

PhD position available in the “Neurologic Diseases and Neurogenetics Group” at IDIBELL to study amyotrophic lateral sclerosis (ALS) and frontotemporal dementia (FTD) disease spectrum

1. Our research group:

The “Neurological Diseases and Neurogenetics Group” is located within the IDIBELL, a research center that integrates biomedical research from the Bellvitge University Hospital (HUB), the Catalan Institute of Oncology (ICO), and the University of Barcelona at the Bellvitge Campus (UB), located in southern Barcelona. The group comprises various clinical researchers and areas of the HUB's neurology service.



Recently, the group has established its own laboratory, the “NeuroLab”, where clinical expertise is combined with basic and translational research to develop new and interdisciplinary research lines for the different clinical fields included in the neurology service, such as amyotrophic lateral sclerosis (ALS), multiple sclerosis, Alzheimer's disease and other dementias, neuro-oncology, and more. For further information about the group, please visit: <https://idibell.cat/en/research/neuroscience-area/neuroscience-program/neurologic-diseases-and-neurogenetics/>

2. The proposal:

We are seeking a highly motivated and talented doctoral candidate to develop a thesis project in the fields of molecular biology and neurodegenerative diseases, with a primary focus on the Amyotrophic Lateral Sclerosis (ALS) and Frontotemporal Dementia (FTD) disease spectrum. The project aims to investigate the underlying molecular alterations in the ALS-FTD spectrum using a range of molecular biology techniques and approaches, including cell cultures and cell lines, animal models, and post-mortem tissue and biofluid samples from ALS-FTD patients. The main research objectives are: **(i)** to study putative biomarkers for neurodegenerative disorders within the context of the heterogeneity of the ALS-FTD spectrum; **(ii)** to discover novel biomarkers for personalized medicine in the ALS-FTD spectrum and other disorders; **(iii)** to study the underlying altered molecular mechanisms of ALS-FTD spectrum disorders; and, more specifically, **(iv)** to investigate the molecular mechanisms of the tdp-43 protein in the ALS-FTD spectrum.

The thesis will be supervised by Dr. Pol Andrés Benito and Dra. Mónica Povedano Panadés. Dr. Andrés Benito holds a PhD in Biomedicine and is the leader of the "NeuroLab," while Dra. Povedano is a clinician and serves as head of the "Motor Neuron Disease Unit" within the neurology service at Bellvitge Hospital. The Motor Neuron Disease Unit is a national and European reference unit for ALS and AME, having received accreditation for the CSUR (Centros, Servicios y Unidades de Referencia) and being a member of the TRICALS European consortium.

It is important to respect, understand, and take into consideration that the current PhD position and project funding are supported by the Catalan ALS association, "Fundació Catalana d'ELA Miquel Valls". This means that the funding comes from generous donations made by patients and other members of society who have contributed to improving biomedical research into ALS in our country. **Candidates must therefore strive to meet the expectations set forth by these efforts.**

Labor conditions:

Contract: Predoctoral (3 years extendable to 4 years). Full-time position (40h/week).

Workplace: NeuroLab (Area Franklin - Com 5). 3rd Floor. Duran i Reynals building. Institut d'Investigació Biomèdica de Bellvitge (IDIBELL). Avinguda de la Gran via de L'Hospitalet, 199, 08907, L'Hospitalet de Llobregat (Spain)

Gross annual salary: 21.000,00 € approximately (gross salary).

Approximate starting date: June 2023

3. Functions and tasks:

The successful candidate will be responsible for tasks intrinsic to a Ph.D. thesis, including literature review and critical analysis, hypothesis formulation, experimental design and implementation, data analysis, interpretation, and manuscript preparation for publication in peer-reviewed journals. The experiments to be conducted will involve in vitro studies in cultured cells and tissues, in vivo studies using rodent models to characterize and define the transmission of tdp43 pathies cell-to-cell in a prion-like manner, and the use of post-mortem tissue and biofluid samples from ALS-FTD patients to deeply characterize underlying molecular alterations. The development of the thesis will also include the use of various -omic approaches. Additionally, the study of other neurological disorders, primarily neurodegenerative disorders, may also be considered during the thesis period.

4. Requirements:

- A degree in biochemistry, biotechnology, or biomedicine, with a grade point average of 8/10 or higher (preferred but not mandatory).
- An official master's degree is mandatory for enrollment in the PhD program. A master's degree in neuroscience or related fields will be valued.
- Language proficiency: Candidates must demonstrate proficiency in English (B2 or higher) and/or Spanish (B2 or higher).
- Experience: Prior experience in laboratory techniques for molecular biology and/or working with animal models is highly valued (Official accreditation to work with experimental animals is mandatory).
- Other desirable qualities:
 - Strong teamwork (with lab and clinical colleagues) and interpersonal skills, high motivation, and commitment.
 - Familiarity with lab software such as GraphPad, Microsoft Office, R, and Fiji.
 - Programming skills are a plus.
 - Publications and/or congress attendance will be valued.

5. Submission:

Please submit your application (including your CV, degree and master records, and letter of interest/cover letter) to Dr. Pol Andrés Benito (pandres@idibell.cat). The deadline for receiving CVs and cover letters is **May 31st, 2023**.

6. Selection procedure:

1. Selection of CVs: Suitable and unsuitable CVs will be identified based on the requirements. Applicants who do not meet the requirements indicated in the candidate profile will not proceed to the next phase.
2. Evaluation of the CV: To advance to the interview phase, a minimum score of 60/100 points is required in the sum of the scores of the evaluation of the curriculum (80 points - evaluated on fit in the workplace, experience, developed functions/skills, publications, congress, etc.) and the cover letter (20 points - evaluated on motivation, attitude, extracurricular skills related to research, etc.).
3. Personal interviews will be conducted once the deadline has passed.
4. After all candidates have been interviewed, the final candidate will be selected.