



MED – MEDITERRANEAN INSTITUTE FOR AGRICULTURE, ENVIRONMENT AND DEVELOPMENT (UID 05183)

10 (Ten) research initiation grants (BII) under the special support “Summer With Science 2022” at MED (UID 05183)

25th July of 2022

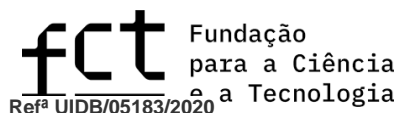
A call for tenders is open for 10 Research Initiation Grants (BII) within the scope of the special support summer with Science 2022 to the MED - Instituto Mediterrâneo para a Agricultura, Ambiente e Desenvolvimento (UID 05183), financed by national funds through the Foundation for Science and Technology (FCT), under the following conditions:

Área Científica: Natural Sciences, Agricultural Sciences, Engineering Sciences and Technology, Exact Sciences and other related areas

Admission requirements:

1. National citizens, from other member states of the European Union and from third countries, holders of a valid residence permit, or beneficiaries of the long-term resident status, may apply, under the terms provided for in Law No. 23/2007, of 4th of July, amended by Law no. 28/2019, of 29th of March or with which Portugal has entered into reciprocity agreements;
2. Research initiation grants are intended to carry out initial R&D activities by students enrolled in a higher professional technical course, a degree, an integrated master's or a master's degree, aiming at the beginning of their scientific training.

According to FCT Research Grants Regulation No. 950/2019 of December 16, 2019, article 5, - **BII** (Initiation to Research Grants) cannot be awarded to those who have already benefited from research grants directly or indirectly funded by FCT, awarded under the Research Fellowship Statute.



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Work Plan (10 Grants):

- Bolsa1_BII_VeraocomCiencia_MED - Characterization of the anti-tumor potential of thistle leaf extracts

Evaluation of protein expression of differentially expressed tumor markers in MDA-MB-231* cell line in the presence of thistle leaf extracts (Month 1 and Month 2); Evaluation of the effect of thistle leaf extracts as a natural adjuvant in breast cancer pharmacotherapy. Evaluation of the combined effect of thistle leaf extract in the presence of chemotherapeutic drugs.

- Bolsa2_BII_VeraocomCiencia_MED - Extraction of bioactive compounds and evaluation of their biological activity, in the scope of Nerium oleander residues valorization.

Optimization of the oleandrin extraction protocol using biocompatible solvents and ultrasound-assisted extraction. The extract will be evaluated regarding the anti-inflammatory potential through its effect on the inflammation mediator TNF-alpha. Oleandrin is a substance that has been identified in the leaves of Nerium oleander, an ornamental plant commonly used to populate gardens in southern Europe. Determination of its possible anti-inflammatory characteristics may allow the utilization of the waste resulting from the gardening activity.

- Bolsa3_BII_VeraocomCiencia_MED - Valorization of olive growing by-products for water treatment

The student will follow a work plan, in the scope of the valorization of olive oil sector by-products by their transformation into bio-adsorbents, with the objective of, first, carrying out their physical and chemical characterization, and later their characterization regarding their efficiency in the removal of emerging pollutant compounds (in liquid phase). The bio-adsorbents will be assayed with specific amounts of distinct contaminant compounds, with the help of spectroscopy techniques, in order to evaluate their efficiency to remove such contaminants.

- Bolsa4_BII_VeraocomCiencia_MED - Bioeconomy and circular economy along the Agri-food chains

Analysis and evaluation of the energy consumption for vegetable production in greenhouses and in the outside, in order to estimate sustainability indicators. This work will be carried out in collaboration with CAMPOTEC, a company based in the West region of Portugal, which has shown interest in the topic. In this first stage, we intend to identify crop(s), the locations, existing information, as well as missing data, in order to define a reliable evaluation protocol.

- Bolsa5_BII_VeraocomCiencia_MED - Adaptation and valorization of Portuguese Varieties and ensure their preservation (Olive and Olive Oil Thematic Line)

Extraction and analysis of the metabolome associated with adventitious root formation to identify the metabolic pathways involved in the efficiency of the morphogenic process, with the



ultimate aim of contributing to the vegetative propagation process optimization of traditional Portuguese varieties.

- Bolsa6_BII_VeraocomCiencia_MED - Increasing the quality and typicity of wine - genotyping (Wine and Vine Thematic Line)

Microsatellite genotyping of *Vitis* hybrid populations from controlled crossings between Portuguese grape varieties and hybrids resistant to fungal pathogens aiming the introgression of genes for resistance to powdery mildew and downy mildew. The main objective is to contribute to the selection process allowing subsequent hybridization work.

