
BIOGRAPHICAL SKETCH

NAME: CAROLINA SCAGNOLARI

e-mail carolina.scagnolari@uniroma1.it

POSITION TITLE: Full Professor of Microbiology and Clinical Microbiology

Academic Appointments:

2002 Single-cycle Master's degree (110/100 cum laude)

2006 PhD in Experimental Medicine Sapienza University of Rome

2008 Specialization in Microbiology and Virology (70/70 cum laude)

2010-2017 Assistant Professor at the Department of Molecular Medicine, Sapienza University of Rome

2018-2024 Associate Professor at the Department of Molecular Medicine, Sapienza University of Rome

2016-2022 Chair of the Bachelor Degree program in Nursing (course T), Sapienza University of Rome

2019-ongoing Member of the Scientific Board of PhD in Life Science, Sapienza University of Rome

2020-ongoing Director of the Master in Molecular Virology (II level), Sapienza University of Rome

Honors and Awards:

- ICAR-Conference on Retroviruses and Opportunistic Infections (CROI) Awards (2014; 2015) for oral presentations.
- Special Jury Price 2014 released by Prof. G. Silvestri, Prof B.H Hahn and Prof GS Deeks for the best oral communication at the CROI, Boston, USA.
- Gilead Award, 2016 (HIV Fellowship Program) – Project: 'Integrative model combining immunogenetics, viral burden, and cardiovascular disease in HIV-1 patients.'
- Gilead Award, 2021 (HIV Fellowship Program) – Project on integrative monitoring of SARS-CoV-2 infection- vs vaccine-induced immunity in HIV-1 patients.
- Mentor of ICAR-CROI award-winning presenters (2021–2024)

Scientific interests

The following topics are the focus of my research interest:

- The antiviral activity of type I–III IFNs and pattern recognition receptor pathway modulators against emerging viruses, and the in vitro characterization of viral immune-evasion strategies;
- Regulation of IFN production, inflammatory signaling and immune cell subsets in viral infectious diseases;
- The biological and clinical significance of autoantibodies against IFN;
- Genetic variability of the 3' UTR of mosquito-borne orthoflaviviruses and the immunopathogenic role of non-coding sRNAs.

Contribution to Science (major findings, no more than 10 lines)

Over the years, C. Scagnolari has focused on host–virus interactions at the cellular and molecular level, with particular attention to viruses and interferons (IFNs). During the 2003 severe acute respiratory syndrome coronavirus 1 (SARS-CoV-1) outbreak, she was among the first to describe viral resistance to IFN action. Her work expanded to IFN activity against emerging viruses, including human metapneumovirus (HMPV), influenza A(H1N1), arboviruses, SARS-CoV-2, and monkeypox virus. She showed that IFNs, while antiviral, can be detrimental when persistently expressed in acute and chronic viral infections. Her research includes Toll-like receptors, type I/III IFNs, and interferon-stimulated genes in human immunodeficiency virus type 1 (HIV-1), human papillomavirus (HPV), dengue virus, respiratory viral infections, and long COVID. She identified anti-IFN autoantibodies in severe COVID-19, HIV-1/SARS-CoV-2 coinfection, and West Nile virus infection. She also contributed to studies on the molecular epidemiology and genetic diversity of respiratory viruses, HPV, and arboviruses.

5 Selected publications

Bordi L, D'Auria A, Frasca F, Mazzotta V, Mazzetti P, Fracella M, d'Ettorre G, Antonelli G, Pistello M, Antinori A, Viscidi RP, Maggi F, Lalle E, Scagnolari C. MPXV infection impairs IFN response but is partially sensitive to IFN- γ antiviral effect *Med Microbiol Immunol*. 2024;213(1):25. doi: 10.1007/s00430-024-00808-w.

Fracella M, Mancino E, Nenna R, Virgillito C, Frasca F, D'Auria A, Sorrentino L, Petrarca L, La Regina D, Matera L, Di Mattia G, Caputo B, Antonelli G, Pierangeli A, Viscidi RP, Midulla F, Scagnolari C. Age-related transcript changes in type I interferon signaling in children and adolescents with long COVID. *Eur J Immunol*. 2024:e2350682. doi: 10.1002/eji.202350682.

Pierangeli A, Gentile M, Oliveto G, Frasca F, Sorrentino L, Matera L, Nenna R, Viscido A, Fracella M, Petrarca L, D'Ettorre G, Ceccarelli G, Midulla F, Antonelli G, Scagnolari C. Comparison by Age of the Local Interferon Response to SARS-CoV-2 Suggests a Role for IFN- ϵ and - ω . *Front Immunol*. 2022;13:873232. doi: 10.3389/fimmu.2022.873232.

Frasca F, Scordio M, Santinelli L, Gabriele L, Gandini O, Criniti A, Pierangeli A, Angeloni A, Mastroianni CM, d'Ettorre G, Viscidi RP, Antonelli G, Scagnolari C. Anti-IFN- α - ω neutralizing antibodies from COVID-19 patients correlate with downregulation of IFN response and laboratory biomarkers of disease severity. *Eur J Immunol*. 2022;52(7):1120-1128. doi: 10.1002/eji.202249824.

Upasani V, Scagnolari C, Frasca F, Smith N, Bondet V, Vanderlinden A, Lay S, Auerswald H, Heng S, Laurent D, Ly S, Duong V, Antonelli G, Dussart P, Duffy D, Cantaert T. Decreased Type I Interferon Production by Plasmacytoid Dendritic Cells Contributes to Severe Dengue. *Front Immunol*. 2020;11:605087. doi: 10.3389/fimmu.2020.605087.

On-going Grants

<i>Project Title</i>	<i>Funding source</i>	<i>Amount (Euros)</i>	<i>Period</i>	<i>Role of the PI</i>
Unravelling the interplay of cellular and viral non-coding RNAs with the interferon response in dengue virus infection: a comprehensive in vitro and in vivo molecular	CALL2024 Two year "Anna Tramontano"	40.000	2025-2027	PI (25% of time)
In vitro characterization of non-coding RNAs and inflammatory responses in neurotropic West Nile and Zika virus infections	Progetti di Ricerca (Piccoli, Medi) - Progetti Medi	10.000	2024-2026	PI (10% of time)

Complete list of published work in MyBibliography:
<https://pubmed.ncbi.nlm.nih.gov/?term=sCAGNOLARI+C>

KEYWORDS

VIRUS

IFN

ANTI-IFN NAB

ARBOVIRUS

HIV

HPV