo, I. Conde, M. Neves, H. Martins, C. Lopes, S. Valle, S. Matos, S. Santos, J. Lacerda, C. Martins, F. Lourenço, R. Moreno, D. Viriato, M. Antunes, J. Raposo "Mielofibrose Primária (MFP): Caracterização dos Doentes Tratados num Único Centro". Reunião Anual da Sociedade Portuguesa de Hematologia, Espinho, November 17 – 19, 2016. (Oral Presentation)

Matos, S., Guerreiro, H., Matos, SC., Santos, S., Polo, B., Martins, C., Guerra, L., Raposo, J. "Pesquisa de mutações no gene ASXL1 num grupo de doentes com mielofibrose primária de novo", Reunião Anual da Sociedade Portuguesa de Hematologia, Espinho, November 17 – 19, 2016. (Poster)

Matos, S. and Carmo-Fonseca, M. "Formação de um Consórcio Multidisciplinar para Melhoramento do Diagnóstico Molecular da Leucemia Mielóide Aguda", Conferência Investigação Clínica – do Compromisso à Acção, Lisbon, November 9, 2016. (Poster)

Advanced Teaching

S. Santos. Genética aplicada à Hemato-Oncologia: citogenética e FISH. Curso de Pós-graduação em Medicina Laboratorial. Centro de Medicina Laboratorial Germano de Sousa, Lisboa, Portugal, 14 Maio 2016.

S. Santos e S. Matos. O contributo da citogenética e biologia molecular nas: Neoplasias mieloproliferativas, Síndromes Mielodisplásicos e Leucemias Mielóides Agudas. Curso de Especialização em Diagnóstico de Doenças Hemato-oncológicas (1ª edição). Hospital São Francisco Xavier, Lisboa, 20 Fevereiro 2016.

Matos, S. Curso de Pós-Graduação em Medicina Laboratorial "Genética Aplicada à Hemato-oncologia – Biologia Molecular", Instituto de Ciências da Saúde da Universidade Católica Portuguesa e o Centro de Medicina Laboratorial Germano de Sousa, Lisbon, May 14, 2016.

Matos, S. and Santos, S. Curso de Especialização em Doenças Hemato-oncológicas: O Contributo da Citogenética e Biologia Molecular nas Neoplasias Mieloproliferativas, Leucemias Mielóides e Síndromes Mielodisplásicas, Hospital de S. Francisco Xavier – Núcleo de Formação, Lisbon, February 20, 2016.

MSc Thesis Completed

Ciências Biomédicas, Faculdade de Ciências e Tecnologias, Universidade Nova de Lisboa "Do genótipo ao fenótipo na síndrome de Marfan: um estudo de associação numa amostra de Pacientes portugueses", MSc Hélia Guerreiro, with coordination of Dr. Ana Coutinho.

Lymphact S.A.

Major Interests / Objectives

Lymphact is a biopharmaceutical start-up focused on developing innovative personalized medical treatments. Our first product - DOT-Cells® - can target not only cancer and virus-infected cells, but also chemotherapy-resistant cancer stem cells and viral reservoirs, believed to cause disease recurrence. An improved anti-tumour function and the absence of severe associated side-effects are distinctive and unique features of our therapeutic approach.

Head

Diogo R. Anjos, MBA – CEO

Team

André Simões	PhD	Senior Scientist

Keywords / Research Areas

Cellular Therapies, Immunology, Oncology, Immunotherapies, Start-up, Gamma-Delta.

Major Achievements

In-house International Patent Application.

Recent Most Relevant Publications

Almeida AR, Correia DV, Fernandes-Platzgummer A, da Silva CL, da Silva MG, Anjos DR, Silva-Santos B6.; Delta One T Cells for Immunotherapy of Chronic Lymphocytic Leukemia: Clinical-Grade Expansion/Differentiation and Preclinical Proof of Concept.; Clin Cancer Res. 2016 Dec 1;22(23):5795-5804.

Ongoing Research Projects

Proprietary Research.

Patents / Prototypes

PCT IB2012/052545.

