

Personal data

Surname: Caccuri

Name: Francesca

Date and Place of birth: May 15, 1984, Cosenza, Italy

Citizenship: Italian

Organization: Section of Microbiology, Department of Molecular and Translational Medicine, University of Brescia, Brescia, Italy

Researcher unique identifier ORCID: <https://orcid.org/0000-0002-1923-9033>

Bibliometric indicators

- Scientific Publications (peer-reviewed): 111
- h-index: 26
- Total citations: 2215
- Academic age: 14

Current positions

- 2024 to date Full Professor of Microbiology and Clinical Microbiology at the Department of Molecular and Translational Medicine, University of Brescia, Brescia, Italy
- 2021 to date Director of the non-medical Microbiology and Virology Residency at the University of Brescia, Brescia, Italy

Previous positions

- 2019 to 2024 Associate Professor of Microbiology and Clinical Microbiology at the Department of Molecular and Translational Medicine, University of Brescia, Brescia, Italy
- 2016 to 2019 Assistant Professor of Microbiology and Clinical Microbiology. Department of Molecular and Translational Medicine, University of Brescia, Italy
- 2015 - 2016 Postdoctoral Fellow at the Medical School of the University of Brescia, Department of Molecular and Translational Medicine, Brescia, Italy
- 2014 - 2015 Postdoctoral Fellow at the Medical School of the University of Brescia, Department of Molecular and Translational Medicine, Brescia, Italy
- 2013 - 2014 Postdoctoral Fellow at the Medical School of the University of Brescia, Department of Molecular and Translational Medicine, Brescia, Italy
- 2012 - 2013 Postdoctoral Fellow at the National Institutes of Health/National Cancer institute (NIH/NCI), Animal models and Retroviral Section, Bethesda, MD, US
- 2011 - 2012 Postdoctoral Fellow at the Medical School of the University of Brescia, Applied and Experimental Medicine, Brescia, Italy

Education

- 2018 Residency in Virology and Microbiology, Department of Molecular and Translational Medicine, University of Brescia, Italy
- 2012 PhD in Virology and Microbiology, Department of Applied and Experimental Medicine, University of Brescia, Italy
- 2008 Professional qualification of Pharmacist-UNICAL, University of Calabria Arcavacata di Rende, Italy

- 2008 Master Degree in Pharmacy-UNICAL, University of Calabria Arcavacata di Rende, Italy
- Research and Professional experience

Training

- 2011 Guest Researcher at the Manchester Metropolitan University (MMU), Angiogenesis and Vascular Biology group, Manchester, UK
- 2009 - 2010 Guest Researcher at the at the University of Zurich (UZH), Virology Institute, Zurich, Switzerland
- 2009 - 2012 PhD student at the Department of Applied and Experimental Medicine, University of Brescia, Italy
- 2007 - 2008 Pre-thesis student at the Department of Applied and Experimental Medicine, University of Brescia, Italy

Technical skills and competences

Prof. Caccuri has published several papers on the biological activity of various viral proteins in different cells. She has been particularly involved in the study of the HIV-1 matrix protein p17-mediated angiogenesis and lymphangiogenesis both *in vitro* and *in vivo*, highlighting its possible pathogenic role in lymphomagenesis. Prof. Caccuri and colleagues were the first to describe the presence of p17 variants with B-cell growth promoting activity in HIV-1-infected patients with non-Hodgkin's lymphomas. She recently clarified the mechanism of p17 secretion by cells lacking active HIV replication and consequently viral protease activity, this finding points to the critical role of HIV as microenvironmental factor promoting lymphoma development. Moreover, Prof. Caccuri demonstrates the ability of p17 and its variants to promote human triple negative breast cancer cell aggressiveness. She was the first to describe the anti-metastatic activity of the herpesvirus type 6 (HHV-6) protein U94, demonstrating the ability of the viral protein, delivered by an amplicon vector, to inhibit cancer cell migration, proliferation and invasion *in vitro* and tumor growth and metastasization *in vivo*. Furthermore, Prof. Caccuri has a large experience in cell biology (with particular experience in the development of primary human endothelial cells), molecular biology, genetic engineering and immunology (vaccine development). Prof. Caccuri possesses a strong experience in viruses isolation and characterization as attested by the long experience in the research field of HIV and AIDS. In addition, she has skills in the isolation of different respiratory viruses including metapneumovirus. Recently, Prof. Caccuri has set up a method that allowed her to isolate the newly identified SARS-CoV-2 and its variants. Moreover, she has experience of testing the efficacy of anti-viral drugs *in vitro* on primary isolates. She has a solid experience in producing biologically active viral proteins, to test their pathogenic properties *in vitro* and *in vivo* and to evaluate interaction of this protein with other proteins or drugs, by using Surface Plasmon Resonance. She has been working in the lab directed by Dr. Genoveffa Franchini, Center for Cancer Research of the National Cancer Institute, Bethesda, MD, US. In Dr. Franchini's laboratory she collaborated in studies aimed to down-modulate regulators of immune response in HIV-1-infected individuals, using the macaque model of SIV infection. During her fellowship in Prof. Arnaldo Caruso's laboratory, Section of Microbiology, University of Brescia, Italy, she participates to the development of a therapeutic vaccine against AIDS that was successfully tested in a phase I clinical trial in Italy. In the laboratory of Prof. Cornel Fraefel at the Virology Institute of the University of Zurich, Switzerland, she acquired experience in developing, manipulating and using different viral vectors for gene therapy. Moreover, in the Angiogenesis and Vascular Biology laboratory at the Manchester Metropolitan University, UK, directed by Prof. Mark Slevin she matured a strong

