

PERSONAL INFORMATION

Giovanni Delogu

Omissis

 Department of Basic and Biotechnological Sciences, Intensive Care - Università Cattolica del Sacro Cuore –

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 Omissis

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Omissis

Enterprise	University	EPR
<input type="checkbox"/> Management Level	<input checked="" type="checkbox"/> Full professor	<input type="checkbox"/> Research Director and 1st level Technologist / First Researcher and 2nd level Technologist / Principal Investigator
<input type="checkbox"/> Mid-Management Level	<input type="checkbox"/> Associate Professor	<input type="checkbox"/> Level III Researcher and Technologist
<input type="checkbox"/> Employee / worker level	<input type="checkbox"/> Researcher and Technologist of IV, V, VI and VII level / Technical collaborator	<input type="checkbox"/> Researcher and Technologist of IV, V, VI and VII level / Technical collaborator

WORK EXPERIENCE

From June 2021 - present

**Full Professor of Microbiology**

Università Cattolica del Sacro Cuore

- Teaching activities: Medicine and Surgery; Medicine and Surgery in the English-taught course; Biotechnology; Post-graduate courses.
- Research: molecular pathogenesis of tuberculosis; development of new strategies to control TB; molecular epidemiology of bacterial infections; development and evaluation of host-directed therapies against TB, non-tuberculous mycobacteria, COVID-19; role of Fusobacterium nucleatum in cancerogenesis. Research in clinical microbiology with emphasis on development and evaluation of new diagnostics and the immunological diagnosis of tuberculosis, NTM, and viral infections.

From January 2021 – present

**Scientific Director**

Mater Olbia Hospital, Olbia (OT), Italy

Supervise the scientific and research activities of the Hospital.

Artificial intelligence applied to the integration of biologics (genomics, microbiomics, metabolomics, proteomics, radiomics) to the identification of new predictive markers in patients subjected to radiotherapy.

From April 2019 - present

**Head of the Laboratory Medicine Department**

Mater Olbia Hospital, Olbia (OT), Italy

Head of a core lab that manage chemical chemistry, haematology, coagulation, microbiology and molecular diagnosis. The Lab is a service for the inpatients and outpatients and served as a key center for the North-East Sardinia for the diagnosis of SARS-CoV-2 infections.

From Nov 2007 - 2019

**Associate Professor of Microbiology with clinical duties**

Università Cattolica del Sacro Cuore

- Teaching activities in the courses of: Medicine and Surgery; Medicine and Surgery in the English-taught course; Biotechnology; Nurses School; Post-graduate courses.
- Research: molecular pathogenesis of tuberculosis; development of new strategies to control TB (Vaccines, diagnostics, host-directed therapies); molecular epidemiology of tuberculosis; Research in clinical microbiology with emphasis on development and evaluation of new diagnostics and the immunological diagnosis of tuberculosis infection and disease.
- Clinical microbiology: immunological and molecular diagnosis; diagnosis of tuberculosis and mycobacterial infections;

From Oct 2003 to Oct 2007

**Business or sector** Academy –University Hospital

**Assistant Professor of Microbiology with clinical duties**

Università Cattolica del Sacro Cuore – Policlinico Gemelli

- Teaching activities in the courses of: Biotechnology; Nurses School; Post-graduate courses.
- Research: molecular pathogenesis of tuberculosis; development and evaluation of new vaccines in the animal model of TB; Research in clinical microbiology with emphasis on development and evaluation of new diagnostics and the immunological diagnosis of tuberculosis infection and disease.
- Clinical microbiology: immunological and molecular diagnosis; diagnosis of tuberculosis and mycobacterial infections;

From Sep 2000 to Sep 2003

**Business or sector** Academy –University Hospital

**Post-doctoral Fellow.**

Department of Biomedical Sciences, University of Sassari, Sassari (Italy).

- Research: immunological and molecular characterization of Mycobacterium tuberculosis antigens

**Business or sector** Academy

From Aug 2002 to Nov 2002

**Post-doctoral Fellow. Oak Ridge Institute for Science and Education (ORISE) Fellowship**

Center for Biologics Evaluation and Research, Food and Drug Administration (USA).

