



SILVIA PICCOLO

PhD student

PROFILE

Graduated in Biology Applied to Research in Biomedicine in 2023 from the University of Milan. I'm currently PhD student at IUSS of Pavia. I work in the team led by Prof. Anna Kajaste-Rudnitski at SR-Tiget at the San Raffaele Hospital in Milan, Italy. My project is based on the innate immune barriers affecting lentiviral gene therapy vectors.

WORK EXPERIENCE



October 2024 - on going

PhD Student

Istituto Superiore di Pavia (IUSS), Pavia - Italy
PhD in Biomolecular sciences and Biotechnologies

Laboratory of Molecular Mechanisms of Innate Immunity and Nucleic Acid Recognition

The aim of the research is to investigate innate immunity to gene therapy vectors in the central nervous system. Specifically, to understand and improve the role of adeno-associated viruses and viral vectors in central nervous system diseases, reduce controversial effects and enhance the specificity of treatment.



February 2024 - December 2024

Research Fellow

San Raffaele Scientific Institute, Milan - Italy
Retrovirus-host interactions and innate immunity to gene transfer Unit

The research aims to characterize molecular mechanisms of innate immune restriction of viral gene therapy vectors with the goal of rendering gene engineering as inert as possible, while maximizing its efficiency in relevant target tissues such as the hematopoietic stem cell compartment. Specifically, I am involved in the study of the IFN-inducible antiviral protein IFITM3 that the team has shown to potently block lentiviral vector entry into hematopoietic stem cells.

In this context, I am in charge of dissecting the newly identified role of the IFITM3 in DNA damage responses. For this purpose. My work will help elucidate how IFITM3 can contribute to antiviral restriction of incoming gene therapy vectors as well as the maintenance of genomic integrity in the context of healthy and malignant hematopoiesis. To expand our investigations to other gene therapy target tissues, I am also learning to handle and differentiate induced pluripotent stem cells (iPSC) into cells of the human central nervous system.



October 2022 - January 2024

Internship

San Raffaele Scientific Institute, Milan – Italy

Infections and Cystic Fibrosis Unit

The research aimed to define the anti-bacterial effects of Kaftrio and to identify specific strains of *Pseudomonas aeruginosa* that may represent a risk factor for the efficacy of this drug. My role in the team was to study phenotypes and genotypes of *P. aeruginosa* strains isolated from cystic fibrosis patients during the treatment with Kaftrio, with the aim to identify specific characteristics of the bacteria that could compromise the efficacy of the therapy.

LANGUAGES

English: Fluent

Italian: Mother language

EDUCATION



2021 - 2023 - University of Milan

Master's degree in Biology Applied to Research in Biomedicine (LM-6)

Thesis: Effetti del Trikafta sull'infezione da pseudomonas aeruginosa nelle vie aeree dei pazienti affetti da fibrosi cistica



UNIVERSITÀ
DEGLI STUDI
DELL'AQUILA

2018 - 2021 - University of L'Aquila

Bachelor's degree in Biological Sciences (L-13)

Thesis: The precision medicine in colorectal cancer

OTHER EXPERIENCE



Croce Rossa Italiana

2022 - 2024

Italian Red Cross, Peschiera Borromeo - Milan

Red cross volunteer



2023 - on going

Progetto carcere Università degli studi di Milano - Milano

Prison volunteer