

Call for n. 1 Short Research Fellowship - Ca' Foscari University of Venice– Department of Molecular Sciences and Nanosystems

(L. 240 of December 30th 2010, art. 18, DL 19/2012;
Regulations about Short Research fellowships DR DR n. 1141/2020 of 19/11/2020

The present document in English is to be considered as a mere translation of the provisions of the call which is available in Italian at the following [link](#). The text in Italian is the official text of the notice of competition for all legal intents and purposes and, in the event of non-conformity with the present document, it shall prevail.

The Department of Molecular Sciences and Nanosystems of Ca' Foscari University of Venice, having regard to the Decree of the Director of the Department of Molecular Sciences and Nanosystems Rep. no. 480/2021 prot. no. 81215 of 07/07/2021 establishing the research programmes for awarding of the short fellowships regarding the "**Development of bicyclic peptides against the spread of SARS-CoV-2**", SSD: BIO/11, lasting for 6 months, tutor prof. Alessandro Angelini with the possibility of renewal within the limits of art. 4 of the Regulations for awarding of university short research fellowships in reference to the research project entitled "RELIEVED - Riduzione della diffusione di SARS-CoV-2 nel corpo umano per mezzo della somministrazione in forma di aerosol di peptidi biciclici PEGilati schermanti le cellule" CUP: H75F20000930006.

The expected starting date is in **August 2021**.

The research fellowship is awarded for the purpose of collaboration with the following research programme of the Department of Molecular Sciences and Nanosystems:

Abstract: Coronavirus disease (COVID-19) is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and was first detected in Wuhan, China in December 2019. To date, more than 170 million cases of COVID-19 have been confirmed worldwide, including more than 3 million deaths. Currently, the most effective and direct approach to prevent SARS-CoV-2 from entering the host cells involves the use of antibodies (Abs) capable of binding the glycoprotein and which also provide a passive immunity to the virus. Although efficacious, the use of Abs for the treatment of infection diseases is often limited by the high production cost that makes the use of Abs prohibitive and therefore inaccessible to a large portion of the world population. To overcome these limitations, we propose the development of a treatment based on bicyclic peptides capable of blocking the interaction of the virus with the human receptor. Bicyclic peptides combine several favourable properties of both Abs and small molecules. Similar to Abs, bicyclic peptides can be genetically encoded and are selected using in vitro direct evolution approaches; they can bind targets with high affinity and specificity. Like small molecules, they can be rapidly synthesized in large quantities and at low costs. Importantly, they exhibit a high chemical and proteolytic stability.

For this purpose, the fellow will perform the following research activities:

- apply yeast display technology coupled with the use of magnetic beads and flow cytometry for the selection and engineering of bicyclic peptide binders;
- synthesis, purify and characterize the engineered peptide binders;
- apply multiple chemical modification approaches for the cyclisation of peptides;
- apply multiple analytical techniques such as: i) chromatography to obtain peptides with a high degree of purity (> 95%), ii) mass spectrometry to determine the molecular weight of peptides, iii) UV/Vis spectroscopy to determine the peptide concentration, iv) fluorescence polarization (FP) to determine the binding affinity and v) flow cytometry to analyse the peptides displayed on the surface of yeast cells and

capable of binding the protein target.

The research fellowship amounts to Euro 9.000,00.

Deadline: **July 26 2021 at 12.00 p.m. (italian time)**

Rules of eligibility - Beneficiaries.

People with **Master's degree in Chemical Sciences**

The following knowledge, skills and experience will also be evaluated as preferential qualifications:

- synthesis, purification and characterization of peptides;
- cyclization and conformation stabilization of linear peptides; - use multiple techniques such as chromatography, mass spectrometry, UV / VIS spectroscopy, fluorescence polarization (FP) and flow cytometry;
- know direct evolution techniques of peptides such as phage and / or yeast display;
- knowledge of the English language.

Applicants must hold all the requisites within the call deadline. The qualifications will be evaluated by a Commission that examines the eligibility and qualifications of the candidates and makes a merit rank of them.

Short Research Fellowship to non-EU citizens.

If a non-EU citizen already living in Italy applies for a Research Fellowship, he must hold a residence permit valid up to the Deadline of the call. Otherwise, the Department undertakes to undergo the procedures for obtaining a residence permit for research activities.

How to apply

Candidates should submit:

1. The application form (<http://www.unive.it/data/28900/>), duly dated and signed.
2. A CV in European format (<http://www.unive.it/data/28900/>), duly dated and signed (bearing, in addition to the indication of the qualification held for the purposes of access to the selection, the degree grade, subject of the thesis, a detailed description of the scientific-professional qualifications that it intends to assert;
3. A photocopy of a valid identity document (e.g. Identity Card or Passport).
4. All documents, qualifications and publications relevant for the selection procedure.

How to submit your application

Candidates must submit an online application with all the required documents in accordance with the Regulations on Short research fellowship awarding and the following paragraphs.

Applications, together with all the required documentation, have to be submitted exclusively online at the following webpage:

<https://apps.unive.it/domandeconcorso-en/accesso/dsmn-fisir-relieved>

not later than noon time (**12:00 Rome CET**) of **July 26, 2021**.

The candidate, after the uploading, will receive a submission number and an e-mail acknowledging receipt of their application. The candidate if necessary could access the procedures for updating any data and materials through the link and submission number provided in the e-mail until the call deadline expires.