- Research: immunological and molecular characterization of Mycobacterium tuberculosis antigens

**Business or sector** Government agency

From Nov 1996 to Sep 2000

**Post-doctoral Fellow. Fogarty Fellowship in a program sponsored by the National Institutes of Health.**

Center for Biologics Evaluation and Research, Food and Drug Administration (USA)

- Research: immunological and molecular characterization of Mycobacterium tuberculosis antigens with a special focus on the heparin binding haemagglutinin and PE\_PGRS proteins.

**Business or sector** Government agency

**EDUCATION AND TRAINING**

2000- 2004

**PhD in General and Clinical Microbiology**

Università Cattolica del Sacro Cuore, Rome

1992-1996

**Specialty School in Microbiology and Virology**

University of Sassari, Sassari (Italy)

1988- 1992)

**Degree in Biological Sciences**

University of Sassari, Sassari (Italy)

**WORK ACTIVITIES**

**Editorial activity**

Associate editor of Chemotherapy; Academic editor of PlosOne, BMC

Reviewer activity:

Nature Microbiology, PlosPathogens, Lancet Infectious Diseases, Scientific Reports, PLOSone, Molecular Microbiology, Cellular Microbiology, Frontiers Journals, Journal of Infection, Expert Reviews, Journal of Bacteriology, Gene, Journal of Infectious Diseases, BMC Microbiology, Microbes and Infection, Vaccine, FEMS Microbiology Letter, Microbiology, Tuberculosis, etc.

**Invited presentations**

Teaching activities at international level.

2018 Loyola University of Chicago, John Felice Center Rome. Course in Clinical Microbiology GNUR203 (full course, 36 hours of teaching) , Program Global Health.

2012 June 4th 2012, Naples COST WORKSHOP 2012. Molecular determinants of bacterial diseases. Enigmatic proteins of the mycobacterial surface: the PE\_PGRS family.

2008 From Nov 10 through Nov 16, 2008, chaired and lectured as the sole speaker the Post-graduate monothematic course "Tuberculosis" at the University of Hue, Vietnam (12 hours of lectures).

2007 August 16th – 23rd 200, chaired and lectured as the sole speaker the Workshop on Molecular Biology of Tuberculosis at Hanoi University, Hanoi, Vietnam in a program sponsored by DELPHE funded by the British Council. (10 hours of Lectures and 9 hours of practicals).

More than 40 presentations. Below some of the most recent

2019 Which host response assays are ready to get implemented in clinical practice? ECCMID 29th Congress. Amsterdam, Aprile 16-19 2019.

2018 Ecology and pathogenesis of non-tuberculous mycobacteria. ESCMID Postgraduate Education Course: Management of Myco- bacterial Infections and Associated Comorbidities. Rome, sep 27-28 2018

2018 Learning from Mtb-Host Interaction to Develop Innovative Strategies for the Diagnosis and Treatment of Tuberculosis. Hue University of Medicine and Pharmacy, Hue, Vietnam.

2018 Learning from Mtb-Host Interaction to Develop Innovative Strategies for the Diagnosis and Treatment of Tuberculosis. Seminar at the VNU University of Science, Hanoi, Vietnam.

2018 Molecular determinants in TB pathogenesis: the role of PE\_PGRS proteins. Keynote lecture at KLEPTE, May 30th 2018, VNU University of Science, Hanoi, Vietnam.

2017 How to identify and manage latent tuberculosis. Meet-the-Expert session. ECCMID Vienna April 2016

2016 Immunity based prevention and treatment: what for MDR-TB? Course in Difficult-to-Treat Mycobacterial Infections. Brac, Croatia Sep 2016

2016 Molecular determinants in TB pathogenesis: the role of PE\_PGRS proteins. Intrinsic and Innate Immunity to Pathogens. ESCMID/SIM Summer School, Novara June 2016.

**Grants**

2018-2020 Programma CCM, Ministero della Salute: Definition of control strategies for TB associated with HIV in Italy within a TB elimination strategy (€ 20000 for the UO Delogu).

2016-2017 Personalized pharmacological treatment of chronic obstructive pulmonary disease based on phenotyping granted by Fondazione Roma (50000 Euro for the UO with Prof. Delogu as PI).  
Understanding the role of microbiota in the aetiology of COPD.

