



Mara Martino

ABOUT ME

Immunology researcher with experience in clinical and experimental studies on infectious diseases, vaccine responses, and immune mechanisms. Research background includes HIV, SARS-CoV-2, and emerging viral pathogens in both national and international projects. Skilled in conducting laboratory-based investigations and data analysis. Experienced in collaborative, multidisciplinary research environments. Focused on advancing knowledge of immunity and disease prevention.

EXPERIENCE, TRAINING AND EDUCATION

07/2017

Diploma

High school diploma of maturity in chemistry, materials and biotechnology health Institute of Higher Secondary Education "Nicolucci- Reggio" with 100/100

10/2022

Degree

Specialistic 5-years degree in Pharmaceutical chemistry and technology at the University of Ferrara with 109. Title of the thesis "Analysis of cell cytotoxicity mediated by hiv-specific antibodies: standardisation of a Rapid Fluorometric Antibody-Dependent Cell-mediated Cytotoxicity protocol in vitro". Supervisor: Prof. Riccardo

11/2022 - CURRENT

PhD

PhD student in Advanced Therapies and Experimental Pharmacology at the Department of Chemical, Pharmaceutical and Agricultural Sciences (DOCPAS), University of Ferrara, Italy, with a fellowship funded by the Istituto Superiore di Sanità (ISS), Rome.

06/2025 - 10/2025

Training in BLS-3 laboratory

Completed advanced training in BSL-3 (P3) laboratory practices at the Istituto Superiore di Sanità (ISS), Rome, with hands-on experience in HIV experimental virology, including transfection, titration, and infection assays using both pseudoviruses and replication-competent HIV strains

11/2023

Licenses

Pharmacist Professional License

RESEARCH AREAS OF INTEREST

Study of the immunological profile of seronegative/seropositive patients in clinical trials in collaboration with the Istituto Superiore della Sanità (Rome)

Investigation of cellular mechanisms driving ADCC (Antibody-Dependent Cellular Cytotoxicity)

Study of vaccine immune responses

1. Characterization of cellular and humoral SARS-CoV-2 specific immune responses in subjects vaccinated with the BioNTech vaccine and the Astrazeneca vaccine;
2. Analysis of protection correlates in subjects of different age groups.

Arboviral diseases in Brazil, Italy and Tanzania: towards a comprehensive One Health strategy for the virological, epidemiological, entomological and immunological profiling

PROFESSIONAL SKILLS

Cell culture

1. Assessing cell proliferation,
2. in vitro priming of naïve T cells,
3. Stimulating memory T and B cells,

- Growing mammalian cells in vitro
- Cell culture maintenance and expansion of adherent and suspension cell cultures (primary and immortalized cell lines),
- Cell differentiation protocols

Flow cytometry

- surface, intracellular, intranuclear and phosphoflow staining
- Immunological assays: evaluation of antibody titers (IgA, IgG, IgM ELISA assays), detection of cytokine release (ELISpot, intracellular cytokines staining), immunophenotyping, analysis of epitope- specific CD8⁺ T cells, and assessment of cellular metabolism

Fluorescence Microscopy for cellular imaging and analysis

Confocal Microscopy for cellular imaging and analysis

Confocal Microscopy for live-cell time-lapse

Experience working in Biosafety Level 3 (BSL-3) laboratories

Experienced in performing transfections with both HIV pseudoviruses and replication-competent viruses

Skilled in virus titration using pseudoviruses and replication-competent HIV strains.

Proficient in conducting infection assays with pseudoviruses and replication-competent HIV.

Safety training

High level (chemical, biological and physical risk) 29/05/2024

Performing statistical analysis of results: groups comparison with parametrical and non-parametrical statistic test and linear regression

Designing in vitro and in vivo experimental protocols

Software

- BD FACSDiva
- FlowJo software
- GraphPrism
- BioRender
- Fiji

Preclinical studies

Safety, efficacy and immunogenicity assessment of viral vectors prophylactic and therapeutic vaccine candidate in murine models (C57/BL6 and Balb/C) and guinea pigs, in compliance with Italian Decree DM 05/08/2021.

Procedures include:

- Anesthesia
- Intradermale, subcutaneous, intravaginal and intraperitoneal administration,
- Blood sampling,
- Organ collection,
- Necroscopy

Blood separation techniques

Separation of blood components and isolation of mononuclear cells from whole blood by Ficoll density gradient centrifugation for downstream immunological assay.