Please note that the University can be contacted for any support needs by the candidate until 24 hours prior to the deadline. For further information please contact: Segretariat of the Department of Molecular Sciences and Nanosystems, Research section, tel. 041-2348633, e-mail: ricerca.dsmn@unive.it

The University accepts no liability in the event of the recipient being untraceable or dispersion of the communications due to inaccurate indication of the domicile by the candidate, failure or delay in communication of variation of domicile or causes not depending on the University, or for any postal, telegraphic or telematic error or those attributable to third parties, chance events or force majeure.

The declarations made in the application shall be considered issued in accordance with the DPR no. 445/2000 and subsequent amendments, by candidates entitled to use the simplified administrative certifications permitted by the above decree.

Selection procedure

Candidates shall be selected, on the basis of their qualifications and an interview, by a selection committee appointed pursuant to Art. 7 of the Regulation for the awarding of short-term research fellowships.

Short-listed candidates will be invited for interview on **28th July 2021 at 4.00 p.m.** through **Google meet**

The short list will be published on <http://www.unive.it/data/28900/> on **27 th July 2021**.

Therefore, candidates are required to present themselves, with a valid identification document, without notice, at the premises, on the days and at the time indicated in the public notice.

The absence of candidates from the interview will be considered to all intents and purposes as a renunciation of the selection, whatever the cause.

The Selection Committee awards a maximum of 100 points to applications, on the basis of the qualifications and interview, and then drafts a final merit-based ranking according to the assigned scores and identifies the winner. If the event of a tie, priority shall be granted to the younger of the two candidates.

The ranking shall be used according to the order in which it has been formulated and, in the event of withdrawal or failure by the assignee to accept the award by the deadline set by the department or early termination of the research collaboration agreement, the grant shall be assigned to another candidate following the order of the final merit-based ranking, in accordance with the Regulation for the Awarding of short-term research fellowships (Art. 8). The Selection Committee shall submit a competition report to the Director of the research department, who, after verifying the legitimacy of the competition procedure, shall approve the procedure and award the grant by Director's decree

Incompatibility

The fellowships within this announcement may not be combined with:

- other research grants;
 - fellowships of any other kind, with the exception of those awarded by national or foreign research institutes to integrate, with periods abroad, the specific research activities required by this announcement.
- In the case of self-employment, employment or para-subordinate employment, compatibility shall be determined by the Research Project Supervisor.

The granting of the Short Research fellowship does not give rise to the establishment of any employment relationship, nor does it give rise to rights regarding access to the roles of the University staff.

Information and contacts

Candidates may find further details about the application process and the research project in the official call published on: <http://www.unive.it/data/28824/>.

For further information please contact Segreteria DSMN, tel.041-2348633 email: ricerca.dsmn@unive.it

Evaluation Procedure and Commission.

A **Commission** summoned by the Director of the Department, who indicates the President of the Commission and the member taking the minutes, will evaluate the applications.

Evaluation procedure. The Commission defines the general evaluation criteria. The interview and any other test must ascertain the suitability of the applicant to the research activity. The Commission compiles a ranking and specifies the winning applicant, having regard to the score appointed to experience and qualifications as specified by the call.

Awarding of the short research fellowship Having received the selection documents, and at the outcome of the checks, the Director approves, by his own decree, the classification and the selection procedure reports and makes them public according to the procedures specified in the Regulation awarding the short research fellowship art. 6 and in the website <http://www.unive.it/data/28900/>. Exclusion is justified in detail in the selection reports which can be accessed in accordance with law 241/90.

The Director of the Department at which the research programme will be conducted awards the research fellowship to the winner of the selection procedure, subject to ascertainment of the prescribed requirements. The latter shall accept the award within 7 days from receipt of the communication by signing the relative contract at the competent office of the Department of Molecular Sciences and Nanosystems, which will establish the terms of and procedures for the collaboration and allocation of the grant.

Grant. The fellowship is intended to provide the successful candidate with the opportunity to pursue his/her own research while benefiting from the range of expertise at Università Ca' Foscari Venezia. The tutor coordinates the activities of the Research Fellow and any other research activity within the same program and provides the Fellow with all the information for carrying out the research.

The Department provides the Research Fellow with the needed back-up support such as access to facilities, equipment and administrative services.

The Research Fellowship is not, in any case, considered as an employment contract and the Fellow is not part of the University staff.

The rights for any patentable invention coming from Research Activities belong to the University or entities with which the University has signed (or will sign) specific agreements.

The person responsible for administrative proceedings

In accordance with Art. 5 of Law no. 241 dated 7 August 1990, as amended, the person responsible for the selection process (RPA) is Sonia Barizza who can be reached at the

Department of Molecular Sciences and Nanosystems, at the e-mail address ricerca.dsmn@unive.it.

Final provisions

For anything not specified in this call, see the University of Venice's current regulations regarding the awarding for research fellowships and the current legislation.

Venice, July 8 , 2021

Il Direttore del Dipartimento di
Scienze Molecolari e Nanosistemi
Prof. Pietro Riello
f.to digitalmente ex art.24 Dlgs 82/2005 (CAD) e ss.mm.ii.

VISTO

La responsabile del procedimento

La Segretaria del Dipartimento di Scienze Molecolari e Nanosistemi

Sonia Barizza: barizza@unive.it

Telefono: 041-2348535 fax 041-2348517