BIOMEDICAL SCIENCE FOR THE BENEFIT OF SOCIETY

"Research Trainee in mechanics of organelle remodeling"
Centre for Genomic Regulation (CRG)

The Institute

The Centre for Genomic Regulation (CRG) is an international biomedical research institute of excellence, based in Barcelona, Spain, with more than 400 scientists from 44 countries. The CRG is composed by an interdisciplinary, motivated and creative scientific team which is supported both by a flexible and efficient administration and by high-end and innovative technologies.

In April 2021, the Centre for Genomic Regulation (CRG) received the renewal of the 'HR Excellence in Research' Award from the European Commission. This is a recognition of the Institute's commitment to developing an HR Strategy for Researchers, designed to bring the practices and procedures in line with the principles of the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers (Charter and Code).

Please, check out our Recruitment Policy

The role

The selected candidate will join the Mechanics of Organelle Remodeling Group. They will address a critical question in mechanobiology: how mammalian cells mechanically regulate the dynamics of nuclear RNA-processing organelles (biomolecular condensates) to drive vital cellular processes in health and/or disease. Using interdisciplinary approaches, the candidate will explore how cytoskeletal forces impact nuclear dynamics across scales, from organelle remodeling down to RNA-processing regulation, and how this physical link influences somatic cell division and specialization.

The project's outcome could change our views on life-threatening condensate-linked diseases which associate with cytoskeletal changes, like cancer or neurodegeneration, and on pathologies linked to changes in cellular mechanobiology. The latter includes nuclear mechanical loading in multisystemic laminopathies or, instead, mechanical unloading intrinsic to prolonged hospitalization and space travel.

About the Lab

Group leader: Adel Al Jord, Ph.D

To function, organisms rely on vital organs which, in turn, rely on cell division and specialization. At the subcellular scale, these universal cellular processes are notably driven by robust mechanisms of organelle remodeling. Our lab's broad interest lies in discovering these mechanisms, which is critical for the fundamental understanding of organisms in health and disease, as well as for enhanced organ engineering strategies.

A prominent research focus is the relation between physical forces and the remodeling of essential nuclear RNA-processing organelles known as biomolecular condensates. We pioneered in revealing that, in germ cells, cytoskeletal forces mechanically remodel and regulate nuclear condensates across scales for reproductive success. Whether somatic cells, which compose the majority of cells in an organism, evolved

C/ Dr. Aiguader, 88
08003 Barcelona
Tel. +34 93 316 01 00
Fax +34 93 316 00 99
www.crg.es

this mechanical mechanism of organelle remodeling remains a mystery. However, our new evidence indicates that this mechanism is deployed by mammalian somatic cells within diverse physiological and pathological contexts. We therefore aim to venture into these unexplored grounds of nuclear condensate mechano-regulation across somatic cell types in health and disease. The research objective is to decipher how cytoskeletal forces impact nuclear dynamics across scales, from organelle remodeling down to RNA-processing regulation, and how this physical link influences somatic cell division and specialization.

To attain this aim, our research follows a cross-disciplinary approach, bridging methods from systems, cell, molecular, and synthetic biology along with computational and biophysical tools. This comprises techniques like protein multiplexing, advanced live and super-resolution imaging, optogenetics, spatial transcriptomics, biomimetic systems, and force measurement and modulation assays. We will work with different model systems of interest, which include but are not limited to primary mouse brain neural progenitors and multiciliated cells, mouse cell lines (e.g., muscle cells), and human cell lines (e.g., breast cancer cells, iPS cells).

Whom would we like to hire?

Professional experience

Must Have

- The candidate must hold (by the start date) a Master's degree (300 ECTS credits), preferably in Cell Biology and/or Molecular Biology and/or Bioinformatics.
- The candidate mus have minimum 9 months of laboratory experience.

Desirable but not required/ Nice to have

- Experience with cell culture, imaging or transcriptomics
- Exposed to mechanobiology or biomolecular condensate research

Languages

- Proficient in English

Competences

- Curiosity and creative thinking
- Strong interpersonal, organizational, and communication skills
- Broad interests with a passion for cross-disciplinary research from a biological perspective

The Offer – Working Conditions

- **Contract duration**: 3 months
- **Estimated annual gross salary**: Salary is commensurate with qualifications and consistent with our pay scales
- **Target start date**: As soon as possible.

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We provide a highly stimulating environment with state-of-the-art infrastructures, and unique professional career development opportunities. To check out our training and development portfolio, please visit our website in the training section.

We offer and **promote a diverse and inclusive environment** and welcomes applicants regardless of age, disability, gender, nationality, ethnicity, religion, sexual orientation or gender identity.

The **CRG is committed to reconcile a work and family life** of its employees and are offering extended vacation period and the possibility to benefit from flexible working hours.

Application Procedure

All applications must include:

1. A motivation letter addressed to Dr. Adel Al Jord.
2. A complete CV including contact details.
3. Contact details of two referees.

All applications must be addressed to Dr. Adel Al Jord and be submitted online on the CRG Career site - http://www.crg.eu/en/content/careers/job-opportunities

Selection Process

- **Pre-selection**: The pre-selection process will be based on qualifications and expertise reflected on the candidates CVS. It will be merit-based.
- **Interview**: Preselected candidates will be interviewed by the Hiring Manager of the position and a selection panel if required.
- **Offer Letter**: Once the successful candidate is identified the People department will send a Job Offer, specifying the start day, salary, working conditions, among other important details.

Deadline: Please submit your application by 07/10/2025

Suggestions: The CRG believes in **ongoing improvement** and promotes a **culture of feedback**. This is one of the reasons we have in place, at your disposal as a candidate, a mechanism to gather your suggestions/complaints concerning your candidate experience in our recruitment processes. Your feedback really matters to us in our aim at creating a **positive candidate journey**. You can make a difference and help us improve by letting us know your suggestions through the following form.

HR EXCELLENCE IN RESEARCH

EXCELENCIA SEVERO OCHOA

C/ Dr. Aiguader, 88
08003 Barcelona
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Fax +34 93 316 00 99
www.crg.es