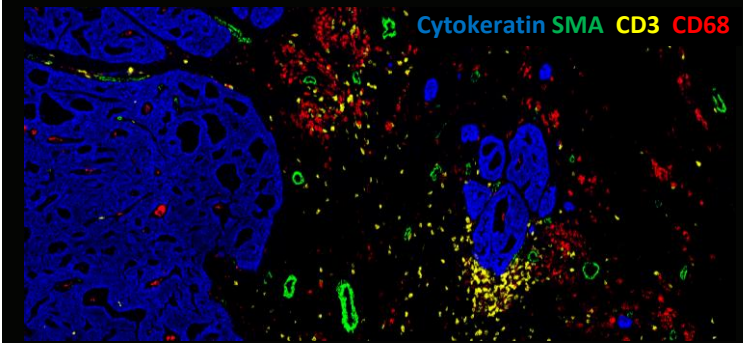
iMM-Laço Hub is recruiting a Postdoctoral Researcher

The iMM-Laço Hub, a structure dedicated to the study of breast cancer, opens a call to hire a Postdoctoral Researcher to join the project "***Multi-Dimensional Cartography of the Breast Cancer Micro-Environment***".

We hypothesize that an ***Onco-Immuno-Microbial axis*** plays critical roles in breast cancer progression, response to therapy and even relapse. However, much is still to be understood about this three-dimensional crosstalk that holds some therapeutic promises. Thus, our goal is to create an unprecedented map of human breast cancer that will encompass the **genetic and clonal distribution of the tumour cells** (whole genome/exome sequencing), the **specific gene expression profile** and the **localisation and phenotype of immune/stromal cells** (RNA-seq and multiplexed imaging), and the **local microbiota** (16S rRNA sequencing). This multi-omics landscape will be integrated and associated with clinical data using dimensionality reduction approaches and machine learning to unravel the major parameters and pathways that can be targeted to limit cancer progression and to determine the clinical course of the patients.



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The successful candidate must be a **highly motivated**, **pro-active**, **independent**, **gregarious** and **versatile** individual to join our multi-disciplinary team. He/She should be passionate about iMM-Laço Hub's missions of bringing hope to the women who are diagnosed with breast cancer.

THE PRINCIPAL ACTIVITIES INCLUDE:

- Manipulating biological human samples
- Preparing the samples for whole exome sequencing, 16SrRNA gene and RNA-sequencing
- Performing multiplex imaging with microscopy and the CODEX technology
- Participating in the conception of projects and in the writing of associated grant applications of the iMM-Laço Hub
- Participating in the integration and interpretation of the complex data
- Collaborating with and/or co-supervising computational biology MSc and PhD students
- Reporting results to a multidisciplinary team and jointly interpreting them
- Participating in the outreach and science communication activities of the iMM-Laço Hub

THE REQUIRED SKILLS AND QUALIFICATIONS:

- PhD in cancer biology, immuno-oncology, immunology will be highly valued
- Experience in whole genome/exome sequencing, 16SrRNA gene or RNA-sequencing
- Experience in microscopy, ideally in multiplex imaging
- High organization skills and strong work ethics (care, rigor, consistency, intellectual honesty)
- Aptitude to write and lead projects
- Willingness to work independently to design and perform experiments
- Proficiency in English, spoken and written, and excellent communication skills

Ref application: IMM/CT/44-2022
http://imm.medicina.ulisboa.pt/jobs

HOW TO APPLY:

Please submit your detailed CV, motivation letter, PhD degree certificate and contacts of 3 references, from 11th of April 2022 until 30th of May 2022 through iMM website, by clicking in the "**Apply**" button below the position job ad.

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The success of this project lies on a strong multidisciplinary team. The postdoc will be integrated in a collaborative team constituted by **immunologist** and **immuno-oncologist** (Dr Karine Serre[1–7]) with **clinician-scientists** specialised in breast oncology (Prof Luis Costa[8,9], Dr Rita Teixeira Sousa[10]), experts in **cancer-induced angiogenesis** (Dr Sérgio Dias[11]), in **computational biology** (Dr Nuno Morais[8,12]), and in **microbiology** (Prof Isabel Sá-Correia[13]).

References:

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4. Machado, H. *et al.* Trypanosoma brucei triggers a broad immune response in the adipose tissue. *PLoS Pathog.* **17,** 1–26 (2021).
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6. Mensurado, S. *et al.* Tumor-associated neutrophils suppress pro-tumoral IL-17+ γδ T cells 1 through induction of oxidative stress. *PLoS Biol* **16,** 1–21 (2018).
7. Kubo, H., Mensurado, S., Goncalves-Sousa, N., Serre, K. & Silva-Santos, B. Primary tumors limit metastasis formation through induction of IL15-mediated crosstalk between patrolling monocytes and NK cells. *Cancer Immunol. Res.* 1–10 (2017).
8. Gomes, I. *et al.* Expression of receptor activator of NFkB (RANK) drives stemness and resistance to therapy in ER+HER2- breast cancer. *Oncotarget* **11,** 1714–1728 (2020).
9. Alpuim Costa, D. *et al.* Human Microbiota and Breast Cancer—Is There Any Relevant Link?—A Literature Review and New Horizons Toward Personalised Medicine. *Front. Microbiol.* **12,** (2021).
10. Luz, P. *et al.* Tumor-infiltrating lymphocytes in early breast cancer: an exploratory analysis focused on HER2+ subtype in Portuguese patients. *JBUON* Accepted**,** (2022).
11. Gregório, A. C. *et al.* Therapeutic Implications of the Molecular and Immune Landscape of Triple-Negative Breast Cancer. *Pathol. Oncol. Res.* **24,** 701–716 (2018).
12. De Almeida, B. P., Vieira, A. F., Paredes, J., Bettencourt-Dias, M. & Barbosa-Morais, N. L. Pan-cancer association of a centrosome amplification gene expression signature with genomic alterations and clinical outcome. *PLoS Comput. Biol.* **15,** 1–31 (2019).
13. Hassan, A. A., dos Santos, S. C., Cooper, V. S. & Sá-Correia, I. Comparative Evolutionary Patterns of Burkholderia cenocepacia and B. multivorans During Chronic Co-infection of a Cystic Fibrosis Patient Lung. *Front. Microbiol.* **11,** (2020).

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WHAT IMM OFFERS:

iMM will offer outstanding working conditions, including an unfixed-term full-time contract, starting predictably in July 2022, and the possibility to work in the interface between hospital and biomedical institute on clinical and basic research. iMM will also offer access to state-of-the-art infrastructures, namely Biobank and Imaging Units, and assistance from partnering computational biologists, as well as full support for individual postdoctoral and career development fellowship applications by a dedicated Pre-Award Unit.

EVALUATION CRITERIA:

Applications will be evaluated by Dr. Sérgio Dias, Dr. Nuno Morais and Dr. Karine Serre in accordance with the following method:

- 1st Phase: Curricular evaluation 45%; Motivation Letter 20%
- 2nd Phase: Interview 35%

WORKING CONDITIONS:

The employment contract has a predicted initial duration of 12 months (possibly extendable to a maximum of 48 months). Gross monthly salary is **2.153,94€**. The indicated amount will be subject to the mandatory taxes accordingly to Portuguese Labour Law.

NOTIFICATION OF RESULTS:

The results will be published in iMM website http://imm.medicina.ulisboa.pt/en/

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