**IBMC**INSTITUTO DE BIOLOGIA MOLECULAR E CELULAR
INSTITUTE FOR MOLECULAR AND CELL BIOLOGY

**ANNOUNCEMENT FOR THE OPENING OF AN INTERNATIONAL SELECTION
TENDER PROCEDURE FOR DOCTORATE HIRING OF DECREE-LAW NO. 57/2016
OF 29 AUGUST, amended by 57/2017 Law of 19 July.**

Internal Reference: PR022001

1. The meeting of the Board of Directors of IBMC deliberated the opening of an international selection tender for 1 vacancy of doctorate to perform duties of scientific research in the scientific area(s) of *Neurobiology and Development*, under a work contract with non-fixed term under the Portuguese labor Law in order to perform duties, as researcher within the project with the reference POCI-01-0145-FEDER-029471 and the title **“Investigating the molecular causes of severe Microcephaly: Primary cilium-dependent cell cycle control of neural stem cell proliferation during brain development”** at IBMC, financed by FEDER - Fundo Europeu de Desenvolvimento Regional funds through the COMPETE 2020 - Operacional Programme for Competitiveness and Internationalisation (POCI), Portugal 2020, and by Portuguese funds through FCT - Fundação para a Ciência e a Tecnologia/Ministério da Ciência, Tecnologia e Ensino Superior.

2. Project summary: Microcephaly is a devastating neurological condition, in which the brain and head size of an infant are severely reduced, generally as a direct consequence of defects in neurogenesis. During neocortical development, neurons are generated by embryonic neural stem cells termed radial glial progenitors (RGPs). At the beginning of each cell cycle, RGPs nucleate a sensory organelle known as the primary cilium. This antenna-like structure has been shown to play important roles in the proliferation and differentiation of many cell types by mediating several signaling pathways. However, very little is known about the function of the primary cilium in RGPs. In severe cases of microcephaly, such as those associated with mutations in the NDE1 gene, RGPs become trapped at multiple stages of the cell cycle, losing their ability to generate new cells. Co-depletion of both NDE1 and its paralog NDEL1 result in a striking G1 cell cycle arrest in RGPs due to defects in primary cilium resorption. Remarkably, inhibition of cilia assembly circumvents this G1 arrest, demonstrating the existence of a cilium-dependent mechanism of cell cycle control in RGPs. The planned project aims to dissect this mechanism and identify the players of this important and novel function of the primary cilium in RGP proliferation.

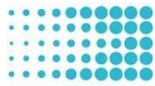
Using “*in utero*” electroporation coupled with imaging of embryonic rat brains, this project will examine the functional interaction between NDE1/NDEL1 and proteins that have been implicated in primary cilium reabsorption. It will also investigate whether primary cilium-dependent signaling pathways coordinate cilia reabsorption with G1-S progression in RGPs.

This project will determine how primary cilium dynamics are regulated and modulate neural stem cell behavior in the context of brain development and will increase our understanding of the underlying causes of severe microcephaly. It will also allow the

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identification of new therapeutic targets to stimulate the production of neurons in the treatment of countless neurological diseases.

The applicant will be actively involved in all tasks of this project and will be responsible for:

- performing “*in utero*” electroporation of rat embryos in order to manipulate the levels of proteins of interest;
- perform biochemical assays using tissues and organs extracted from animals (mainly rat);
- analyse the behavior of RGP in brain sections by microscopy;
- subcloning of cDNAs and sequences of interest in multiple expression vectors;
- work on cell culture and other organism model systems when appropriate;
- write reports and manuscripts;
- contribute to the writing of grant applications.

3. Applicable Legislation

- Decree-Law no. 57/2016 of 29 August, amended by Law 57/2017 of 19 July, which approved the doctorate hiring regime destined to stimulate scientific and technological employment for all knowledge areas (RJEC),
- Portuguese labor law
- Regulatory Decree Nr 11-A / 2017, of 29th December.

4. Pursuant to article 13 of RJEC, the tender selection panel shall be formed by:

President: Dr. Tiago Dantas

Other members: Dr. Reto Gassmann and Dr. Carla Abreu

5. Workplace shall be at IBMC, Rua Alfredo Allen, 208, Porto.

6. Monthly remuneration: Gross monthly Remuneration is 2.128,34€, in accordance with subsection a), section 1, article 15 from Law nr 57/2017, 19th July, and with the remuneration position at initial level predicted in article 2 of Regulatory Decree nr 11A/2017, of 29th December, correspondent to level 33 at Tabela Remuneratória Única, approved by Order nr 1553-C/2008, 31st December, with the category Junior Researcher.

