



## ANNOUNCEMENT OF AN INTERNATIONAL CALL FOR THE SELECTION OF A PhD HOLDER RESEARCHER

**Internal code:** Researcher/FCT\_Proj2021/i3S/1101/2024

A call is opened for the position of a PhD holder with an unfixed term work contract, to carry out research duties within the project "Spatiotemporal dissection of nuclear mechanics in the maintenance of chromosomal stability", with reference PTDC/BIA-CEL/6740/2020, funded by Fundação para a Ciência e Tecnologia IP.

**Scientific Area:** Cell Biology

### 1. Project summary and work plan

The nucleus is an essential organelle in eukaryotic cells. It harbours the genetic information and performs diverse functions such as transcription regulation, genome organization and integration of external and internal signals. When external forces are applied to the cell, they are mechanotransduced through the cytoskeleton and sensed by the nucleus. This triggers a mechanical response that relies on chromatin condensation and the nuclear envelope, ultimately leading to changes in nuclear structure and chromatin organization.

Given the essential role of cell mechanics in differentiation, migration and polarity, it is not surprising that alterations in the mechanical properties of cells and tissues are often found associated with human diseases. Accordingly, breast and colorectal tumor tissues are often stiffer than the surrounding healthy tissue. In addition, defects in the nuclear lamina, which modify nuclear stiffness or mechanotransduction, give rise to a group of diseases collectively known as laminopathies. Importantly, many of these pathologies are associated with chromosomal instability (CIN) and aneuploidy. How the nucleus spatially and temporally integrates internal and external mechanical signals to ensure mitotic fidelity is unknown.

This project proposes an innovative, multidisciplinary approach that combines state-of-the-art, live-cell microscopy with micromanipulation technologies, quantitative biology and in silico modelling to address: (1) how nuclear mechanotransduction integrates external and internal signals to ensure chromosomal stability and (2) how physical confinement alters cell and nuclear mechanotransduction, ultimately affecting mitotic fidelity.

### 2. Applicable Portuguese legislation

Decree no. 57/2016, of August 29 - Legal Regime of Scientific Employment RJEC - in its current wording;

Portuguese Labor Code, in its current wording.

### 3. Jury

Chairman: Jorge Ferreira; Other Members: Eurico Morais-de-Sá, Helder Maiato; Substitute: António Pereira.



#### 4. Workplace

i3S - Rua de Alfredo Allen, 208 Porto, research group *Epithelial Polarity and Cell Division*.

#### 5. Professional category and monthly remuneration

Junior Researcher

€2.294,95, corresponding to index 33 of the Tabela Remuneratória Única, whose application is intended for PhD holders with reduced post-doctoral experience or without a post-doctoral scientific curriculum.

#### 6. Obligatory requirements for admission

1. PhD degree in Life Sciences related fields, such as Biochemistry, Biology, Bioengineering, Biophysics. Candidates with a PhD degree in Physics/Math or a related area and with strong interest in biological systems will also be considered. If a foreign higher education institution has conferred the degree, it must comply with the provisions of Decree-Law 66/2018, of 16th August, and any formalities established therein must be fulfilled by the date of signing the contract;
2. Relevant publication record that must include first-author papers in international peer-reviewed journals in the fields of cell division, mechanobiology or cell micromanipulation;
3. Extensive hands-on expertise in at least 2 of the following points is obligatory:
  - a) Experimental work with human cell cultures;
  - b) Live-cell Microscopy;
  - c) Mechanobiology;
  - d) Cell micromanipulation;
  - e) Cell division.
4. Fluency in written and spoken English;
5. Good teamwork and interpersonal skills;
6. Immediate availability to start the contract.

#### 7. Evaluation of the applications and publication of the results

The evaluation of the scientific and curricular background of the candidates should focus on the activity of the last five years that the candidate considers most relevant. The five-year period may be extended by the jury, at the candidates request, when justified by suspension of scientific activity for socially protected reasons, namely for reasons of parental leave, prolonged serious illness, and other situations of unavailability for work that are legally protected.

#### Weight of the different curricular valuation criteria

a) Detailed Curricula (70%):

- Relevant laboratorial experience in the research area of the application. In addition to the obligatory requirements, technical expertise in biochemical approaches, molecular biology or automated image analysis is valued. (40%)

- Scientific and technological production, including oral/poster communications and publications. Although first-author publications in international peer-reviewed journals are particularly valued, work published in preprint servers will be also positively viewed (20%)



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- Participation in research projects (10%)

b) Motivation Letter (20%)

- Interest and motivation for the research area framing the position to be hired.

c) Interview (10%)

If the jury decides to obtain further clarifications and additional information about the curricular elements presented, the best candidates classified on the basis of the curriculum may be called for an interview. In this case, the curricular evaluation will weight 90% for all candidates and the interview will weight 10%.

Candidates are excluded from admission to this call if they do not fill out their application correctly or do not meet the obligatory admission requirements. If in doubt, the jury may ask any candidate additional documents in support of their statements.

False statements made by candidates will be sanctioned in accordance with the law.

The jury will draw up minutes of its meetings, which can be consulted at the candidate's request within 10 working days after the selection results are released.

The jury deliberates by means of a reasoned vote according to the evaluation criteria, with no abstentions allowed, and draws up a list of excluded and admitted candidates, ordered by respective classification.

All candidates are notified of the selection results by email. After notification, candidates have 10 working days to comment.

In the 90 days following the deadline for submission of applications, the jury's final decision is communicated to the candidates. Subsequently the institute Director, who is also responsible for the final decision of hiring, will ratify the decision of the jury.

This call is intended exclusively to fill the indicated position on offer and may be canceled before the final ranking list of candidates is ratified by the Director. Accordingly the position will no longer be available.

## 8. Submission of applications

Applications must include all the documents proving that they fulfill the admission requirements, namely:

- a) Copy of certificate or diploma;
- b) Detailed Curriculum Vitae;
- c) Other documentation relevant for the evaluation of qualifications in a related scientific area;
- d) Motivation letter;
- e) Contacts of two referees. These will only be contacted during the interview stage.



The submission of applications is digital, in pdf format, from 11 to 24 January 2024, in the following link:

<https://dozer.i3s.up.pt/applicationmanagement/#/addapplications/362c8cf1a3a6d3b520132d97815e29c6>

#### **9. Start and duration of the contract**

The anticipated start date of the contract is 01/03/2024 and is subject to budget availability. The maximum duration of the contract will be 8 months.

#### **10. Non-discrimination and equal access policy**

i3S actively promotes a policy of non-discrimination and equal access. No applicant shall be privileged, benefited, prejudiced, or deprived of any right or exempted from any duty on the basis of ancestry, age, gender, sexual orientation, marital status, family situation, economic situation, education, origin or social condition, genetic heritage, reduced work capacity, disability, chronic illness, nationality, ethnic origin or race, territory of origin, language, religion, political or ideological beliefs, or trade union membership.

Within the framework of the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers, i3S adopts the Open, Transparent and Merit-based (OTM-R) principles for the recruitment of researchers, with the aim of conducting fair and transparent recruitment processes, bringing equal opportunities to all candidates.

#### **11. Applicants with disabilities**

Under the terms of Decree-Law 29/2001, of February 3, the candidate with a disability is given preference in equal ranking, which takes precedence over any other legal preference. Candidates must declare under oath their degree of disability, the type of disability and the means of communication/expression to be used in the selection process, under the terms of the aforementioned decree.



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