LANGUAGE SKILLS

Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B2	B2	B2	B2	B2

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
FRENCH	B1	B1	B1	B1	A2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

CONFERENCES AND SEMINARS

06/03/2023 – 10/03/2023 Webinar

The Virtual School of Immunology 2023, SIICA Junior Faculty

22/05/2023 – 25/05/2023 Verona, Italy

14th National Congress of Immunology (SIICA)

19/04/2024 – 21/04/2024 Urbino, Italy

Flow Cytometry course

Technical and methodological aspects in flow cytometry by BIOMEDIA

07/07/2024 – 09/07/2024 Bologna, Italy

8th National Congress of the Italian Society for Virology (SIV)

“Antibody-dependent cell-mediated cytotoxicity (ADCC) responses induced by Tat protein and specific antibodies”

M. Martino, A. Cafaro, E. Torreggiani, A. Caputo, A. Tripiciano, B. Dallan, D. Proietto, M. De Laurentis, E. Tassani, V. Francavilla, F. Mancini, M. Campagna, P. Monini, R. Gavioli, F. Nicoli, B. Ensoli [poster]

19/06/2024 – 21/06/2024 Rome, Italy

16th Italian Conference on AIDS and Antiviral Research (ICAR)

“Evaluation of functional antibodies against HIV ENV and Tat proteins: analysis of antibody-dependent cell-mediated cytotoxicity (ADCC)”

M. Martino, A. Cafaro, E. Torreggiani, A. Caputo, A. Tripiciano, B. Dallan, D. Proietto, M. De Laurentis, E. Tassani, V. Francavilla, F. Mancini, M. Campagna, P. Monini, R. Gavioli, F. Nicoli, B. Ensoli [poster]

22/07/2024 – 26/07/2024 Monaco, Germany

25th International AIDS conference

“Analysis of ADCC responses against HIV Env and Tat proteins: implications of HIV vaccine development”

M. Martino, A. Cafaro, E. Torreggiani, A. Caputo, A. Tripiciano, B. Dallan, D. Proietto, M. De Laurentis, E. Tassani, V. Francavilla, F. Mancini, M. Campagna, P. Monini, R. Gavioli, F. Nicoli, B. Ensoli [poster]

21/05/2025 – 23/05/2025 Padova, Italy

17th Italian Conference on AIDS and Antiviral Research (ICAR)

“A Rapid Fluorometric Approach for Evaluating ADCC Activity Against Different Forms of HIV-1 Env Protein”

M. Martino, E. Torreggiani, B. Dallan, A. Tripiciano, V. Francavilla, F. Mancini, M. Campagna, O. Picconi, C. Sgadari, D. Proietto, M. De Laurentis, E. Tassani, A. Caputo, R. Gavioli, A. Cafaro, B. Ensoli, F. Nicoli

17/06/2025 – 20/06/2025 Perugia, Italy

15th National Congress of Immunology (SIICA)

“Evaluation of broadly functional antibodies through the assessment of ADCC against HIV Env and Tat proteins: insights for HIV vaccine development”

Mara Martino, Elena Torreggiani, Beatrice Dallan, Aurelio Cafaro, Antonella Tripiciano, Vittorio Francavilla, Flavia Mancini, Massimo Campagna, Orietta Picconi, Cecilia Sgadari, Davide Proietto, Martina De Laurentis, Enrico Tassani, Paolo Monini, Antonella Caputo, Riccardo Gavioli, Barbara Ensoli, and Francesco Nicoli.
[oral]

22/06/2025 – 24/06/2025 Torino, Italy

9th National Congress of the Italian Society for Virology (SIV)

“Immune Memory and Cross-Reactivity in SARS-CoV-2: Insights from Hybrid and Vaccine-Induced Immunity”

Mara Martino, Beatrice Dallan, Davide Proietto, Martina De Laurentis, Eleonora Galleran, Sara Ghisellini, Amedeo Zurlo, Stefano Volpato, Benedetta Govoni, Michela Borghesi, Valentina Albanes, Victor Appay, Stefano Bonnini, Sian Llewellyn-Lacey, Salvatore Pacifico, David A. Price, Chiara Orlandi, Anna Casabianca, Elena Torreggiani, Riccardo Gavioli, Antonella Caputo, Francesco Nicoli. [poster]

TUTOR AND TEACHING ACTIVITY

03/2024 – 04/2024

Tutor in Microbiology Lab

Tutor (40h per year) in Microbiology lab, teaching Microbiology (BIO/19), for students of bachelor's degree in Biological Sciences, University of Ferrara, Italy. a.a. 2023/2024
Referent: Prof.ssa Antonella Caputo

03/2025 – 04/2025

Tutor in Microbiology Lab

Tutor (40h per year) in Microbiology lab, teaching Microbiology (BIO/19), for students of bachelor's degree in Biological Sciences, University of Ferrara, Italy. a.a. 2024/2025
Referent: Prof.ssa Antonella Caputo

Supervisor of students

Supervised theses for 13 students, including 11 undergraduate and 2 single-cycle master's degree students.

