

**Project title:****IMMUNOLOGICAL SURVEILLANCE PROTOCOL TO ASSESS THE EFFECTIVENESS AND DURATION OF POST-INFECTION IMMUNITY FROM SARS-COV-2 IN A COHORT OF HEMATOLOGICAL PATIENTS****Acronym/working title:**

ema-NTA

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**Project summary**

In December 2019, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) emerged in China, and it has since spread widely across the world. The resulting coronavirus disease 2019 (COVID-19) has led to a high death toll. Scientific knowledge on SARS-CoV-2 has evolved rapidly since the outbreak, but little is known about responses to the virus in immunocompromised populations, e.g. the hematological patients.

In this regard, despite the reduced amount of literature, hematological patients have been observed to develop frequently persistent infections caused by SARS-CoV-2, with the induction of variable humoral response, quite often delayed or reduced in comparison to the general population. This evidence might explain why some population groups, such as hematological patients, have increased morbidity and mortality upon SARS-CoV-2 infection.

This research project, named ema-NTA, aims at analyzing the humoral immune response in SARS-CoV-2 infected hematological patients which have had and got over Covid-19 disease. Briefly, patients' sera will be analyzed with commercial indirect ELISA tests in order to detect the presence of antibodies, subclass IgG, recognizing the SARS-CoV-2 surface glycoprotein. Subsequently the positive sera will be tested with an innovative assay developed by the Molecular Virology Laboratory (UPO): the SARS-CoV-2 Neutralization assay (NTA). The neutralization assay, using a chimera virus that own antigenic features of the SARS-CoV-2 virus itself, allows to detect the neutralizing antibodies, a small subset of antibodies that bind the virus and are able to block the infection

The goal of this study aims at identifying potential differences in terms of neutralizing ability between both the different hematological pathologies and the therapy carried out, in order to understand the immune response in this population

**Duration of Study***Total duration of the study: 1 year**Study start: March 2021**Study end: April 2022***Total number of participants involved:**

200

**Biological samples collected:**

- ✓ serum
- ✓ plasma sodium-citrate
- ✓ plasma EDTA
- ✓ buffy coat
- ✓ PBMC