



Courtesy translation of D.R. n. 046/2023

For more details on the selection process, please refer to the Italian version of D.R. n. 046/20232 available at <http://www.hunimed.eu/it/lavora-con-noi/>

SELECTION PROCEDURE FOR RESEARCH FELLOWSHIP

| | |
|--------------------------------|--|
| Research Program Title | Single-cell dissection of the cellular ecosystem in hepatocellular carcinoma |
| Tutor | Prof. Luigi Maria TERRACCIANO |
| Scientific Area | 06 – Medical Sciences |
| Gross amount of the fellowship | 30.000 Euro |
| Duration of the fellowship | 12 months |
| Objectives of the research | <p>We hypothesize that by combining the resolution of single cell RNA sequencing (scRNA-seq) in situ visualization and the power afforded by large cohorts of bulk RNA-sequencing of HCCs we will be able to better characterize HCC from both tumor-centric and tissue microenvironment (TME)-centric perspectives, and to identify somatic genetic alterations that may modulate the TME in HCC.</p> <p>The aims of this project are 1) to dissect the cellular composition of HCC, 2) to define transcriptional cell states of the tumor cells that are associated with distinct TME patterns in HCC and 3) to identify genetic features in HCC that may modulate TME heterogeneity and composition. For aim 1 we will use scRNA-seq and in situ visualization to determine the identity, abundance, cell type-specific gene signatures and spatial distribution of the various major and rare populations in HCC. To extend the findings by scRNA-seq to large HCC cohorts in aims 2 and 3, we will optimize and apply in silico virtual microdissection to define the molecular and cellular subclasses of HCC from both tumor-centric and TME-centric perspectives and to identify the genetic features that may modulate the TME.</p> |

| | |
|-------------------------------------|---|
| <p>Activities to be carried out</p> | <ul style="list-style-type: none"> - Mutational analysis and sequencing of DNA and RNA in fresh and paraffin samples; - primers design and Sanger direct sequencing; - establishment of primary cell cultures; - preparation of HCC organoids from liver biopsy. |
| <p>Work place</p> | <p>PIEVE EMANUELE - Milan</p> |
| <p>Mandatory requirements</p> | <ul style="list-style-type: none"> - PhD in Genetics, Biostatistical sciences, Biomedical Engineering, Biological Sciences, Bioinformatics sciences or related discipline - Professional CV suitable to the carrying out of the research activities outlined above |
| <p>Selection process</p> | <p>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.</p> |
| <p>Selection criteria</p> | <p>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:</p> <ul style="list-style-type: none"> - Minimal/theoretical experience in NGS sequencing of DNA and RNA; - Experience in molecular biology (i.e. cell culture); - At least elementary competence in bioinformatics methods; - Experience in biology of hepatobiliary cancer; |

| | |
|--|---|
| | <ul style="list-style-type: none">- Ability to work in group and follow young PhD students;- Advanced knowledge of written and spoken English. |
|--|---|

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. 046/2023** (<http://www.hunimed.eu/it/lavora-con-noi/>) or send an inquiry to ufficiodocenti@hunimed.eu or telephone +39 02.8224.5642/5421.