- Bolsa7_BII_VeraocomCiencia_MED - Increasing the quality and typicity of wine - Characterization of the loci (Wine and Vine Thematic Line)

Characterization of loci for resistance to pathogenic fungi in the resistant Portuguese grape variety 'Defensor', a hybrid obtained in a breeding program by the company PLANSEL. This work involves the analysis of the expression of genes located at the putative resistance *loci* identified for this variety. Objective: To provide new knowledge about this variety in order to be able to use 'Defensor' as a progenitor in future controlled crossings.

- Bolsa8_BII_VeraocomCiencia_MED - Monitoring Companhia das Lezírias bird communities

Carry out two car transects in the Tagus Estuary to monitor the Barn Owl population (2 days). Production of a report on methodologies for Barn Owls census (7 days). TytoTagus Project Database Update with new information on agricultural management, land use and climatological variables, for further analysis of the respective impact on the abundance of the Barn Owl in the Tagus Estuary (13 days).

- Bolsa9_BII_VeraocomCiencia_MED – Innovation on cork oak irrigation - Data collection and processing

Perform periodic ecophysiological measurements in our four pilot trials, including measuring water potential with a pressure chamber at two different moments, photosynthetic rates with portable IRGA equipment, soil moisture, and sap flow measurement. Processing and analysis of collected data.

- Bolsa10_BII_VeraocomCiencia_MED - Innovation on cork oak irrigation - Plant anatomy and histology

Development of an optimized protocol for staining histological sections of cork oak stem and branches for a good differentiation of the different cell types. The work will be carried out in the Advanced Microscopy and Flow Cytometry Unit (UMACiF), Mitra Unit, Évora. Histological sections will be produced and tested with different dyes. The student will have the opportunity to carry out laboratory work in the area of plant anatomy and histology.

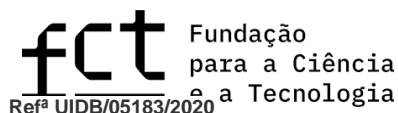


All scholarships must at the end of the scholarship: Prepare a written report (c. 2 pages/700 words); Make a public presentation, within the scope of the MED R&D unit, of the work developed, contributing to the dissemination of the BIIC-FCT-CienciaVerão22, interacting with project researchers in terms of future publications.

Applicable legislation and regulations: The granting of the Research Scholarship will be carried out upon the signing of a contract between the University of Évora and the scholarship holder, as set in the template https://www.fct.pt/apoios/Minuta_Contrato_Bolsa.docx, pursuant to the Research Scholarship Statute (Law No. 40/2004 of August 18 and Decree-Law No. 123/2019 of August 28) and in accordance with the legislation and Regulation of Research Grants of the Foundation for Science and Technology, IP in force, regulation nº950/2019 of December 16, 2019: <https://www.fct.pt/apoios/bolsas/regulamento.phtml.pt> and other applicable rules.

Place of work: Bolsa1_BII_VeraocomCiencia_MED scholarship works will be carried out at CEBAL, in Beja, under the scientific supervision of Dr. Fátima Duarte. Bolsa2_BII_VeraocomCiencia_MED works will also be carried out at CEBAL, in Beja, under the supervision of Dr. Fátima Duarte and co-supervision of Dr. Teresa Brás. Bolsa3_BII_VeraocomCiencia_MED works will be carried out at MED, University of Évora, Colégio Luís António Verney, under the scientific supervision of Professor Paulo Mira Mourão and co-supervision of Professor Isabel Cansado and Professor José Castanheiro. Bolsa4_BII_VeraocomCiencia_MED works will be carried out in MED, University of Évora, Mitra and at CAMPOTEC installations in the Western region, under the scientific supervision of Professor Fátima Baptista. Bolsa5_BII_VeraocomCiencia_MED works will be carried out in MED, University of Evora, Mitra, under the supervision of Dr. Hélia Cardoso and co-supervision of Dr. Lénia Rodrigues. Bolsa6_BII_VeraocomCiencia_MED and Bolsa7_BII_VeraocomCiencia_MED works will be carried out in MED, University of Évora, Mitra, under the scientific supervision of Dr. Hélia Cardoso and co-supervision of Professor Augusto Peixe. Bolsa8_BII_VeraocomCiencia_MED works will be developed in MED, University of Évora, Mitra site and at the Companhia das Lezírias, under the scientific supervision of Dr. Inês Roque. Bolsa9_BII_VeraocomCiencia_MED works will be carried out in MED, University of Évora, Mitra, and at pilot trial sites in both Avis and Coruche counties, under the scientific supervision of Dr. Constança Camilo-Alves and co-supervision of Dr. Ana Poeiras. Bolsa10_BII_VeraocomCiencia_MED works will be carried out in MED, University of Évora, Mitra, under the scientific supervision of Dr. Ana Poeiras and co-supervision of Dr. Isabel Velada.