2013-2016 - Research project funded by Minister of Health, Ricerca Finalizzata: "Genetic variability of Mycobacterium tuberculosis and its implications for transmission dynamics, pathogenesis and immune" (RF-2011-02348713). Funding of 100.000 Euro for the Unit where Prof. Delogu served as PI.

In collaboration with INMI this grant led to several publications that allowed the first genetic characterization of MTB strains circulating in Rome and a dissection of the impact of genetic differences on Mtb pathogenesis.

2013 – 2016 - Research project funded by the Minister of Health, Ricerca finalizzata: "Role of IP-10 and its truncated form in the pathogenesis of tuberculosis" (RF-2011- 02349395). Funding of 95.000 Euro for the unit where Prof. Delogu served as PI.

In collaboration with INMI, this grant led to better understand the role of IP-10 in Mtb pathogenesis and as an aid in the diagnosis of Mtb infection.

2010 - 2013 - PRIN – MIUR – National Principal Investigator "Latent tuberculosis and development of a model of post-exposure vaccination" (2008Y8RZTF). Funding 128.900 Euro.

Grants that investigated the biology of Mtb during latent infection.

2010 - 2013 - Progetto FILAS – Regione Lazio – Development of a new vaccine against tuberculosis. Funding 75.000 Euro - Partner: Okairos; Università di Tor Vergata.

Grants to develop and evaluate a DNA vaccine against TB

**PERSONAL SKILLS**

Mother tongue(s)	Italian
Other language(s)	English (proficient)

Communication skills	Good communication skills gained through my experience as a teacher in many different courses; as a scientist when delivering presentation or the results of my work at national and international scientific meetings, research group presentations.
Job-related skills	good command of biosafety procedures in the Laboratory of Microbiology (currently coordinator of the people in charge of the biosafety in each sector of the lab)
Digital skills	Proficient

## ADDITIONAL INFORMATION

### Statement of Research Interests

The scientific interests rests upon more than 25 years of experience in microbiology, with focus stemming from molecular epidemiology to development of new diagnostics, with special interest on immunological diagnosis; from the molecular and immunological characterization of host-microbe interaction mechanisms, with special focus on mycobacteria, to the design and evaluation of new vaccines; from the establishment of preclinical models of infections, in vivo and ex vivo, to the design and assessment of host-directed therapies against main human pathogen as Mtb, mycobacteria, and viruses. The experience gained with Mtb and mycobacteria has been successfully used in other bacteria and viruses. The models, expertise, tools could be used in most Spokes and WPs of the proposed PE13, with special focus on spoke 3 and 5.

### Publications

total number of publications in peer-review journals: 172  
total number of citations: 5252  
H index (Scopus): 39

De Maio F, Rosa E, Perini G, Augello A, Niccolini B, Ciaiola F, Santarelli G, Sciandra F, Bozzi M, Sanguinetti M, Sali M, De Spirito M, **Delogu G**, Palmieri V, Papi M. (2022) 3D-printed graphene polylactic acid devices resistant to SARS-CoV-2: Sunlight-mediated sterilization of additive manufactured objects. *Carbon N Y.* 2022 Jul;194:34-41. doi: 10.1016/j.carbon.2022.03.036  
[This paper describes how to sterilize graphene devices for SARS-CoV-2. Experience in culturing and measurement of SARS-CoV-2 \(Spoke\)](#)

Alonzi T, Aiello A, Petrone L, Najafi Fard S, D'Eletto M, Falasca L, Nardacci R, Rossin F, **Delogu G**, Castillette C, Capobianchi MR, Ippolito G, Piacentini M, Goletti D. (2021) Cysteamine with In Vitro Antiviral Activity and Immunomodulatory Effects Has the Potential to Be a Repurposing Drug Candidate for COVID-19 Therapy. *Cells.* 2021 Dec 24;11(1):52. doi: 10.3390/cells11010052.  
[Evaluation of cysteamine as a host-directed therapy against COVID-19. \(Spoke 5\)](#)

De Maio F, Salustri A, Battah B, Palucci I, Marchionni F, Bellesi S, Palmieri V, Papi M, Kramarska E, Sanguinetti M, Sali M, Berisio R, **Delogu G** (2021) PE\_PGRS3 ensures provision of the vital phospholipids cardiolipin and phosphatidylinositols by promoting the interaction between M. tuberculosis and host cells. *Virulence.* 2021 Dec;12(1):868-884. doi: 10.1080/21505594.2021.1897247.  
[Investigating molecular determinants of host-microbe interactions \(spoke 5\)](#)

