



PREDOCTORAL RESEARCHER POSITION GRANT

The Hospital del Mar Research Institute is the research center of the Barcelona Mar Health Park Consortium and a member of the Barcelona Biomedical Research Park (PRBB). It provides an exceptional framework for translational research and offers state-of-the-art technological platforms (flow cytometry, animal facility, microscopy, etc.) as well as close collaboration with the Hospital del Mar.

POSITION

Predoctoral researcher position as a part of the research group Neurogenomics with a predoctoral contract supported by the grant reference PID2022-140137NB-I00, funded by MCIN/AEI/10.13039/501100011033 and the European Social Fund (FSE).

OFFER

- Predoctoral researcher position.
- Predoctoral researcher employment contract governed by Article 21 of Law 14/2021, of June 1, on Science, Technology, and Innovation, and Royal Decree 103/2019, of March 1, on the Statute of Research Personnel in Training.
- Full-time contract.
- Salary according to the provisions of Royal Decree 103/2019, of March 1, on the Statute of Research Personnel in Training, paid in 12 instalments.
- Incorporation within 3 months from the definitive resolution.

CANDIDATE REQUIREMENTS

- ✓ Degree in Biology, Biotechnology or Bioinformatics



- ✓ Training in programming, neuroscience and genomics
- ✓ At the time of hiring, the candidate must provide proof of admission to a doctoral program.

Once the candidate has enrolled in the doctoral program, they will need to submit a copy of the formalized enrollment to the contracting institution.

SELECTION CRITERIA

- 1) Academic and/or scientific-technical trajectory of the candidate. (Up to 50 points).
 - 1.a) Scientific-technical contributions: The academic record and other curricular merits of the candidate will be evaluated, as well as their suitability for the tasks to be carried out based on their training and professional experience. (Up to 45 points).
 - 1.b) Mobility and internationalization: The relevance and impact of the candidate's stays in national and international research centers and/or the industrial sector will be assessed, considering the prestige of the hosting entity and the activities carried out there. (Up to 5 points).
- 2) Suitability of the candidate for the research activities to be carried out. The candidate's suitability for the project or research activities will be evaluated based on their previous training and experience. This will include the added value that the completion of the project will bring to their research career, as well as the contribution to the institution and research group. (Up to 50 points).

THE PROJECT

Title: Understanding the evolution of gene regulatory networks controlled by bHLH transcription factors to identify the genetic basis of human derived traits in neurodevelopment

The convergence of recent technological advances in the fields of cerebral organoids and single-cell genomics enables a better investigation of the genetic variants responsible for human brain specializations and disorders compared to chimpanzees. Single-cell analysis has improved our



understanding of the molecular logic behind human cortical development, and the annotation of cerebral expression and epigenomic maps have contributed to identifying the molecular targets associated with neuropsychiatric risk. Transcription factors known as "bHLH" play a crucial role in neuronal development and are considered key to understanding the risk of human diseases. The research proposal uses innovative techniques to assess the binding sites of "bHLH" in human and other primate neurons to gain a deeper understanding of their contribution to specific human brain traits. The goal is to bridge the fields of neurodevelopment and evolutionary biology and develop a new methodological framework for studying the evolution of regulatory networks.

Regarding the mentioned project, the person who joins will carry out the following tasks:

- o Single-cell genomics
- o Computational analysis of ChIP-seq data
- o Multimodal integrative analysis of genomics data

APPLICATION OF CANDIDATES

You can submit your application to: gsantpere@imim.es

For more information:

https://www.imim.cat/programesrecerca/informaticabiomedica/en_neurogenomics.html