Duration of the grants: The fellowships will have a duration of 1 month, starting until 1st September, 2022.



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Amount of monthly maintenance allowance: The amount of the grant corresponds to €486.12, according to the table of values of grants awarded directly by FCT, I.P. in the Country (<http://fct.pt/apoios/bolsas/valores>), with payments made by check or bank transfer.

Selection methods:

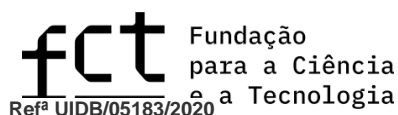
1. The selection methods to be used will be the following: curriculum assessment (AC = 70%) and motivation letter (CM = 30%) expressed on a scale from 0 to 20 (maximum level) with valuation to the hundredths.
2. In the Curriculum Assessment (AC) of the candidates, their aptitudes are assessed, taking into account the competencies expressed by the candidate in the Curriculum Vitae in the following aspects: a) attendance at a higher professional technical course, degree, integrated master's or master's degree related with Natural Sciences, Agricultural Sciences, Engineering Sciences and Technology, Exact Sciences and other related scientific areas; b) adequacy of professional experience to the functions to be performed.
3. In the evaluation of the Letter of Motivation, the candidate's motivation, the relevance of the scholarship in his/her personal project, adequacy of the candidate's profile to the defined work plan, expression, and written fluency.

Composition of the Selection Jury:

President: Doctor Nuno M. Pedroso, Integrated Researcher MED - University of Évora
1st Member – Prof. Doutora Maria João Cabrita, Associate Professor with habilitation, University of Évora
2nd Member – Prof. Doutora Maria do Rosário Félix, Associate Professor with Aggregation University of Évora
Substitutes:
1st alternate member - Doutor Luis Piteira Gomes, Integrated Researcher MED - University of Évora
2nd alternate member – Doutora Elsa Lamy, Integrated Researcher MED - University of Évora

Advertising/notification of results: The final results of the evaluation will be publicized, through a list ordered by the final grade, posted in a visible and public place at Mitra - University of Évora, with the selected candidate being notified through e-mail.

Under the terms of the interested parties' right to a prior hearing, the Final Classification project will be announced by any written means to all interested parties.



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After communicating the provisional list of the evaluation results, candidates have a period of 10 working days in which, if they so wish, to express their views at the prior hearing of interested parties.

Application deadline and form of submission of applications: The contest is open from 27th July of 2022 to 3th August of 2022 and the selection results will be published until 10th August of 2022.

The application must be accompanied, under penalty of exclusion, by the following documents:

1. Reference to the scholarship contest you are applying for;
2. Curriculum Vitae;
3. Letter of Motivation;
4. Proof of the degree, if applicable.
5. Proof of attendance at a higher professional technical course, degree, integrated master's or master's degree.

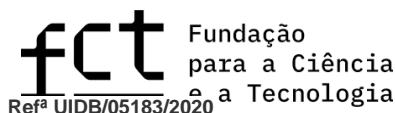
For the purposes of the application, the evidence may be replaced by a declaration of honor signed by the candidate, but the failure to demonstrate that evidence, in the contracting phase, possession of the required degree on the deadline for application or the non-presentation of proof of enrollment in the study cycle or non-degree course, for scholarships with this component, imply the cancellation of the candidate's application.

Academic degrees obtained in foreign countries require registration by a Portuguese Institution in accordance with Decree-Law no. 66/2018, of August 16 and Ordinance No. 33/2019, of January 25th. The presentation of the certificate is mandatory for the signing of the contract. More information can be obtained at:

<https://www.dges.gov.pt/pt/pagina/recognition?plid=374>

Applications must be sent by email to:

Doctor Nuno Miguel Pedroso
MED - Mediterranean Institute for Agriculture, Environmental and Development
University of Évora
E-mail: nmpsp@uevora.pt



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