



Courtesy translation of D.R. n. 106/2021

For more details on the selection process, please refer to the Italian version of

D.R. n. 106/2021 available at <http://www.hunimed.eu/it/lavora-con-noi/>

SELECTION PROCEDURE FOR A RESEARCH FELLOWSHIP 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	Role of high-throughput sequencing of circulating tumor DNA (ctDNA) for disease outcome prediction and monitoring in Diffuse Large B-Cell Lymphoma (DLBCL)
Tutor	Prof. Carmelo CARLO-STELLA
Scientific Area	06 - Medical Sciences
Gross amount of the fellowship	24.000 Euro
Duration of the fellowship	12 months
Objectives of the research	<p>The clinical outcome for relapsed (R) and refractory (R) Diffuse Large B-cell lymphoma (DLBCL) remains poor despite recent approvals of novel types of cellular- and antibody- based immunotherapy.</p> <p>We hypothesize that a liquid biopsy-based strategy using high-throughput sequencing of circulating tumor DNA (ctDNA) may improve disease outcome prediction and monitoring of R/R DLBCL.</p> <p>To test this hypothesis, we will perform a prospective study in R/R DLBCL patients undergoing cellular- and antibody-based immunotherapy to validate analysis of ctDNA as a novel approach to predict disease outcome and monitor minimal residual disease (MRD).</p> <p>We expect that this ctDNA-based translational research strategy will improve: (i) risk stratification of DLBCL, (ii) identification of treatment-emergent clones associated with refractory disease, (iii) generation of innovative therapeutic algorithm, (iv) definition of criteria for assessment of disease response, (v) design individualized therapeutic approaches.</p>
Activities to be carried out	<ol style="list-style-type: none"> 1. Collection of plasma from blood samples using tubes preserving circulating tumor cell-free DNA (ctDNA). 2. Isolation of Mononuclear Cells from Peripheral Blood (PBMCs). 3. Extraction of ctDNA from plasma through the use of commercial kits.

	<p>4. Germline DNA (gDNA) extraction from PBMCs through the use of commercial kits; fragmentation of gDNA to obtain DNA fragments allowing optimal sequencing.</p> <p>5. Conversion of ctDNA isolated from plasma and gDNA extracted from PBMCs into libraries for Next Generation Sequencing (NGS).</p> <p>6. Selection of the genes of interest starting from the ctDNA and gDNA libraries through hybrid selection developed with specific gene probes. The gene panel is optimized to include coding regions, splicing sites and Aberrant Somatic Hyper Mutation (ASHM) regions of 133 genes (320 Kb) that are recurrently mutated in B-cell diseases.</p> <p>7. Quantity control of ctDNA and gDNA, of their libraries and captures through the use of fluorimetric systems and quality evaluation of the size of the fragments contained in each sample.</p> <p>8. Sequencing of capture product with the Illumina NextSeq 500 Sequencing platform.</p> <p>9. Somatic mutation analysis of the sequencing product with bioinformatics pipeline and interpretation of the data obtained in order to correlate with clinical course and disease outcome.</p>
Work place	PIEVE EMANUELE - Milan
Mandatory requirements	<p>Master Degree in Medical Biotechnology</p> <p>Scientific and professional CV suitable to the carrying out of the research activities outlined above.</p>
Selection process	<p>Application for admissions must be submitted at the following link: https://pica.cineca.it/humanitas</p> <p>No hard copy of the application must be sent by post.</p> <p>At first access, applicants need to register by clicking on “Register” and completing the requested data.</p> <p>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.</p> <p>Applicants must enter all data necessary to produce the application and attach the required documents in PDF format.</p>
Selection criteria	<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">• Technical skills• Working experiences• Theoretical knowledge
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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. 106/2021** (<http://www.hunimed.eu/it/lavora-con-noi/>) or send an inquiry to ufficiodocenti@hunimed.eu or telephone +39 02.8224.5642/5421..