IBMC - Instituto de Biologia Molecular e Celular

Research fellowship (f/m)

Internal Code: Norte2020NEURO04

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

Title: Pre- and postsynaptic interactions between afferents supplying lamina I projection neurons in the lumbar and cervical spinal cord: impact for somatic pain and migraine

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

We are looking for a Fellow Master Degree in Microbiology, Biology, Biochemistry or related fields with experience and full autonomy in working in Molecular and Cellular Microbiology, Microscopy, Cytometry, and with a license to work with animals. English language, both spoken and written, and good inter-personal relationships in the context of a multidisciplinary research team are essential attributes. Preference will be given to candidates with these characteristics.

Group and PI: Neuronal Networks (B. Safronov)

Work Plan:
Lack of knowledge about the pre- and postsynaptic interactions between afferents supplying lamina I neurons reflects limitations of the methods used so far. It was not possible to record from identified neurons in the isolated spinal cord and trigeminocervical complex with preserved afferent pathways. During the last years our laboratory established several new approaches allowing solution of this problem. We developed methods of: • imaging and patch-clamp recording from lamina I neurons in the isolated spinal cord and brainstem, • identifying mono- and polysynaptic inputs to lamina I neurons from several dorsal roots or peripheral nerves, • studying the afferent-driven presynaptic inhibition of C fiber inputs to lamina I neurons, • recording the trigeminal nerve inputs to cervical neurons.

In this project, projection neurons in the lumbar and cervical cord will be labelled by injecting a retrograde tracer into their supraspinal projection areas. Task 1, we shall study low-threshold Aβ/Aδ-fiber-driven presynaptic inhibition of nociceptive Aδ and C fiber inputs to projection neurons in the lumbar cord. Task 2, in the isolated trigeminocervical complex we shall characterize cervical neurons receiving inputs from the trigeminal and spinal nerves. Task 3, the presynaptic interactions between the trigeminal and spinal nerve inputs to the cervical lamina I neurons will be studied.

The work will be developed at Instituto de Investigação e Inovação em Saúde - i3S, Porto, Portugal.

The Fellowship will be for 36 months, not-renewable, and it is expected to start in May 1st 2016.

The fellowship amount is 980 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:
Boris Safronov, PhD
Nikolai Lukoyanov, PhD
Liliana Luz, PhD

Applications are open from March 15th to March 31st, 2016.

To apply for the Fellowship interested candidates must hold a Master degree and submit the following documents a) Complete CV; b) Letter of Motivation; and c) Referee Letter, *via* the online application
system: http://www.ibmc.up.pt/gestaocandidaturas/index.php?codigo=Norte2020NEURO04

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