RoPlaVac

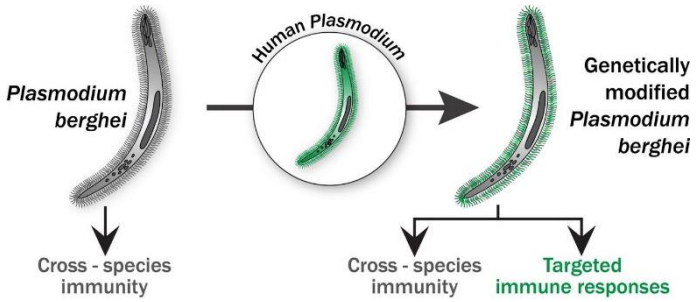
Major Interests / Objectives

RoPlaVac is a spin-off company of iMM Lisboa, created in 2014. The mission of RoPlaVac is to develop medical solutions against malaria, one of the most prevalent diseases worldwide. Malaria is caused by Plasmodium parasites, injected into their mammalian host as sporozoites, through the bite of an infected mosquito. Currently, RoPlaVac is engaged in three main endeavors: Vaccination: Development of a new whole-organism vaccine against malaria, based on the use of genetically modified rodent Plasmodium parasites. Plasmodium sporozoite cryopreservation: Development of an effective method to cryopreserve Plasmodium sporozoites for use in research and vaccination. In vitro Plasmodium sporozoite production: Development of a cell culture-based method to produce infective Plasmodium sporozoites for use in research and vaccination.

Head

Miguel Prudêncio, PhD, Instituto de Medicina Molecular, Group Leader – Prudêncio Lab

Graphical Abstract



Team

António M. Mendes	Post-Doc Fellowship, iMM Lisboa
Maria M. Mota	Group Leader, iMM Lisboa
Miguel Prudêncio	Group Leader, iMM Lisboa

Keywords / Research Areas

Malaria, Plasmodium, Vaccines, Liver Infection, Sporozoites, Cryopreservation.

Major Scientific Achievements

- With the support of Fundação Luso-Americana (FLAD), ROPLAVAC ensured the maintenance of its Intellectual Property over a new strategy for vaccination against malaria.
- The first vaccine candidate employing ROPLAVAC's patented technology will enter Phase I/IIa clinical trials in 2017.
- An effective cryopreservation method for Plasmodium sporozoites was optimized in collaboration with the company Smartfreez.
- Important progress has been made regarding the development of an in vitro system for production of Plasmodium sporozoites.

Selected Publications

M.D. Lewis, J. Behrends, C.S. Cunha, A.M. Mendes, F. Lasitschka, K. Heiss, T.W.A. Kooij, M. Prudêncio, F. Frischknecht and A.-K. Mueller (2015), "Chemical attenuation of Plasmodium in the liver modulates severe malaria disease progression", Journal of Immunology, 194, 4860-4870 (Journal IF: 4.9, Citations: 4).

M. Prudêncio, M.M. Mota, A.M. Mendes (2011) "A toolbox to study liver stage malaria", Trends Parasitol. 27, 565-574 (Journal IF: 5.3, Citations: 25).

Ongoing Research Projects

Prémio BES Inovação 2013.

Fundação Luso-Americana (FLAD).

Invited Lectures and Seminars

A. Mendes, "Roplavac – a rodent plasmodium platform for vaccination", GHTM Sessions, 26 April 2016, Instituto de Higiene e Medicina Tropical, Lisboa, Portugal.

Communications in International Conferences

M. Prudêncio, "A rodent Plasmodium platform for immunization against human malaria", Malaria Vaccines for the World 2016, 2-4 May 2016, Leiden, The Netherlands. (Oral Presentation)

Communications in National Conferences

M. Prudêncio, "A New Malaria Vaccine Enters Clinical Trials", IMM Pharmacology Series, Instituto de Medicina Molecular, 12 December 2016, Lisbon, Portugal.

M. Prudêncio, "Entering Phase I Clinical Trials With a New Malaria Vaccine Candidate", IMM Internal Seminar, Instituto de Medicina Molecular, 30 Novermber 2016, Lisbon, Portugal.

Patents / Prototypes

Genetically modified rodent Plasmodium parasites as platforms for a whole-organism malaria vaccine (WO 2013156949 A1, also published as CN104302313A, EP2838554A1, US20150071966).

Provisional application (Portugal) No. 20121000030819, filed 17.04.2012.

PCT international application PCT/IB2013/053050, submitted 17.04.2013, published 24.10.2013.

Patent applications filed in Angola, Australia, Brazil, China, India, Japan, Mozambique, South Africa, United States, and European Patent (Euro-PCT), November 2014.

Patent granted in India (07.08.2015), Mozambique (17.08.2015) and South Africa (23.12.2015).

MSc Thesis Completed

Raquel Azevedo - "Development of a new in vitro assay for screening malaria transmission blocking compounds" - Instituto de Higiene e Medicina Tropical, Lisboa, 2016, M. Prudêncio, António M. Mendes.

