



Courtesy translation of D.R. n. 128/2022

For more details on the selection process, please refer to the Italian version of D.R. n. 128/2022 available at <http://www.hunimed.eu/it/lavora-con-noi/>

SELECTION PROCEDURE FOR RESEARCH FELLOWSHIP

Research Program Title	Analysis of the involvement of the immune system and the microbiota in the activity of targeted monoclonal antibodies during treatment of breast cancer
Tutor	Prof.ssa Maria RESCIGNO
Scientific Area	05 – Biological Sciences
Gross amount of the fellowship	25.000 Euro
Duration of the fellowship	15 months
Objectives of the research	Inflammation is a hallmark of cancer and could predict response to therapy. Here, we studied the effect of Chitinase 3-like 1 (CHI3L1), an inflammatory protein widely expressed in cancer, on the effector immune response. We found that CHI3L1 inhibits natural and antibody-dependent NK cell cytotoxicity. Mechanistically, CHI3L1 prevented the correct polarization of the NK lytic machinery by inhibiting the receptor of advanced glycation end-products (RAGE) and its downstream JNK signaling. Our work identifies CHI3L1 as an inhibitor of NK cell tumor surveillance and an important mediator of resistance to HER2 targeted therapy and potentially other NK cell-based therapeutics. Furthermore, we will analyze patient derived tumoral and fecal microbiota and their correlation with Trastuzumab response and CHI3L1 level. Given the important role of CHI3L1 in the response to bacteria, and biofilm formation, it is likely that the microbiota may be responsible for CHI3L1 upregulation and eventually also response to Trastuzumab therapy.

<p>Activities to be carried out</p>	<p>The candidate will perform:</p> <ul style="list-style-type: none"> - -immunofluorescence stainings of breast cancer tissues of her2+ responders and non-responders patients to trastuzumab/pertuzumab therapy. - fecal and intratumoral 16S rRNA analysis responders and non-responders patients to trastuzumab/pertuzumab therapy. - isolate intratumoral bacteria from responders and non-responders patients to trastuzumab/pertuzumab therapy. - Assess the capability of the strains to induce the expression of chitinase on tumor and immune cells - Assess the ability of CHI3L1 to induce biofilms of these strains.
<p>Work place</p>	<p>PIEVE EMANUELE - Milan</p>
<p>Mandatory requirements</p>	<p>In order to be considered for the post candidates must hold a PhD in biological sciences or equivalent.</p>
<p>Selection process</p>	<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. 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"> - good knowledge in immunology, cell culture, molecular biology, cytometry and microscopy.



	- fluent scientific English (written and spoken) is required.
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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. 128/2022** (<http://www.hunimed.eu/it/lavora-con-noi/>) or send an inquiry to ufficiodocenti@hunimed.eu or telephone +39 02.8224.5642/5421.