"RBP-ReguNet"

Marie Skłodowska-Curie Actions

Doctoral Networks (DN)

"RBP-ReguNet"

"Deconstructing and Rewiring RNA-RBP regulatory networks"

(HORIZON-MSCA-2021-DN-01, proposal 101073094 — RBP-ReguNet)

DC position within RBP-ReguNet at "Università degli Studi di Milano"

OPEN CALL: deadline 31st March 2023

The **Horizon Europe MSCA-*Doctoral Network* RBP-ReguNet** ("*Deconstructing and Rewiring RNA-RBP regulatory networks*") is run by a Consortium of Universities in cooperation with Companies and offers an innovative PhD level training in multiple disciplines involved in pharmaceutical research, and in particular in the characterization of proteins binding to RNA sequences, to **11 Doctoral Candidates** (**DCs**).

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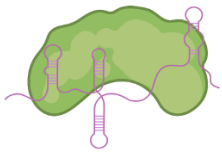

1. SECTION 1 - GENERAL INFORMATION AND PROCEDURES FOR DCs

1.1. RBP ReguNet NETWORK: COORDINATING UNIVERSITY (CU), INTERNATIONAL PARTNERS (PA) AND ASSOCIATED PARTNERS (APA)

- **CU: Universidad de Santiago de Compostela** / **CIMUS** (Center for Research in Molecular Medicine and Chronic Diseases/CIMUS) - SPAIN – Prof. Ashwin Woodhoo

- **PA**: **Institut Curie** / **IC** (Genome Integrity, RNA and Cancer) - FRANCE – Prof. Stephan Vagner
- **PA**: **Fundaciò Centre de Regolacion Genomica / CRG** (Gene Regulation, Stem Cell and Cancer) - SPAIN – Prof. Juan Valcarcel
- **PA**: **Sanquin Research** (Landsteiner Laboratory) - NETHERLANDS – Dr. Monika Wolkers
- **PA**: **University of Glasgow** / **CVR** (Centre for Virus Research - CVR) - SCOTLAND – Prof. Alfredo Castello
- **PA**: **EMBL** (Director Research Unit) - GERMANY – Prof. Matthias Heinze
- **PA**: **Università degli Studi di Milano** / **UniMI** (Chemistry Department) - ITALY – Prof. Pierfausto Seneci
- **PA**: **Università di Trento** / **CIBIO** (Cellular, Computational and Integrative Biology - CIBIO) - ITALY – Prof. Pierfausto Seneci
- **PA**: **IMMAGINA Biotechnology srl** (RNA technologies) - ITALY – Prof. Massimiliano Clamer

- **APA**: **Fundacion Kertor** (Open Innovation Initiative) - SPAIN – Prof. Mabel Loza
- **APA**; **Universitè Paris-Saclay** / **UPS** (Doctoral School for Institut Curie) - FRANCE
- **APA**; **Pompeu Fabra University** / **PFU** (Doctoral School for CRG) - SPAIN
- **APA**; **RiboNexus** - FRANCE – Dr. Matthieu Coutet
- **APA**; **Consiglio Nazionale delle Ricerche / SCITEC-CNR** (SCITEC Institute) - ITALY – Dr. Daniela Arosio

1.2. *RBP-ReguNet DOCTORAL PROJECTS*

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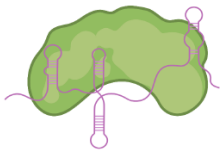
"RBP-ReguNet"



Based on the *RBP-ReguNet* research programme, PhD applicants are requested to choose among 11 different and multidisciplinary doctoral projects strongly related to each other (**D1** to **D11**, see also https://euraxess.ec.europa.eu/jobs/51150). Different state-of-the-art technologies and methodologies relevant lead to training in

