Courtesy translation of D.R. n. 249/2024

For more details on the selection process, please refer to the Italian version of D.R. n.249/2024 available at http://www.hunimed.eu/it/lavora-con-noi/

SELECTION PROCEDURE FOR RESEARCH FELLOWSHIP

Research Program Title	**Functional validation of RNA-based drugs in the central neurvous system (IPSC profile)**
Tutor	Prof.ssa Simona Lodato
Scientific Area	05 - Biological Sciences
Gross amount of the fellowship	20.000 Euro
Duration of the fellowship	12 months
Objectives of the research	RNA therapy implies the use of RNA-based molecules to modulate biological pathways to cure specific conditions, and advancement in the RNA-targeting field allow a wide range of applications to treat rare and common diseases. RNA drugs can be classified into three categories: 1) antisense oligonucleotides or RNA interference for modifying gene expression; 2) RNA molecules that can modulate the function of proteins; and 3) mRNA drugs encoding proteins. In this project, we will employ multiple model systems (including pure cultures and co-cultures of neurons, astrocytes, and microglia obtained from the differentiation of patient-derived iPSC cells as well as 3D organoids and assembloids obtained from the differentiation of patient-derived iPSC cells, as well as microfluidic models of neurovascular barriers) to test new RNA drugs for the treatment of genetic diseases impacting on the central nervous system by exploiting novel strategies that allow an in-depth characterization of their pharmacodynamic profile and pharmacokinetics. Functional characterization of the lead compounds will be followed through both electrophysiological and molecular analysis in multiple

	model systems to allow a comprehensive and integrated evaluation of the drug properties.
Activities to be carried out	• Maintenance and differentiation of human induced pluripotent stem cells, • generation of cortical organoids and assembloids, • immunofluorescence and in situ hybridization on cells and tissues, • sample preparation for live imaging, • RNA purification and qPCR, • molecular cloning and basic microbiology.
Work place	PIEVE EMANUELE - Milan
Mandatory requirements	• Master's degree in Biological Sciences, Neurobiology or Biotechnology. • 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: • Scientific and professional background suitable for carrying out the research activities in question; specifically requiring:

	• good technical skills in experimentation on induced pluripotent stem cell lines; • previous work experience in basic research laboratories in the fields of neuroscience and developmental biology; Experience in the field of pharmacology applied to research will be considered a preferential requirement.

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. 249/2024** (http://www.hunimed.eu/it/lavora-con-noi/) or send an inquiry to ufficiodocenti@hunimed.eu or telephone +39 02.8224.5642/5421.