Courtesy translation of D.R. n. 247/2024

For more details on the selection process, please refer to the Italian version of D.R. n.247/2024 available at http://www.hunimed.eu/it/lavora-con-noi/

SELECTION PROCEDURE FOR RESEARCH FELLOWSHIP

Research Program Title	**In vitro models of the Blood-Brain Barrier (BBB) and NeuroVascular Unit (NVU) for studying RNA-based drugs**
Tutor	Dr. Marco Rasile
Scientific Area	05 – Biological Sciences
Gross amount of the fellowship	20.000 Euro
Duration of the fellowship	12 months
Objectives of the research	The project aims to develop in vitro humanized models of the Blood-Brain Barrier (BBB) and NeuroVascular Unit (NVU) using advanced microfluidics and lab-on-chip technologies. These models will allow the study of the effects of RNA-based drugs on the cellular components of the BBB, focusing on pharmacokinetics, diffusion, and transport. The platform will be versatile and suitable for studying various diseases, with a specific focus on Amyotrophic Lateral Sclerosis (ALS) in mouse models. ALS is a neurodegenerative disease that affects motor neurons, causing muscle weakness and paralysis. Since current therapies are limited, the project seeks to overcome the limitations of in vivo studies, providing precise experimental control and high-throughput screening of RNA drugs.
Activities to be carried out	1.Development and optimization of microfluidic models of the BBB/NVU. 2. Conducting in vitro experiments to assess the pharmacokinetics and transport of RNA drugs across the BBB. 3. Multi-omics analysis and pharmacodynamic studies under varying physiological conditions.

	4. In vivo experimentation on ALS mouse models to evaluate the efficacy and mechanism of action of RNA drugs, including pharmacokinetics and drug distribution studies. 5. Documentation and preparation of reports on obtained results, with comparison between in vitro and in vivo data.
Work place	PIEVE EMANUELE - Milan
Mandatory requirements	• Master of Science in Neuroscience, Master of Science in Biology, Master of Science in Biotechnology, Master of Science in Medical Biotechnology, Master of Science in Experimental and Applied Biology, Doctor of Medicine, Master of Science in Health Sciences, Master of Science in Biomedical Sciences, Master of Science in Psychology. • Adequate scientific and professional background to carry out the research activity described in this call.
Selection process	Application for admissions must be submitted at the following link**:** https://pica.cineca.it/humanitas No hard copy of the application must be sent by post. At first access, applicants need to register by clicking on "Register" and completing the requested data. If applicants already have LOGINMIUR credentials, they do not need to register again. They must access with their LOGINMIUR username and password in the relevant field LOGINMIUR. Applicants must enter all data necessary to produce the application and attach the required documents in PDF format.
Selection criteria	Selection criteria are predetermined by the Selection Committee. As part of the selection process, the Committee will evaluate the curriculum, titles and publications presented by the candidate and will consider, in particular. Necessary Requirements: • Good command of the English language. • Good knowledge of cell culture techniques.

	Preferred Requirements: • Competence in handling laboratory animals. • Basic knowledge of immunostaining and advanced imaging techniques. • Experience with FACS equipment (flow cytometry and cell sorting). • Experience in managing in vitro BBB/NVU systems and/or lab-on-chip technologies. • Previous experience in RNA drug research. • Ability to work in a team and strong communication skills. • Research experience or training abroad.

FURTHER INFORMATION:

In the event of any conflict between Job Opening text and Italian D.R. text, the Italian version will prevail.

For more details on the selection process please refer to the **D.R. n. 247/2024** (http://www.hunimed.eu/it/lavora-con-noi/) or send an inquiry to ufficiodocenti@hunimed.eu or telephone +39 02.8224.5642/5421.