1. RBP biology and nerve pathophysiology – "*the role of RBPs in Schwann cell disease*" (D1) – **CIMUS**, https://www.usc.es/cimus/en/postgraduate-training;
2. RBP biology and liver pathophysiology – "*the role of RBPs in cholestatic liver disease*" (D2) - **CIMUS**, https://www.usc.es/cimus/en/postgraduate-training;
3. RBP biology, genomics and oncology – "*the role of RBPs in the response to DNA damage and in the metabolic status of cancer cells*" (D3) – **IC/UPS,** https://institut-curie.org/training?profile=3;
4. RBP biology and cancer biology – "*the role of unconventional RBPs in melanoma progression*" (D4) – **CRG/UPF -** https://www.crg.eu/es/content/training-phd-students/crg-international-phd-programme;
5. RBP biology and preclinical in vivo disease models – "*Dissecting the molecular functions of RBM10 in development, cardiac function, inflammation, viral host defence and cancer progression*"(D5) – **CRG/UPF -** https://www.crg.eu/es/content/training-phd-students/crg-international-phd-programme;
6. RBP biology and inflammation "*Defining the function of RBPs in T cell function under stress conditions*" (D6) – **Sanquin -** https://www.sanquin.org/research/phd-programs/index;
7. RNA biology and virology "*Understanding the role of the RNA-binding activity of p62/SQSTM1 in SARS-CoV-2 infection*" (D7) – **CVR -** https://www.gla.ac.uk/research/az/cvr/trainingdevelopment/cvrmrcphdprogramme;
8. ribosome-centered technology and software development - "*Ribo-techniques development*" (D8) – **IMMAGINA/CIBIO -** https://www.cibio.unitn.it/78/doctoral-program;
9. HTS screening and cancer biology – "*Small molecules targeting RNA binding protein (RBP)-mediated post-transcriptional regulation of immune checkpoints*" (D9) – **CIBIO -** https://www.cibio.unitn.it/78/doctoral-program;
10. **medicinal chemistry** – "***Rational design, synthesis and structural optimization of drug-like modulators of RBPs***" (**D10**) – **UniMI**, co-supervised by **SCITEC-CNR -**

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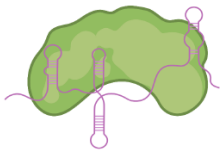

https://www.unimi.it/en/education/postgraduate-and-continuing-education-programmes/doctoral-programmes-phd/ay-2022/2023-industrial-chemistry;

11. structural biology – "*Deciphering the high-resolution structure of human Enolase-1 bound by an RNA inhibitor*" (D11) – **EMBL** - https://www.embl.org/about/info/embl-international-phd-programme/.

Each DC will benefit from the following **training and research activities**:

- Local **training activities**, including advanced courses and acquisition of soft and transferable skills provided by the home University's doctorate courses/schools;
- Individual **multi-disciplinary research projects** in the framework of **RBPs** and **RNA targets** in drug discovery, i.e. a highly exciting and promising field of pharmaceutical research / drug discovery;
- **Technical training on state-of-the-art research infrastructure and instrumentation** in the Supervisor's lab at hosting, top research European institutions;
- Definition and development of a **Personal Career Development Plan (PCDP)**, guided by the main Supervisor, Co-supervisor and mentors in consultation with the Training Committee;
- **Secondments** in labs with complementary and scientific integrated areas at one of the beneficiaries jointly awarding the doctoral degree, to complement the training through research methods offered at the home institution;
- Acquisition of **entrepreneurial skills** by hosting or secondments to non-academic partners, and through a range of network-wide training activities.

A detailed description of the technical-scientific requirements for candidates applying to the **D10** position – **medicinal chemistry, University of Milan** - are to be found in Section 2.

1.3. FINANCIAL ASPECTS – DC POSITIONS

Each DC will receive a **36-month** grant to cover their participation costs, living, travel and installation allowance, family allowance; compensation for each DC will be adapted to the country where their hosting institution is located. Additional information for candidates applying for **D10** – **medicinal chemistry, University of Milan** - are provided in Section 2.

