

CALL FOR A RESEARCH FELLOWSHIP
Fellowship Reference IMM/BI/9-2023

Instituto de Medicina Molecular João Lobo Antunes (iMM) opens a call for one research fellowship under the project “*PTDC/BTM-MAT/2472/2021 - Towards the development of a nanoparticle for early diagnosis of Alzheimer’s Disease, based on the reversible translocation of the blood brain barrier*” with the funding support from Fundação para a Ciência e a Tecnologia, IP.P. / MCTES through national funds (PIDDAC).

Scientific Area(s) Biochemistry/ Medical Biotechnology/ Biomaterials

Fellowship recipients / Admission requirements: Any National, foreign and stateless candidate(s) that fulfill the necessary conditions to be enrolled in a non-academic degree course (in an area related to the work plan) can apply.

Are considered “Non-academic degree courses” the ones referred in [paragraph e\) of number 3 of article 4 of Decree-Law nr 74/2006, from 24th March](#), in its current version, as long as they are developed in association and cooperation between a higher education institution and at least one R&D Unit in accordance with the provisions of paragraph e) of Article 3 of FCT Fellowship Regulation.

Applicants must hold the following requirements:

- MSc degree holder in the field of nanotechnology, biochemistry or related areas;
- *Expertise in nanoparticle formulation and functionalization with biomolecules, such as peptides, proteins, or probes;*
- *Expertise in cell culture, such as toxicity assays;*
- *Knowledge in microfluidics, complex cell models*
- *Experience in fluorescence microscopy;*
- *Expertise in biophysical techniques, such as dynamic light scattering, fluorescent spectroscopy;*
- *Knowledge of English written and spoken.*

The international experience of the candidates, although not a determining criterion for selection, will be valued.

Work Plan and Objectives: Alzheimer’s disease (AD) is a fatal neurodegenerative disease and one of the biggest healthcare challenges of the 21st century. One of the greatest challenges is the early diagnosis of the disease, to prevent cognitive decline. The main objectives of this work is to prepare a nanoparticle (NP) capable of detecting AD in early stages of the disease. NP will be functionalized with a peptide that allows translocation of the blood-brain barrier (BBB), and an antibody fragment that targets beta amyloid aggregates, associated to AD. For this part of the project is necessary to develop a complex model of BBB, using microfluidic devices. After optimization of this microfluidic model, or organ-on-a-chip, a detailed study of BBB translocation and interaction with cells of neurovascular unit will be carried out, using confocal microscopy.

Legislation and Applicable Regulation: Estatuto do Bolseiro de Investigação approved by Law nr 40/2004, from 18th August in its current form (altered by Decree Law nr 123/2019, 28th August) and current Regulation of Fellowships of Fundação para a Ciência e a Tecnologia <https://www.fct.pt/apoios/bolsas/regulamento.phtml.pt> (approved by Regulation nr 950/2019, from 16th December).

Predicted start date, duration and renewal conditions: The fellowship contract is predicted to start in April 2023, for a period of 6 (six) months on an exclusive basis, eventually renewable until the maximum stipulated in applicable regulations, not exceeding the eligibility period of the project.

Work place and Scientific orientation: The research activities will be developed at Physical Biochemistry of Drugs & Targets Lab, lead by Professor Miguel Castanho at IMM, under the supervision of Doctor Vera Neves.

Non-discrimination and equal access policy: IMM undertakes to ensure compliance with the principles of non-discrimination and equality and to that extent, provides that no candidate can be privileged, benefited, harmed or deprived of any right or exempted from any duty due in particular ancestry, age, gender, sexual orientation, marital status, family status, economic status, education, social origin or condition, genetic heritage, reduced working capacity, disability, chronic disease, nationality, ethnic origin or race, place of origin, language, religion, political or ideological convictions and trade union membership.

International environment and experience: Diversity is a fundamental aspect of the essence of IMM, where researchers and non-researchers of different nationalities, backgrounds and areas of study work together, promoting the exchange of experiences and interactions, contributing to the personal and professional development of each person and to the existence of an international, inclusive and stimulating environment.

Research Fellows Support Centre: The Research Fellows Support Centre works on Tuesdays and Thursdays from 9:00AM to 6:00PM at Human Resources Office.

Fellowship financial conditions: The fellow will benefit from a monthly stipend in the amount of €1.199,64 in accordance with the defined in FCT table <https://www.fct.pt/apoios/bolsas/valores.phtml.pt>. The amount will be paid by wire transfer at the end of each month. The fellow will also benefit from a personal accident insurance to execute the proposed research activities as well as the right to Social Security through Voluntary Social Insurance regimen, if wanted, under the terms of Código dos Regimes Contributivos do Sistema Previdencial de Segurança Social, and the contributions costs will be supported by the research project.

Application documents: Motivation Letter; - Detailed CV; - MSc certificate; - Contacts of 2 references; - Candidate's declaration of honor indicating previous fellowships, if any, its typology and duration.

The non-compliance with these requirements determines the immediate rejection of the application.
In case the applicant does not have yet the required degree certificate, a declaration of honor stating the conclusion of the necessary qualifications for the purposes of this process will be accepted and must be sent by the end date of the call.

Jury evaluation and selection: Vera Neves (IMM), Miguel Castanho (FMUL, IMM) e Ana Salomé Veiga (FMUL, IMM).

Selection methods:

Curriculum analysis (70%), taking into consideration the following criteria:

- 1) Expertise in the field of nanotechnology/biochemistry, nanoparticle formulation essential (35%);
- 2) Expertise cells culture (20%);
- 3) Knowledge in biophysical techniques, especially fluorescence microscopy (15%).

Motivation letter (30%).

Deadlines and application process: The call will be open from 24th of March until 06th of April 2023.

Applications should be submitted through IMM website, by clicking in the “Apply” button below the position job ad. *The non-compliance with these requirements determines the immediate rejection of the application.*

Notification of results: The evaluation results will be announced within 90 days after the termination of the applications submission deadline, by writing and publishing a jury meeting minute at IMM website at <https://imm.medicina.ulisboa.pt/jobs/#results> with all process of recruitment, evaluation and selection including a list of all excluded and admitted candidates and for these last ones, their classification. All admitted candidates will be notified by email.

Preliminary Hearing and Final Decision Deadline: After notification, all candidates have 10 working days to respond. Panel’s final decisions are pronounced within a period of 90 days, from application deadline.

Selection reserve list: N/A.

Fellowship contracting: The Fellowship is granted through the signature of a [contract](#) between IMM and the selected fellow and after the fellow send the following mandatory documents: copy of identification document (in case of non-European citizens is mandatory the work visa / valid resident permit), document proving the required academic degree and the document proving the enrollment in a non-academic degree course (in an area related to the work plan).

Lisbon, March 23rd 2023

The Executive Director of IMM
Professor Maria Manuel Dias da Mota