

HUMANITAS UNIVERSITY

Selection procedure for 1 Type B Research Fellowship in Life Sciences in compliance with art. 22 of Law 240/2010

Humanitas University invites applications for 1 position as Research Fellow in Life Sciences.

Research Program Title	<p>“L'ecosistema cellulare del carcinoma epatocellulare: analisi di sequenziamento molecolare dell'RNA dei singoli elementi cellulari che compongono il "microambiente" della neoplasia.”</p> <p><i>Courtesy translation:</i> Single-cell dissection of the cellular ecosystem in hepatocellular carcinoma.</p>
Tutor	Prof. Luigi 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</p>

	<p>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>	<p>The main focus of the laboratory is the use of multi-omics approaches to identify and characterize biomarkers and to understand the important genetic alterations and their interactions that contribute to the development of liver cancer. The research topics will also include studying predictive biomarkers and targeted agents in liver cancer. The primary responsibilities will include experimental validation of newly discovered cancer targets and predictive biomarkers, characterization of their molecular basis, confirming their role in tumor initiation, progression, and/or therapeutic resistance in vitro and in vivo, pinpointing their mechanisms of action, elucidating their clinical significance using patient samples, and exploring potential clinical applications.</p>

The work place is in Pieve Emanuele - Milano.

A brief description of the project, activities to be carried out, mandatory requirements to take part into the selection process, information on the application procedure and on the selection criteria are presented in the following.

RESEARCH PROJECT:

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ACTIVITIES TO BE CARRIED OUT:

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MANDATORY REQUIREMENTS:

In order to be considered for the post candidates must hold a PhD in genetics, biology, biotechnology, molecular/cellular biology or related discipline.

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.

The laboratory has extensive collaborations with top national and international investigators in molecular pathology and cancer 'omics. The candidate will have the opportunity to develop, apply and optimize cutting-edge bioinformatics methods, in particular those for massively parallel sequencing, to further our understanding of cancer biology. The candidate will have the flexibility to develop their own projects within the scope of the areas of interest within the laboratory. The candidate will also assist in the supervision of PhD students. Hands-on experience with next-generation sequencing and genomics, strong computational and/or statistical skills and ability to work independently are required.

Experience with cancer genomics and an understanding of cancer biology would be highly desirable. The ideal candidate would have strong oral and written communications skills in English.

FURTHER INFORMATION:

For more details on the selection process please refer to the **Rectorate Decree n. 137/2020** (<http://www.hunimed.eu/it/lavora-con-noi/>) or send an inquiry to ufficiodocenti@hunimed.eu or telephone +39 02.8224.5642/5421.