Palucci I, Maulucci G, De Maio F, Sali M, Romagnoli A, Petrone L, Fimia GM, Sanguinetti M, Goletti D, De Spirito M, Piacentini M, Delogu G. (2019) Inhibition of Transglutaminase 2 as a potential host-directed therapy against Mycobacterium tuberculosis. *Frontiers in Immunology* 10:3042. doi: 10.3389/fimmu.2019.03042.  
[Evaluation of TG2-inhibitors as host-directed therapies against Tuberculosis \(spoke 5\)](#)

Palucci I, Battah B, Salustri A, De Maio F, Petrone L, Ciccocanti F, Sali M, Bondet V, Duffy D, Fimia GM, Goletti D, Delogu G. (2019) IP-10 contributes to the inhibition of mycobacterial growth in an ex vivo whole blood assay. *Int J Med Microbiol.* 2019 Jul;309(5):299-306. doi: 10.1016/j.ijmm.2019.05.005. Epub 2019 May 22.  
[First papers showing the potential role of IP-10 in immunomodulation during Mtb infection \(Spoke5\)](#)

Sali M, Buonsenso D, D'Alfonso P, De Maio F, Ceccarelli M, Battah B, Palucci I, Chiacchio T, Goletti D, Sanguinetti M, Valentini P, Delogu G. (2018) Combined use of Quantiferon and HBHA-based IGRA supports tuberculosis diagnosis and therapy management in children. *J Infect.* 2018 Sep 26. pii: S0163-4453(18)30284-6  
[Development and evaluation in a cohort of children of the prognostic value of an immunological assay for the diagnosis of TB \(Spoke 3\)](#)

De Maio F, Battah B, Palmieri V, Petrone L, Corrente F, Salustri A, Palucci I, Bellesi S, Papi M, Rubino S, Sali M, Goletti D, Sanguinetti M, Manganelli R, De Spirito M, Delogu G. (2018) PE\_PGRS3 of Mycobacterium tuberculosis is specifically expressed at low phosphate concentration and its arginine-rich C-terminal domain mediates adhesion and persistence in host tissues when expressed in Mycobacterium smegmatis. Cell Microbiol. 2018 Sep 7:e12952. doi: 10.1111/cmi.12952.

[Characterization of the molecular determinants of pathogenesis \(spoke 3 and 5\)](#)

Romagnoli A, Petruccioli E, Palucci I, Camassa S, Carata E, Petrone L, Mariano S, Sali M, Dini L, Girardi E, Delogu G, Goletti D, Fimia GM. (2018) Clinical isolates of the modern Mycobacterium tuberculosis lineage 4 evade host defense in human macrophages through eluding IL-1 $\beta$ -induced autophagy. Cell Death Dis. 2018 May 24;9(6):624. doi: 10.1038/s41419-018-0640-8

[Impact of genetic variability on pathogenesis and virulence with dissection at molecular level of the events shaping Mtb infection \(spoke 3 and 5\)](#)

Palucci I, Matic I, Falasca L, Minerva M, Maulucci G, De Spirito M, Petruccioli E, Goletti D, Rossin F, Piacentini M, Delogu G. (2018) Transglutaminase type 2 plays a key role in the pathogenesis of Mycobacterium tuberculosis infection. J Intern Med. 2018 Mar;283(3):303-313 doi: 10.1111/joim.12714.

[First paper to demonstrate the protective role obtained in in vivo and in vitro models of infection by inhibiting transglutaminase 2](#)

Iantomasi R, Sali M, Cascioferro A, Palucci I, Zumbo A, Soldini S, Rocca S, Greco E, Maulucci G, De Spirito M, Fraziano M, Fadda G, Manganelli R, **Delogu G.** (2012) PE\_PGRS30 is required for the full virulence of Mycobacterium tuberculosis. Cell Microbiol. 2012 14:356-367.

[Paper that identifies PE\\_PGRS30 as a virulence factor of Mtb that is required to prevent phagosome-lysosome fusion](#)

*According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV*

Rome, November 22<sup>nd</sup> 2022

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