

## POST-DOCTORAL RESEARCH GRANT (BPD) (1 vacancy)

**Reference:** NOVELMAR/BPD/2018-057

A competition is open for the attribution of 1 Post-Doctoral Grant in the framework of the **Structured Program of R&D&I INNOVMAR - Innovation and Sustainability in the Management and Exploitation of Marine Resources**, reference **NORTE-01-0145-FEDER-000035**, namely within the Research Line **NOVELMAR – Novel marine products with biotechnological applications**, within the R&D Institution CIIMAR (Interdisciplinary Centre of Marine and Environmental Research), supported by the Northern Regional Operational Programme (NORTE2020), through the European Regional Development Fund (ERDF), according to the following conditions:

**1. Scientific area:** Biological Sciences

### 2. Admission requirements

The candidates must hold a PhD in the field of Microbiology or related fields and have an exceptional publication track records in the area. Candidates should speak and write fluent English, and demonstrate capacity to perform independent research proposing new approaches for this project.

### 3. Work plan:

The research plan comprises the screening of the antimicrobial activities of antibacterial and antifungal activities of several extracts and compounds isolated from a wide range of marine organisms (e.g. cyanobacteria, bacteria, fungi and other organisms).

Firstly, the minimal inhibitory and minimal lethal concentrations will be determined (broth microdilution method) in a diverse panel of bacterial and fungi including reference strains and pathogenic multidrug-resistant (MDR) isolates. MDR bacteria will be previously characterized in relation to their phylogenetic background and the resistance determinants they harbour.

Subsequently, compounds will be used for synergy tests with antimicrobials and antifungals, against isolates presenting resistance towards those antimicrobials, using the broth microdilution checkerboard method.

Compounds found to have antibiotic or antifungal activity will be tested to check the ability to inhibit the formation of bacterial and fungal biofilms and to destabilize or disintegrate

pre-established mature biofilms, respectively. Biofilm formation will be quantified using the XTT assay.

*Quorum sensing* inhibitory properties of these compounds will be checked by testing reduction or suppression in the production of the violacein pigment by *Chromobacterium violaceum*.

Several protocols will be implemented and adjusted and in order to investigate the ability of compounds to interfere with other bacterial phenotypic resistance strategies (beyond biofilm formation) and with the horizontal transfer of antimicrobial resistance genes between pathogenic and commensal bacteria. Finally, the capacity of these compounds to switch bacterial interactions (established in polymicrobial infections) from cooperative or indifferent to antagonistic will be also examined.

#### **4. Legislation and official rules:**

Law nº. 40/2004, 18th August (Research Fellowship and Studentship Regulation Regulations for Studentships and Fellowships of the Fundação para a Ciência e a Tecnologia, I.P. and CIIMAR Grants Regulation.

#### **5. Work place:**

The work will be carried out at CIIMAR and ICBAS, at the Laboratory of Microbiology, under the scientific supervision of Prof. Paulo Martins da Costa.

#### **6. Duration of the grant:**

Duration of three (3) months, starting 1st October 2018, under the regime of exclusive dedication.

#### **7. Monthly maintenance stipend:**

The monthly maintenance allowance is €1495 (one thousand four hundred and ninety-five Euros – Taxe Free), in agreement with the monthly maintenance stipend table of the grants directly attributed by FCT, I.P. within the country (<http://alfa.fct.mctes.pt/apoios/bolsas/valores>).

#### **8. Selection methods:**

The ranking of candidates will be performed by a global evaluation based on:

- Evaluation of the Curriculum Vitae - 30%;
- Experience in the research field – 30%;
- Interview – 40% (Only the top listed 3 candidates will be interviewed).

### **9. Composition of the jury selection:**

President of the jury: Prof. Paulo Manuel Rodrigues Martins da Costa

Vogal: Prof. Paulo Manuel Rodrigues Vaz-Pires

Vogal: Prof. Maria Eugénia Ribeiro Pinto

### **10. Form of Advertising/notification of results:**

The final results of the evaluation will be published through a list sorting the candidates according to their attributed mark, on the CIIMAR website and by e-mail; in case of disagreement, the candidates have a 10-working day term in which to contest the decision, if he/she so wishes, as provided for in the Código do Procedimento Administrativo in a preliminary hearing setting. The jury reserves the right to not assign the grant depending on the quality of the applications.

### **11. Deadline for application and presentation of applications:**

The competition is open from **24<sup>th</sup> of August until 6<sup>th</sup> September 2018**. The applications must be formalized, compulsorily, by sending the following documents:

- detailed Curriculum Vitae with a summary table stating:
  - o qualification awarded in graduation (0 to 20)
  - o qualification awarded in master degree (0 to 20) (if the candidate has a master degree)
  - o date of doctoral degree
  - o articles in CV (n)
  - o articles as first author (n)
  - o H Index (scopus)
- copy of the eligibility certificates
- motivation letter
- reference contact information of current and past supervisors
- contact e-mail address and phone number
- indication of the reference of the competition (as indicated in this announcement)

The applications must be sent by postal mail to Emília Afonso, CIIMAR – Centro Interdisciplinar de Investigação Marinha e Ambiental, Novo Edifício do Terminal de Cruzeiros do Porto de Leixões, Avenida General Norton de Matos s/n, 4450-208 Matosinhos, and simultaneously by e-mail to: [secretariado@ciimar.up.pt](mailto:secretariado@ciimar.up.pt). The applications that **do not include all** the elements previously indicated will **not be considered**.