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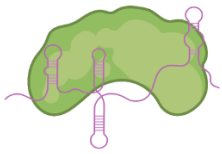

The cost of the PhD educational activities, as well as all expenses related to travels performed to attend schools, workshops, network-organized events and secondments will be planned and sustained by the network through the HORIZON EUROPE MSCA-DOCTORAL NETWORK grant (Institutional Costs).

The DCs will be provided with office space and appropriate lab facilities for his/her research programme.

1.4. ELIGIBILITY CRITERIA

There are strict eligibility requirements for the DC positions in MSCA-DN. Please ensure to be qualified before applying, as ineligible candidates cannot be considered.

- Admission to the programme is *open* to applicants who hold a **2nd Level Master Degree** (120 ECTS + 180 ECTS in a bachelor degree) or a **Single Cycle Degree** (minimum 300 ECTS), or a **comparable university degree** (Second Cycle qualification), as required by the Partner universities for admission to doctoral studies; specific requirements for candidates applying to the **D10** position – **medicinal chemistry, University of Milan** - are to be found in Section 2. Applicants are expected to achieve their degree within March 31th, 2023. They shall submit a certified copy of any degree achieved by the deadline of March 31st, 2023.
- Requirements set by the Consortium concern master's degree (or equivalent) graduates in the fields of molecular biology, cellular biology, assay development, organic chemistry, medicinal chemistry, biophysical sciences, oncology, neurosciences, immunology and liver diseases; specific requirements for candidates applying to the **D10** position – **medicinal chemistry, University of Milan** - are to be found in Section 2.
- Applicants can be of any nationality.
- Applicants are required to be proficient in the English language (at least B2 level).
- Applicants should – at the time of recruitment – be in the first four years (full time equivalent research experience) of their research careers, and should not yet have been awarded a doctorate. They must not have resided or carried out their main activity (work, studies, etc.) in the country of their host organization for more than 12 months in the 3 years immediately before their recruitment date. Compulsory national service and/or short stays such as holidays and time spent as part of a procedure for obtaining refugee status under the Geneva Convention are not taken into account.

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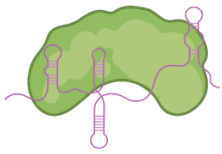

The Recruitment board will pay special attention to respect gender balance.

1.5. HOW TO APPLY

Applications must be submitted on mscadn.rbp.regunet@gmail.com **by March 31st, 2023 at 17:00 central European time** (http://www.timeanddate.com/time/zones/cet).

Candidates should submit the following documents as one single PDF file via email to for **one to maximum three** doctorate positions, and indicate their preference.

- **Detailed *curriculum vitae*** (European format; essential elements to be included: list of publications; participation in funded research projects; other qualifications, if any);
- Certified copy of **Academic Degree/s** in original language along with a certified translation into English, and/or Diploma Supplement (if applicable);
- Certified copies of **official Academic Transcripts** relating to all academic courses taken to earn every degree (Bachelor/Master or equivalent), translated into English, and correspondent grade point average;
- **Applicant's proposed project** within up to 3 of the *RBP-ReguNet* multidisciplinary projects, specifying the preferred DC option;
- **Research statement**, describing the applicant's research experience in relation with the project/s s/he is applying for (max. 1500 words). The letter will report a short description of the applicant's Master research project, and a self-evaluation on scientific and soft skills;
- **Motivation letter**;
- Up to two **recommendation letters**;
- **English certificate** (at least B2 level);
- Copy of **passport** (or, for EU citizens, of an equivalent ID document).

Applicants are required to submit the following documents by **uploading them as a single PDF file;** hand written applications and applications sent by email, post or fax will *not* be accepted.

Instructions on submission are provided on https://euraxess.ec.europa.eu/jobs/51150 and on https://cordis.europa.eu/project/id/101073094. For more information you may also contact ashwin.woodhoo@usc.es.