StemCell2MAX

Major Interests / Objectives

StemCell2MAX is a biotechnology spin-off from Instituto de Medicina Molecular in the field of regenerative medicine which markets a proprietary mix of neurotrophic factors that are able to stimulate the expansion of haematopoietic stem cells (HSCs), highly improving their utility in research and potential clinical use.

StemCell2MAX markets StemCell2MAXTM Mix for HSC expansion for research use only (RUO), addressing the market for blood stem cell research products with a growing sales track record. Now, following extensive proof of concept StemCell2MAX is preparing StemCell2MAXTM Med for the clinical market. The innovation is protected in the EU, USA and Japan for stem cell maintenance, expansion or transplantation, for both research and clinical use.

Head

Maria Brandão de Vasconcelos, MBA, StemCell2MAX, CEO & Co-founder

Filipa Matos Baptista, PhD, StemCell2MAX, CMO & Co-founder

Henrique Veiga - Fernandes, PhD, StemCell2MAX, Scientific Board Director & Co-founder, Group Leader & Board Director, iMM Lisboa

Francisco Ferreira dos Santos, PhD, StemCell2MAX, Chief Scientific Officer

Team

Henrique Veiga-Fernandes, PhD	Board Director, iMM Lisboa
Diogo Fonseca-Pereira, PhD	Post-doc Student, Harvard T.H. Chan School of Public Health
Francisco Ferreira dos Santos, PhD	Chief Scientific Officer StemCell2MAX
Silvia Arroz-Madeira, PhD Student	PhD Student, iMM Lisboa

Keywords / Research Areas

Biotechnology, cellular therapy, hematopoietic stem cells, cord blood expansion.

Major Scientific Achievements

January 2016 | StemCell2MAX participated in the International Workshop on Humanized Mice, Zurich.

May 2016 | StemCell2MAX appoints Francisco dos Santos as Chief Scientific Officer.

May 2016 | StemCell2MAX customer results published at the International Society Cell Therapy Conference, Singapore.

June 2016 | StemCell2MAX participated in the "Hematopoietic Stem Cells: From the Embryo to the Aging Organism" conference at Heidelberg.

October 2016 | Official classification from EMA for StemCell2MAX clinical product.

October 2016 | StemCell2MAX invited to "UKI Industry goes to Europe Tour".

November 2016 | StemCell2MAX meets with InnoStars and CLC Germany in Munich.

Communications in International Conferences

Benevides, P., Rebelo, R. & Arroz-Madeira, S. Expansion of cord blood cells using a mix of neurotrophic factors. Word Cord Blood Congress, London, United Kingdom, May 2016. (Poster)

Internationalisation

StemCell2MAX has commercialized StemCell2MAX MIX product for research-use-only purposes in Portugal, Spain, UK, France, Switzerland, Germany, Italy, Turkey, Canada and USA.

Prizes, Honours and Awards

March 2016 | Diogo Fonseca-Pereira awarded by Human Frontier Science Program.

May 2016 | StemCell2MAX wins SME Instrument Phase 1.

September 2016 | StemCell2MAX wins Innostars Go Europe Award.

Science and Society

Vasconcelos, M. B., Baptista, F.M. (2016) "Como é que a ciência pode sair do laboratório?" Lecturer at secondary school, Lisbon, Portugal.

TechnoPhage

Major Interests / Objectives

TechnoPhage is an innovative biopharmaceutical company committed to the R&D of new molecules - chemical and biological - in diverse therapeutic areas, such as infection, neuroscience, and immunology. TechnoPhage's strategy is based on developing new therapeutics in early phases of R&D, with a view to then enter into collaboration deals for pre-clinical and/or clinical development.

TechnoPhage is developing proprietary drug discovery products from discovery to clinical stage. The company has several patents in place and successfully developed one of its products into clinical Phase I. TechnoPhage is focused on increasing its portfolio of proprietary technologies and deriving products. This is achieved through an active R&D program and collaboration agreements with national and international pharmaceutical companies, research centers and universities across the US, Europe and Asia.

The company's laboratories are located at IMM, in Lisbon, under a scientific collaboration protocol signed by both entities. Close proximity to the renowned Santa Maria Hospital and the IMM help facilitate the creation of multidisciplinary teams essential to the process of translational medicine. Furthermore, this proximity helps to facilitate access to the necessary equipment and talent required to develop full product solutions, including direct collaboration with leading experts from the clinical fields covering the therapeutic products under development.

