

BIOGRAPHICAL SKETCH

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NAME: Claudio Fenizia

POSITION TITLE: Associate Professor of Immunology and Immunopathology

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
University of Milan, Italy	BS	10/2006	Medical Biotechnology
University of Milan, Italy	PhD	12/2009	Molecular Medicine of Immune and Inflammatory Reactions
National Cancer Institute (NIH), MD, USA	Postdoctoral	02/2014	Virus-related immune responses
Telethon, Italy	Postdoctoral	12/2016	Cancer development

A. Personal Statement

I am an Associate Professor of Immunology and Immunopathology, and my research is focused on immunological reactions upon exposure to stressors. I have a broad background in immunology, with specific training and expertise in viruses, monocyte/macrophages and adaptive immune response.

As PI or co-Investigator on several University or Ministry of Education-funded grants, I laid the groundwork for the proposed research by describing the immune determinants linked to resistance or susceptibility to viral infections (i.e. HIV, HTLV, SARS-CoV-2 among others). In addition, I had the chance to collaborate on immunological processes related to cancer or transplantation.

Recently, I moved my research interests to the immunology related to microplastics exposure. Our research activity is aimed at dissecting the effects of micro(nano)plastics (MNPs) by a multilevel approach: from human *ex vivo* surgical resection to *in vitro* cellular models, to an *in vivo* murine model.

Furthermore, I effectively managed all aspects of the projects—including staffing, research compliance, and budgeting—while collaborating closely with fellow researchers. These efforts resulted in multiple peer-reviewed publications from each initiative. In conclusion, I possess the expertise, leadership, training, and drive essential to successfully execute the proposed research project.

Ongoing and recently completed projects that I would like to highlight include:

1) PRIN-PNRR 2022, P2022ZEFW4, acronimo: ImmuPlastics, titolo: Effects of microplastics on the immune system: from the bedside to the bench, and back. (Bando competitivo, totale finanziato: 240108€, Ente finanziatore MUR e Unione Europea attraverso NextGenEU, PNRR, durata biennale, ruolo: Coordinatore Nazionale).

2) PRIN 2022, 2022HTJX8F, titolo: Monitoring long-term clinical, virological, and immunological outcomes in COVID-19 patients: a multifaceted management. (Bando competitivo, totale finanziato: 175956€, Ente finanziatore MUR, durata biennale, ruolo: Responsabile di Unità).

3) PSR 2022, titolo: Effects of microplastics on the immune system. (Bando competitivo, piano di sostegno alla ricerca di UNIMI, totale finanziato: 12000€, durata biennale, ruolo: Principal investigator).

4) PSR 2020, titolo: The role of the Trained Immunity during SARS-CoV-2 infection. (Bando competitivo, piano di sostegno alla ricerca di UNIMI, totale finanziato: 11500€, durata biennale, ruolo: Principal investigator).

- 5) PNRR 2022, PNRR-MAD-2022-12376927(CTE_NAZPU24_CFENI01), titolo: The etiopatological basis of gate derangement in Parkinson's disease. (Bando competitivo, Unione Europea attraverso NextGenEU, PNRR, totale finanziato: 504843€, durata biennale, ruolo: Responsabile di Unità).
- 6) GSA (Grandi Sfide di Ateneo), Acronimo: HEBE, titolo: Healthy aging versus inflamm-aging: the role of physical Exercise in modulating the Biomarkers of age-associated and Environmentally determined chronic diseases. (Bando competitivo, a partire da gennaio 2022, durata triennale, I anno 150000€, II anno 160000€, ruolo: Collaboratore).

B. Positions, Scientific Appointments, and Honors

University of Milan, Italy RTD-A 12/2019 Virus-related immune responses
University of Milan, Italy RTD-B 09/2021 Virus-related immune responses
University of Milan, Italy Associate Professor present Microplastics-related immune responses

C. Contributions to Science

1. Research on HIV and HTLV

My scientific work has extensively focused on the interactions between the immune systems and human retroviruses HIV-1, HTLV-1 and HTLV-2, with a particular emphasis on the immunological mechanisms influencing disease progression. Through experimental studies and animal models, I have contributed to elucidating how infection (or co-infection) can modulate immune responses and the clinical course of HIV-1, highlighting the role of viral regulatory proteins and cellular responses in retroviral interference.

2. Research on SARS-CoV-2

During the COVID-19 pandemic, I concentrated my research on the vertical transmission of SARS-CoV-2, investigating the possibility of intrauterine infection and its implications for maternal and neonatal health. By analyzing placental and neonatal samples, I provided critical evidence of viral presence in the fetal compartment and explored the immunological mechanisms involved in the neonatal response to infection, offering important insights into mother-to-child transmission of SARS-CoV-2.

3. Research on Microplastics

My most recent research has shifted toward studying the effects of microplastics on the human immune system. Specifically, I have examined how prolonged exposure to microplastics may influence immune responses, helping to define the potential health risks associated with the accumulation of these particles in human tissues.

Complete List of Published Work:

<https://pubmed.ncbi.nlm.nih.gov/?term=fenizia+c&sort=date>