

Research Studentships (for students of a course that does not award an academic degree)

Applications are open for 1 Research Studentship(s), within the framework of project “A molecular and nano approach to target the RANK-TRAF6 interface for bone metastases treatment” - C2TN, PTDC/QUI-OUT/3854/2021, financed by national funds through FCT/MCTES (PIDDAC), under the following conditions::

Scientific Area: Chemistry and Chemical Engineering

Admission Requirements: *to hold a master degree and be enrolled at a course that does not award an academic degree and it is integrated in the educational project of a higher education institution, performed in association or cooperation with one or several R&D units, at the date of signing the contract;*

To hold a Master degree in Chemistry (or Chemical Engineering), Biochemistry, Pharmaceutical Sciences, Pharmaceutical Engineering or related areas.

Workplan: Disruption of the intracellular RANK/TRAF6 interaction leads to a reduction in osteoclastogenesis and tumour cell migration. In this context, it was proposed to develop bone-seeking peptides to inhibit this interaction and reduce osteoclastogenesis and cell migration/invasion in bone metastases. The multifunctional peptides contain a bone-binding unit (BP), a cathepsin K-sensitive spacer, a penetrating sequence and another with affinity for TRAF6. After accumulating on the bone surface, cathepsin K cleaves the spacer and releases the peptides containing only the penetrating sequence and the TRAF6 binding peptide. These will then be internalised by the cells, leading to the inhibition of osteoclastogenesis and a reduction in the metastatic potential of tumour cells. The work proposed herein includes the synthesis and characterisation of some peptides and also the preparation of gold nanoparticles (AuNPs) functionalised with BP, and vectorised with a peptide sequence containing the penetrating unit and the unit with affinity for TRAF6. The influence of peptides and AuNPs on osteoclastogenesis, cell viability and the metastatic potential of tumour cells will be studied. Efficacy and biodistribution studies will also be carried out in appropriate animal models in accordance with the general objectives described for the project.

Legislation and Regulations: Statute of Scientific Research Fellow, approved by Law nr. 40/2004, of August 18, as worded by Decree-Law nr. 123/2019, of August 28; FCT Regulation for Research Studentships and Fellowships, available on <https://www.fct.pt/apoios/bolsas/docs/RegulamentoBolsasFCT2019.pdf> and <https://dre.pt/application/file/a/127230968> .

Workplace: The work will be developed at Centro de Ciências e Tecnologias Nucleares of Instituto Superior Técnico, Universidade de Lisboa, under the scientific supervision of Dr. João Domingos Galamba Correia.

Duration: The research fellowship(s) will have the duration of 6 months. It's expected to begin in July, 2024, and may be eventually renewed up to the maximum of 12 months, including the duration of the initial contract.

Monthly maintenance allowance: According to the values for Research Fellowships awarded by FCT in Portugal (https://www.fct.pt/wp-content/uploads/2024/02/Tabela-de-Valores-SMM_atualizacao-2024.pdf), the amount of the monthly maintenance allowance is € 1259,64, being the payment method an option of the Fellow by Wire Transfer/Check.

Selection methods: The selection methods will be the following: The selection methods will be the following: *relevance of the academic degree and respective classification; research experience relevant to the project;*



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interview (evaluation of the experience and motivation of the candidate(s)) and motivation letter, with the respective weight of 50%, 30%, 10% e 10%.

Composition of the selection Jury: João Domingos Galamba Correia (Full Researcher), Maria Paula Cabral Campelo (Assistant Researcher) e Fernanda Marujo Marques (Associate Researcher).

Announcement/ notification of the results: The final evaluation results will be communicated to all applicants by email.

Application deadline and formalization: The call is open from June 26 until July 9, 2024.

It is mandatory to formalize applications with the submission of the following documents: i) B1 Form – Fellowship application (<https://ist-id.pt/concursos/bolsas/>); ii) *Curriculum Vitae*; iii) academic degree certificate, where applicable; iv) proof of enrollment at a course that does not award an academic degree, at the date of signing the contract; v) motivation letter; vi) declaration on honour that the applicant does not exceed with this contract an accumulated period of two years in this type of studentship, continuously or with interruptions, at the date of signing the contract.

Applications must be submitted to the email: jgalamba@ctn.tecnico.ulisboa.pt.



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