experience in studying the mechanisms of aberrant angiogenesis in vascular, lymphatic and brain endothelial cells operated by viral proteins.

Awards

- Luria award, assigned at the “5th National Congress of the Italian Society for Virology”, 5-6 July 2021, Webinair, for the work presented “Identification of a novel getaway for SARS-CoV-2 entry into human endothelial cells”
- Second Desenzano young scientists award, received at the conference “Second Italian experience in biomedical research: young minds at work”, 24-25 October 2014, Desenzano del Garda, BS, Italy
- May 2016, Special Mention from the foundation “Andrea e Libi Lorini” of Milan, Italy, for the paper she published on PNAS in 2012 entitled “HIV-1 matrix protein p17 promotes angiogenesis via chemokine receptors CXCR1 and CXCR2”

Institutional responsibilities

- 2021 to date Member of the Faculty Council, School of Medicine, University of Brescia, Brescia, Italy
- 2021 to date Director of the non-medical Microbiology and Virology Residency at the University of Brescia, Brescia, Italy
- 2021 to date President of the integrate course of “Igiene generale, ambientale, microbiologia e metodologia della professione” at the University of Brescia, Brescia, Italy
- 2018 to date Member of the Board Regent for the non-medical Microbiology and Virology Residency at the University of Brescia, Brescia, Italy
- 2018 to date Member of the Board Regent for the medical Microbiology and Virology Residency at the University of Brescia, Brescia, Italy
- 2017 to date Member of the Board Regent for the PhD program of Biomedical Sciences and Translational Medicine at the University of Brescia, Brescia, Italy

Memberships of scientific societies

- SIV-ISV, Italian Society for Virology
- The International Cancer Microenvironment Society
- SIM, Italian Society of Microbiology

Major collaborations

- Prof. Giuseppe Novelli (University of Torvergata, Rome, Italy)
- Prof. Cornel Fraefel (University of Zurich, Zurich, Switzerland)
- Prof. Mark Slevin (Universitatea de Medicina, Farmacie, Stiinte se Technologie; "George Emil Palade" Targu-Mures, Romania)
- Prof. Carlos Alberto Guzman (Helmholtz Centre for Infection Research, Braunschweig, Germany)
- Prof. Miguel Castano (University of Lisbon, Lisbon, Portugal)
- Dr. Monica Vaccari (Tulane University, New Orleans, LA, US)
- Dr. Genoveffa Franchini (National Cancer Institute/National Institute of Health, Bethesda, MA, US)
- Dr. Robert Gallo (Institute of Human Virology, Baltimore, MA, US)

Patents

- September 2021: Patent n° 102021000023357. Title: “Peptidi con attività antiangiogenica”
- September 2020: Patent n° EP20194685.2. Title: Peptides endowed with angiogenic activity
- June 2019: Patent n° PCT/IB2019/054749. Title: Use of the U94 molecule of human herpesvirus 6 and derivatives thereof to increase or induce the expression of the HLA-G molecule

Peer reviewer for scientific journals, including

- Emerging Microbes & Infections
 - BBA - Molecular Basis of Disease
 - Translational Cancer Research
 - Oncotarget
 - Frontiers in Oncology
 - Frontiers in Immunology
 - Frontiers in Microbiology
 - Infection Genetics and evolution
 - The Journal of Infectious Diseases
 - Viruses
 - Journal of Virology
 - Journal of Medical Virology
 - Journal of Photochemistry & Photobiology
 - Journal of Translational Medicine
 - Experimental Neurology
 - Journal of Infectious Diseases
 - Bioorganic Chemistry
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- 2021 to date Guest Editor Frontiers in Pharmacology
 - 2021 to date Guest Editor for Microorganisms
 - 2020 to date Guest Editor for Viruses
 - 2020 to date Associate of Frontiers in Oncology
 - 2020 to date Member of the editorial board of Frontiers in Microbiology
 - 2018 to date Member of the editorial board of International Journal of Clinical Virology
 - 2016 to date Member of the editorial board of Cancer Microenvironment
 - 2016 to date Member of the editorial board of Journal of HIV and STD Research