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EDUCATION

2025 - current PhD Student in Biomedical Sciences with an track in Microbiology, Immunology and Biochemistry – University of Tennessee Health Sciences Center

2023 - 2025 Master Student in Clinical Medicine with an emphasis in Immunology - Federal University of Rio de Janeiro

2017-2022 Bachelor in Biological Sciences with an emphasis in Biomedical Sciences - Federal University of Rio de Janeiro

RESEARCH EXPERIENCE

2025-current- Research in Eastern Equine Encephalitis Virus

2023 - 2025 - Mapping linear antibody epitopes in COVID-19 infection (Master in Clinical Medicine Graduate Program from Faculty of Medicine) - Federal University of Rio de Janeiro

I am investigating the presence of linear B lymphocyte epitopes of the spike (S), envelope (E), and membrane (M) proteins of SARS-CoV-2, characterized as vaccine targets. For this purpose, I am performing an *in silico* analysis of a peptide microarray (peptide array) containing sequences of 15 amino acids with an overlap of 14 bases, covering the expressed sequences of the viral genome. From serum of asymptomatic infected patients, I verified the presence of immunodominant linear peptide epitopes (15aa) for the vaccine induction of protective antibodies. It is expected that such approaches will be able to provide a set of selected epitopes useful to guide experimental efforts for the development of vaccines against SARS-CoV-2.

2019-2022 - Characterization of the Infection of murine Raw 264.7 macrophage cells by Mayaro Virus in different nutritional conditions - Federal University of Rio de Janeiro

The study investigated how two distinct culture media DMEM and RPMI influence Mayaro virus (MAYV) infection in RAW 264.7 macrophage cells. Considering the infected cells, the cell survival rates diverged significantly from 24h-post infection (hpi), with RPMI showing lower survival by 48 hpi compared to DMEM, at the same time the control cells showed the same death levels between the media at all times. Despite these differences, viral replication levels assessed through Plaque Assay remained comparable between both conditions throughout various infection times. Additionally, no significant variations were detected in TNF-alpha secretion across infected and control groups, while IL-6 production was absent across all conditions. These findings indicate that while nutrient variations impact infection severity, they do not correlate with altered viral replication or immune responses in this model.

2020-2021 Detection of SARS COV-2 antibodies production and vaccine response in academic community of IBqM- Federal University of Rio de Janeiro

During the COVID-19 pandemic, the Virus Biochemistry Laboratory, where I performed a internship and my undergraduate thesis, was responsible for carrying out serological testing to detect antibodies directed to the SARS-CoV-2 virus in the serum of Leopoldo De Meis Medical Biochemistry Institute-UFRJ (IBqM-UFRJ) members. In this project, I needed classified and stored human samples and at the same time developed ELISA to test them. The production of antibodies to SARS-Cov-2 before and after

the vaccination was verified, providing us the comparison of serum conversion and vaccine-immune response between the individuals and between different types of COVID-19 vaccines. This research had been conducted concomitantly since the vaccination started in the city of Rio de Janeiro, so there was a variation on what kind of vaccine was administered depending on the age of individual and health unit chosen by them to shoot. It was very honored to participate in a project created as a response to biggest health crisis in the last 20 years.

2017-2017 Neurogenesis in subventricular zone of the brain from postnatal mice

In this project, we investigated the production of neurons in the Subventricular Zone of postnatal mice. Were performed the dyeing the subventricular zone of the brain of postnatal animals in order to verify the existence of neurons produced in that area of the brain. Subsequently, these organs were sectioned in the microtome. Finally, slides were assembled with the slides and taken to the confocal microscope. With this, images capable of verifying the existence of neurogenesis in the determined brain region were made.

PRESENTATIONS

2025- Master Thesis named "Mapping linear antibody epitopes in COVID-19 infection"

ORAL PRESENTATIONS

2022 -11th UFRJ Academic Integration Week

Characterization of Mayaro virus infection in a murine macrophage strain (RAW 264.7) cultivated in culture media with nutritional differences

POSTER PRESENTATIONS

2024-14th ALACI(Latin American and Caribbean Association of Immunology) Congress

Mapping linear antibody epitopes in COVID-19 infection

2021-XLII Scientific, Artistic and Cultural Initiation Journey Giulio Massarani

Characterization of Mayaro virus infection in a murine macrophage strain (J774.1)

IN PROGRESS

Paper about antibodies production stimulated by COVID-19 vaccine targets

ADDITIONAL ACTIVITIES

2019-2022 Member of "Ser Cientista" Virus Biochemistry Laboratory Extension project

Participation in workshops to promote biology teaching using the scientific method and experimentation in elementary school classes in public schools in the city of Rio de Janeiro and the metropolitan region. This project focused on science communication to stimulate teachers and students on experimental-practice scientific learning.