Head

Miguel Garcia, PharmD, PhD, MBA, TechnoPhage, SA

Team

Ália Amada	MSc Legal	IP and Legal Manager
Ana Patricia Cebola Cachucho	BSc or Similar	MSc Student
Ana Raquel Martins Barbosa	MSc	Scientist
Ana Rolo	BSc	Executive Assistant
Catarina Rodrigues Amorim	BSc or Similar	Trainee
Clara Isabel Rodrigues Leandro	MSc	Senior Scientist
Diana Sofia Chapela Duarte Pires	MSc	PhD Student
Joana Henriques Ministro	MSc	PhD Student
João Miguel Sotenho Oliveira	PharmD	Innovation Manager

Miguel Ângelo da Costa Garcia	PharmD, PhD, MBA	CEO
Nádia Cristina Gameiro Mendes	BSc or Similar	MSc Student
Patricia Alexandra Norte Ferreira Pinto	BSc or Similar	Technician
Pedro David Pereira Mendes Fontes	BSc or Similar	MSc Student
Rita Leitão Landeiro Vaz	MSc	PhD Student
Sara Cristina Mauricio de Sousa	PhD	Senior Scientist
Sofia Volker Corte-Real	PhD	R&D Director
Sónia Almeida	BSc Finances	Financial Director
Soraia Rafaela Santiago de Oliveira	PhD	Senior Scientist

Keywords // Research Areas

Bacteriophage for antibiotic resistance bacteria; Small domain Antibodies for barrier crossing; Zebrafish models for in vivo phenotype screening.

Major Scientific Achievements

Based on 10 years of R&D, TechnoPhage is now in a position to bring its products to commercial stage, and is entering a new growth phase, with its first authorization to enter clinical trials (IND) cleared by the FDA for the development of bacteriophages for the treatment of chronic ulcers (TP-102).

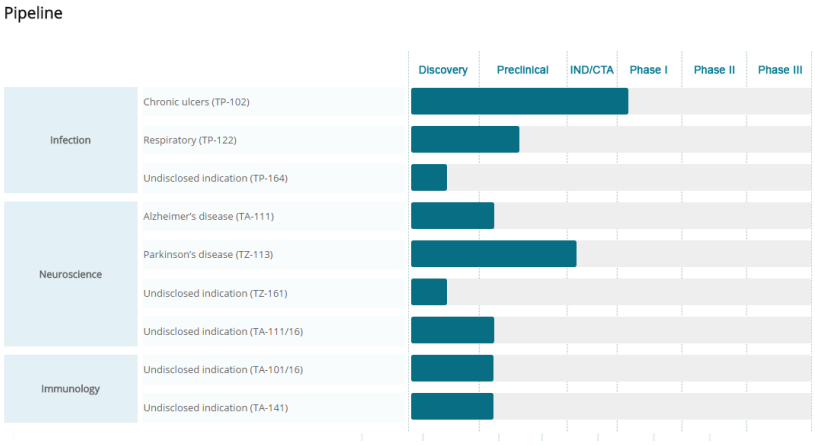
The company expects new CTAs in 2017/2018, to bring other products also into clinical trials. In 2016 Technophage won one more National Grant as well as a new PhD student.

TechnoPhage, SA was awarded as a National SME Leader by IAPMEI – Public Agency for Competitiveness and Innovation.

TechnoPhage, SA is very delighted to be publicly recognized by the performance of its business strategy and by its contribution to the national economy.

Ongoing Research Projects

Focusing in three main therapeutics areas- infection, neuroscience and immunology we have nine ongoing projects.



Publications in Peer Review Journals

Antibody Approaches to Treat Brain Diseases. Vera Neves,1, * FredericoAires-da-Silva,2, * Sofia Corte-Real,3 and Miguel A. R. B. Castanho. Trends in Biotechnology, January 2016, Vol. 34, No. 1.

Susceptibility patterns of Staphylococcus aureus biofilms in diabetic foot infections. Carla Mottola1*, Carina S. Matias1, João J. Mendes2, José Melo-Cristino3, Luís Tavares1, Patrícia Cavaco-Silva4,5 and Manuela Oliveira. Microbiology (2016) 16:119.

Molecular typing, virulence traits and antimicrobial resistance of diabetic foot staphylococci. Carla Mottola1*, Teresa Semedo-Lemsaddek2, João J. Mendes3, José Melo-Cristino4, Luís Tavares1, Patrícia Cavaco-Silva5,6 and Manuela Oliveira. Journal of Biomedical Science (2016) 23:33.

Communications in International Conferences

Oral Presentation at European Wound Management Association 2016 Conference - Development of TP-102 product.

Oral Presentation at ITN Workshop - Bioimaging in drug development.

Patents // Prototypes

Several patents in National Phases.