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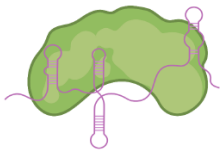

Failure to submit any of the above documents implies exclusion from the *RBP-ReguNet* assessment procedure. All data provided by the applicants are processed solely for the purpose of the *RBP-ReguNet* call for applicants.

1.6. SELECTION PROCEDURE

RBP-ReguNet will adopt the principles of the **European Charter for Researchers and Code of Conduct for the Recruitment of Researchers** (Charter and Code), promoting open, merit-based and transparent recruitment and attractive working and employment conditions.

The two-step procedure for applicants' selection is based on

1. **assessment of the documents** attached to the application, taking place between *March 16th and March 31st, 2023*; our recruitment committee will check that each application is complete and that applicants fulfil the eligibility criteria described in the previous section¸ each eligible application will be assessed independently by the principal investigators of our network, according to the project interests indicated by the applicants.
2. an **interview** (videoconference) to those applicants who have passed the first-step selection, taking place between *April 10th and April 24th, 2023*; the principal investigators will select **up to four candidates per position** to pass through to the following stage; those who have been positively evaluated but not initially called for interviews will be put on a reserve list; up to four candidates will be interviewed **by their putative supervisor** (i.e. the supervisor responsible for DC position of interest), **two additional supervisors** from the RBP-ReguNet network, and a **member of the recruitment committee**.

The DC will be selected on the basis of the following criteria (in random order):

- scientific skills and research experience;
- ability to collaborate and communicate;
- career profile and potential for excellence;
- expected impact of the proposed training on their career;
- research project.

Our recruitment committee will **notify short-listed candidates** of the outcome by *April 31st, 2023*, and those selected will be put in touch with the corresponding principal investigator and the HR Department of the hosting institution to initiate the hiring procedure. Applicants who have not been

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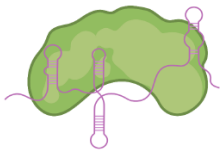

successful, but who have received a positive evaluation will be put on a **waiting list** to cover possible withdrawals and future positions.

Upon completion of the two-step procedure and notification process an **applicants' ranking list** will be published on the *RBP-ReguNet* website based on the total score assigned to each applicant. A reserve list will also be created.

For further general information regarding *RBP-ReguNet*, please see also https://euraxess.ec.europa.eu/jobs/51150

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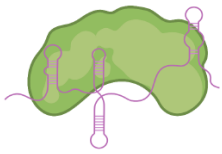

2. SECTION 2 – DETAILED INFORMATION REGARDING D10 – DC AT UNIVERSITY OF MILAN IN MEDICINAL CHEMISTRY

2.1. DOCTORATE SUPERVISORS – D10

→ SUPERVISOR: **Prof. Pierfausto Seneci** – Associate Professor, University of Milan, Italy (https://www.unimi.it/it/ugov/person/pierfausto-seneci);

→ CO-SUPERVISOR: **Dr. Daniela Arosio** – Researcher, CNR-SCITEC, Milan, Italy (http://www.scitec.cnr.it/en/people/golgi-en/arosio-daniela-en);

2.2. FINANCIAL ASPECTS – D10

Each DC will receive a **36-month** grant to cover their participation costs, living, travel and installation allowance, family allowance; the adaptation of European compensation standards to Italy leads for **D10** – Doctoral position at the University of Milan to the following contributions:

- A **gross monthly salary** of *€ 3.311,60;*
- A **monthly mobility allowance** of *€ 600,00;*
- A **monthly family allowance** (if applicable) of *€ 495,00;*
- **Full coverage of the expenses**, related to the participation of the doctoral candidate in research and training activities (contribution to research-related costs, meetings, conference attendance, training actions, secondments, etc.).

Tax and fringes will be applied as per art. 22, paragraph 6 of the Law 240/2010 in the version prior to Law no. 79 of 29.6.2022.

