

**IBMC - Instituto de Biologia Molecular e Celular**

**Research fellowship (f/m)**

**Internal Code:** Norte2020NEURO79

**Project:** NORTE-01-0145-FEDER-000008, Porto Neurosciences and Neurologic Disease Research at i3S

**Title:** Characterisation of the roles of PS3 integrin in *Drosophila* axonal targeting

IBMC/i3S is opening **1 (one) Research Fellowship (Master)** to join its Research Program in Neurosciences.

**Group and PI:** Cell Growth and Differentiation, IBMC-i3S under the supervision of Dr Paulo Pereira.

**Candidate profile:** Master or integrated Master degree in Biology or related disciplines with an average mark\* of 14 or higher. Demonstrated research experience and high motivation to develop a research career are required. Preference will be given to candidates with experience in Molecular and Cellular Biology or *Drosophila melanogaster* techniques.

\*according to the Portuguese classification system or equivalent international grades.

**Selection:** Candidates will be ranked according to their CV/letter of motivation (weight of 85%), and recommendation letters (weight of 15%) using a scale ranging from 0 to 20. Candidates may be invited for an interview by the Selection Committee, evaluated using a scale ranging from 0 to 20. If interviews are made, final candidate ranking will include curricular/letters evaluation (weight of 75%) and outcome of interview (weight of 25%).

**Work Plan:**

Integrins are cellular receptor proteins important for cellular adhesion, migration and also signal transduction. Integrins and their ligands play key roles in nervous system development, as they regulate neural precursor cell migration, proliferation and survival, and glia myelination. Integrins are a family of type I transmembrane proteins that connect the cell with extracellular matrix (ECM) proteins, such as collagen and laminins, or to cellular receptors. They are formed by heterodimers of one  $\alpha$  and one  $\beta$  subunit that specify the ligand to which integrin binds.

This project aims to further understand the role of different integrin heterodimers in photoreceptors-glia interactions using *Drosophila*. We have previously shown that PS2 and PS3 integrin heterodimers have different and specific functions in the development of retinal glia, with  $\alpha$ PS2 being essential for retinal glia migration from the brain into the eye disc. Surprisingly  $\alpha$ PS3 is not required for retinal glia migration, but together with Talin, it functions in glial cells to allow photoreceptor axons (R-axons) to target to the optic stalk. The main aim of this project will be the characterisation of the role of  $\alpha$ PS3 in axon-glia interactions.

References:

- 1 - Tavares L, Correia A, Santos MA, Relvas JB and Pereira PS. (2017) dMyc is required in retinal progenitors to prevent JNK-mediated retinal glial activation. PLoS Genet. 13(3):e1006647.
- 2 - Tavares T, Pereira E, Correia A, Santos M, Amaral N, Martins T, Relvas JB and Pereira PS (2015) Drosophila PS2 and PS3 integrins play distinct roles in retinal photoreceptors-glia interactions. GLIA 63(7):1155-65.

The Research Fellowship will be for **8 months**, not renewable, and it is expected to start in **May 2019**.

The fellowship amount is 989.70 euros, paid by bank transfer, preferentially.  
(<http://alfa.fct.mctes.pt/apoios/bolsas/valores>)

Fellowships are regulated by current laws relating to the Statute of Science Research Fellows, namely Law 40/2004 of August 18, amended and republished by Decree-Law No. 202/2012 of 27 August and the Regulation of Scientific Research Studentships of IBMC approved by Fundação para a Ciência e Tecnologia  
(<http://www.fct.pt/apoios/bolsas/docs/RegulamentoBolsasFCT2015.pdf>)

Selection Committee:

Paulo Pereira (PhD), Renata Freitas (PhD), Carla Lopes (PhD),

Applications are open from 3<sup>rd</sup> to 15 April 2019.

To apply for the Research Fellowship interested candidates must submit the following documents

- a) Complete CV; b) Letter of Motivation; c) 2 recommendation letters or the contacts of 1 or 2 persons who can give references and d) Master Certificate, *via* the online application system:

<http://www.ibmc.up.pt/gestaocandidaturas/index.php?codigo=Norte2020NEURO79>

The ranking list of candidates will be published at IBMC website, and the selected candidate will be notified by email.