PUBLIC ENGAGEMENT

29/09/2023

Participant to "La Notte europea dei ricercatori"

Participant to "La Notte europea dei ricercatori", Piazza Castell in Ferrara, promoted by University of Ferrara and Istituto Nazionale di Fisica Nucleare- Sezione Ferrara, Italy.
Attends: 150-200

15/05/2024

Lesson on HIV and AIDS

Lesson (2h) on HIV and AIDS, awareness/sensitization, at High School- ISS N. Copernico A. Carpeggiani-Ferrara, Italy
Students: 20-30

07/02/2025

Lesson on "Sexually Transmitted Diseases"

Lesson (4h) on "Sexually Transmitted Diseases", awareness/sensitization, at Polo Biochimico Mammuth-Ferrara, Italy

15/04/2025

Lesson on HIV and AIDS

Lesson (2h) on HIV and AIDS, awareness/sensitization, at High School- Liceo Ludovico Ariosto-Ferrara, Italy
Students: 20-30

PUBLICATIONS

2024

Age differentially impacts adaptive immune responses induced by adenoviral versus mRNA vaccines against COVID-19.

Dallan B, Proietto D, De Laurentis M, Gallerani E, Martino M, Ghisellini S, Zurlo A, Volpato S, Govoni B, Borghesi M, Albanese V, Appay V, Bonnini S, Llewellyn-Lacey S, Pacifico S, Grumiro L, Brandolini M, Semprini S, Sambri V, Ladell K, Parry HM, Moss PAH, Price D, Caputo A, Gavioli R, Nicoli F

Nature Aging. 2024 Aug. PMID: 38918602

Journal Name: Nature Aging

2025

Generation of a human induced pluripotent stem cell line (UNIFEi001-A) from a patient with Spinocerebellar ataxia type 1 (SCA1)

Pappadà M, Melija S, Facchini M, Martino M, Minarini S, Caproni A, Nordi C, Rimessi P, Selvatici R, Marconi P.

Stem Cell Res. 2025 Mar;83:103637. doi: 10.1016/j.scr.2024.103637. Epub 2024 Dec 22. PMID: 39892158.

Journal Name: Stem Cell Res

PROJECTS

2022 – 2024

Evaluation of Tat and Tat-Env as targets for HIV interventions

Funding: Bill and Melinda Gates Foundation
PI: Prof. Riccardo Gavioli (University of Ferrara) and MD Ensoli Barbara (Istituto Superiore di Sanità)

2019 – 2024

T cell lipid metabolism as marker of HIV disease progression (MET-HIV)

Funding: GILEAD-Fellowship Program
PI: Professor Antonella Caputo (University of Ferrara)

2019 – 2024

Ricerca Finalizzata

Funding: Italian Ministry of Health
PI: MD Ensoli Barbara (Istituto Superiore di Sanità)

2019 – 2024

Valutazione delle risposte immune cellulari protettive contro WNV (RICEPROWN)

Funding: AVIS
PI: Prof. Riccardo Gavioli (University of Ferrara)

2021 – 2023

Risposte immuni SARS-CoV-2-specifiche indotte dai vaccini Pfizer e AstraZeneca in soggetti di diverse fasce di età (RIV)

Funding: University of Ferrara
PI: Prof. Riccardo Gavioli (University of Ferrara)

2024 – 2025

Effect of physical activity on accelerated ageing trajectories: impact on cardiovascular diseases and ageing biomarkers

Funding: PNRR- Italian Ministry of University and research
PI: Prof. Francesco Nicoli (University of Ferrara)

2025 – 2026

Arboviral diseases in Brazil, Italy and Tanzania: towards a comprehensive One Health strategy for the virological, epidemiological, entomological and immunological profiling

Funding: CIHLMU One Health Network Funds
PI: Mkunde Chachage, CIH-Alumna (1University of Dar es Salaam-Mbeya College of Health and Allied Sciences; 2NIMR-Mbeya Medical Research Center, Tanzania)

2025 – 2028

Tat immunogens for HIV vaccines in Africa

Funding: Bill and Melinda Gates Foundation
PI: Prof. Riccardo Gavioli (University of Ferrara) Dr.ssa Ensoli Barbara (Istituto Superiore di Sanità)

Il sottoscritto autorizza il trattamento dei propri dati personali ai sensi del GDPR 679/16 "Regolamento europeo sulla protezione dei dati personali". Il sottoscritto acconsente alla pubblicazione del presente curriculum vita sul sito dell'Università degli studi di Ferrara

Ferrara , 08/10/2025