7. Any national, foreign and stateless candidate(s) who hold a doctorate degree in *Developmental Biology, Biochemistry, Cellular Biology, and Neurosciences or related*, a scientific and professional curriculum whose profile is suited for the activity to be performed can submit their applications. If the doctorate is from a foreign higher education institution, it must comply with the provisions of Decree-Law No. 66/2018, of 16 August, and any formalities established therein must be fulfilled.

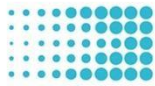
8. The tender admission requirements are:

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- 1) Prior experience in the study of cell cycle control and/or Dynein regulators;
- 2) FELASA C or B training; Preferably with experience in animal work;
- 3) Proficiency in techniques of cellular and molecular biology and biochemistry;
- 4) Proficiency in imaging, processing and analyzing microscopy images using the Image J software;
- 5) Main author in at least 3 scientific publications in peer-reviewed journals;
- 6) Immediate availability to start working on this project;
- 7) Fluent in spoken and written English;
- 8) Previous student supervision experience.

9. Pursuant to article 5 of RJEC, selection is to be made based on candidate scientific and curricular career evaluation.

10. Scientific and curricular career evaluation focuses on relevance, quality and up-to-dateness:

a) of scientific, technological, cultural or artistic production in the last five years, deemed most relevant by the candidate;

b) of research activities, applied or based on practical work, developed in the last five years, deemed most impactful by the candidate;

c) of knowledge extension and dissemination activities developed in the last five years, namely under the scope of the promotion of culture and scientific practices, deemed most relevant by the candidate.

11. The five-year period mentioned above can be extended by the panel, if requested by the candidate, whenever the suspension of scientific activities is reasoned by socially protected grounds like paternity leave, long-term serious illness, and other legal situations of unavailability to work.

12. Evaluation criteria are the following:

a) Detailed CV:

- List of scientific publications and their number of citations (30%)
- Level of candidate experience in the admission requirements (30%) - Previous research projects and experience with grant writing (15%) b)

Letter of motivation:

- Interest and motivation for the research area of the project (20%) - Proficiency in English and writing skills (5%)

13. Candidate final classification system shall be given based on a scale 0-100.

14. The panel shall deliberate by means of roll-call vote justified under adopted and disclosed selection criteria, with no abstentions allowed.

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15. Minutes of panel meetings shall be executed and shall include a summary of all occurrences of said meeting, as well as of all votes casted by the members and respective reasoning, and shall be provided to candidates whenever required.
16. After selection criteria application, the panel shall prepare a sorted list of approved candidates and respective classification.
17. Panel's final decision shall be validated by the leader of the institution, who is also in charge of deciding about the hiring.

18. Application formalization:

18.1 Applications shall include all supported documents encompassed by section 7 and 8 for tender admission, namely:

- a) Copy of PhD diploma;
- b) Curriculum vitae, detailed and structured in agreement with sections 10 and 12;
- c) Other documentation relevant for the evaluation of qualifications in a related scientific area;
- d) Motivation letter (in English);
- e) Contact information of references.

18.2 Candidates shall submit their application filling in the required information and supporting documentation, in a digital form, in PDF format, from 21st January until 3rd February, using the link:

<http://www.ibmc.up.pt/gestaocandidaturas/index.php?codigo=PR022001>

19. All candidates who formalize their applications in an improper way or fail to prove the requirements imposed by this tender are excluded from admission. In case of doubt, the panel is entitled to request any candidate to present further documentation supporting their statements.
20. False statements provided by the candidates shall be punished by law.
21. Both admitted and excluded candidate list and final classification list shall be published in the website of the Institute and the candidates are notified by email.

After publication, all candidates have 10 working days to respond. Panel's final decisions are pronounced within a period of 90 days, from the application deadline, published at IBMC website.

The expected starting date is March 1st, 2020.

22. This tender is exclusively destined to fill this specific vacancy and can be terminated at any time until approval of final candidate list, expiring with the respective occupation of said vacancy.
23. Non-discrimination and equal access policy: IBMC actively promotes a non-discrimination and equal access policy, wherefore no candidate can be privileged, benefited, impaired or deprived of any rights whatsoever, or be exempt of any duties based on their ancestry, age, sex, sexual preference, marital status, family and economic conditions, instruction, origin or social conditions, genetic heritage, reduced work capacity, disability, chronic illness, nationality, ethnic origin or race, origin territory, language, religion, political or ideological convictions and union membership.
24. The panel has approved this announcement in meeting held on 16/01/2020.
25. Pursuant to Decree-Law no. 29/2001 of 3 February, disabled candidates shall be preferred in a situation of equal classification, and said preference supersedes any legal preferences. Candidates must declare, on their honour, their respective disability degree, type of disability and communication/expression means to be used during selection period on their application form, under the regulations above.