2.3. D10 DOCTORAL COURSE

The young MSc scientist awarded with the D10 doctoral position will benefit from the following **training and research activities**:

- **Training activities at University of Milan**, including advanced scientific and non-scientific courses (i.e., intellectual property / IP and business development), and the acquisition of soft

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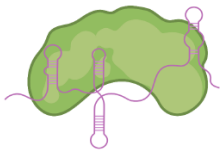

and transferable skills (i.e., presentation skills and DB searching skills) provided by the "Industrial Chemistry" doctorate course;

- A **medicinal chemistry-centered research project** in the framework of **RBPs** and **RNA targets** in drug discovery, specifically aimed to rationally design and carry out the synthesis of small molecule analogues of hits from virtual and tangible HTS campaigns from other RBP-ReguNet Partners; their structural optimization in terms of potency, selectivity, bioavailability and metabolic stability through the interaction with biologists and computational scientists in other hosting institutions; and the rational design and synthesis of hit-derived chemical probes for mechanistic studies on RBPs in specific disease environments;
- **Technical training on state-of-the-art research infrastructure and instrumentation** in organic synthesis / medicinal chemistry (i.e., but not limited to, microwave synthesizers, flow chemistry equipment, parallel liquid and solid phase synthesizers), in organic compound purification (direct- and reverse phase analytical and semi-preparative equipment), and in analytical characterization (LC-MS, NMR equipment);
- Definition and development of a **Personal Career Development Plan (PCDP)**, guided by Prof. Seneci (UniMI, Supervisor) and Dr. Arosio (Co-supervisor) in consultation with the Training Committee;
- **Secondments** in labs with complementary and scientific integrated areas at beneficiaries jointly awarding the doctoral degree, in particular CIBIO-UniTN (biophysical techniques), IMMAGINA (molecular biology) and EMBL (cryo-EM).
- Acquisition of **entrepreneurial skills** by hosting or secondments to non-academic partners in RBP-ReguNet, and through a range of network-wide training activities at the "Industrial Chemistry" doctorate course at UniMI;

2.4. ELIGIBILITY CRITERIA

There are strict and preferred technical and scientific eligibility requirements for the DC position at the University of Milan in **medicinal chemistry** – "***Rational design, synthesis and structural optimization of drug-like modulators of RBPs***" (**D10**). As to the strict requirements

- Admission to D10 is *open* to applicants who hold a **MSc degree**, or a **comparable university degree**, in Chemistry, Industrial Chemistry, or Pharmaceutical Chemistry. As mentioned in Section

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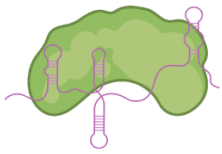

1, applicants are expected to achieve their degree within March 31st, 2023. They shall submit a certified copy of any degree achieved by the deadline of March 31st, 2023.

- **Essential technical-scientific competences** will include **experience and proficiency in organic chemistry**, in details related to
    - the synthesis of small organic molecules through iterative and parallel organic synthesis, using standard and modern, iterative and parallel synthetic instrumentation;
    - their analytical characterization using cutting-edge techniques (i.e., NMR, LC-MS) and interpreting the resulting spectra;
    - their purification using classical methods (i.e., extraction and crystallization) and modern chromatographic techniques (direct- and reverse phase, iterative and automated chromatography).

As to **preferred competences**, they include

- Previous experience in **medicinal chemistry research projects**, aiming to the rational design and synthesis of biologically active compounds;
- Previous experience in medchem projects targeted against **oncology** or **neurodegeneration** as therapeutic areas;
- Previous exposure to **structural optimization of biologically active compounds** following indications and discussions with **modeling scientists**, **in vitro and in vivo biologists**.

For further specific information regarding the **D10** position "***Rational design, synthesis and structural optimization of drug-like modulators of RBPs***" in medicinal chemistry at the **Università Statale di Milano** - *RBP-ReguNet*, please contact:

pierfausto.seneci@unimi.it

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