POSTDOCTORAL CANDIDATE INTERESTED IN APPLYING FOR A FELLOW IN NEUROSCIENCES

Neuroscience. Neurodegenerative diseases

Are you a postdoctoral researcher thinking about your next career move? Institute of Neurosciences of the University of Barcelona allows you to work in a first class research environment.

Group and project information

Applicants will be integrated into the research group “Neurodegeneration and synaptic dysfunction in Huntington’s disease”. IP: Dr. Silvia Gines Padrós

Research Group and Project

Dr. Silvia Gines’s research interest focuses in understanding the molecular mechanisms underlying Huntington’s disease (HD) pathology. HD is an autosomal-dominant inherited neurodegenerative disorder, classically characterized by progressive motor deficits and commonly associated to striatal neurodegeneration. However, decades of research have long-established that psychiatric alterations and cognitive function declines in the pre-manifest and early stages of HD, years before motor symptoms appear. Therefore, the “perfect” therapeutic strategy will be one in which by targeting a single molecule or a specific pathway, early memory and emotional disturbances could be ameliorated while motor progression slowed or prevented.

Our proposal call into the broadly assumed idea that cells, in particular neurons, recycle and degrade their own old or damaged organelles. By using a combination of advanced microscopy and molecular/cellular and biochemical techniques we aim to clarify whether astrocytes may act as regulators of neuronal homeostasis in HD not only by modulation of neurotransmitter release but also by taking up and degrade “unhealthy” neuronal mitochondria. Previous data from our group have revealed defects in mitochondrial dynamics in different HD mouse models showing striatal neurons an increase in fragmented mitochondria. Manipulation of fission events by means of pharmacological treatments have provided beneficial effects in several neurodegenerative disorders but may disrupt the critical equilibrium between fusion and fission events. In this scenario, recent studies have demonstrated an important contribution of astrocytes on neuronal mitochondria quality control through a mechanism that has been referred as transmitophagy. By this transfer of mitochondria between astrocytes and neurons it has been proposed that neuronal damage caused by accumulation of dysfunctional mitochondria will be mitigated. Thus, defective neuronal mitochondria will be transferred to astrocytes while functional astrocytic mitochondria to damaged neurons as a neuroprotective mechanism.

In this new study, we propose that striatal neuronal function in HD will be perturbed not only by a neuronal autonomous mechanisms but also by a deficient neuro-glia crosstalk that will involve (1) defective mitochondrial dynamics (distribution, trafficking, fission/fusion events) in astrocytes and (2) deficient transfer of healthy/altered mitochondria between striatal neurons and astrocytes.
Requirements for candidates:

Skills/Qualifications:
We are looking for an enthusiastic candidate, who wants to work in a young and efficient team to address new and challenging aspects of neurodegenerative disease. The candidate must have a background in Cellular and Molecular Biology, Biochemistry and Neuroscience. He/she is expected to hold a Master’s degree in Biomedical Science or similar.

Competencies:
Communication skills, project planning and delivery, career management, analytical and critical thinking, ethics and integrity, leadership, information seeking and management.

Languages:
English: Excellent

How to apply
Please submit your CV and a motivation letter to: Silvia Gines Padros (silviagines@ub.edu); Reference: Postdoc fellow)

Deadline: 15 January 2020