VALENTINA DELL'OSTE



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PRESENT POSITION

Associate Professor of Microbiology and Clinical Microbiology (SSD: MEDS-03/A) National Scientific Qualification (DD 1796/2023) to the functions of Full Professor in Microbiology and Clinical Microbiology (SSD: MEDS-03/A).

EDUCATION AND ACADEMIC CAREER

2011-2022: Assistant Professor (SSD: MED/07, Microbiology and Clinical Microbiology), Department of Public Health and Pediatric Sciences, University of Turin.

2015: Residency in Microbiology and Virology, Medical School, University of Turin, Italy.

2009-2011: Post-doctoral Research Fellowship, Department of Public Health and Microbiology, University of Turin, Italy.

2009: Ph.D. in Clinical and Experimental Medicine, Medical School, University of Eastern Piedmont "A. Avogadro", Novara, Italy.

2007: Visiting fellow, Institute of Virology, University of Cologne (Germany).

2005: Master's degree in Biotechnology, Medical School, University of Turin, Italy.

2003: Bachelor's degree in Biotechnology, Medical School, University of Turin, Italy.

AWARDS AND HONORS

2023: Co-author of the publication "HPV Meets APOBEC: New Players in Head and Neck Cancer", recognized as one of the "Top Downloaded Papers of IJMS in 2021" (Downloads: 2225).

2022: ITWIIN (Italian Association of Women Inventors and Innovators) Award 2021, "Exceptionally Creative Woman", for characterizing the antiviral activity of strigolactones.

2021: Co-author of the article "Human cytomegalovirus-induced host protein citrullination is crucial for viral replication" (Griffante *et al.*, Nature Communications 2021) featured in Nature Communications Editors' Highlights.

2018: Co-author of the article "HPV18 persistence impairs basal and DNA ligand-mediated IFN- β and IFN- λ 1 production through transcriptional repression of multiple downstream effectors of pattern recognition receptor signaling" (Albertini *et al.*, J Immunol 2018), featured by the "In This Issue" section, that highlights articles considered to be among the top 10% of articles published in the Journal.

2016: Co-author of the article "Regulatory interaction between the cellular restriction factor IFI16 and viral pp65 (pUL83) modulates viral gene expression and IFI16 protein stability" (Biolatti *et al.*, J Virol 2016), selected by the editors of the Journal of Virology for inclusion in "Spotlight," a feature in the Journal that highlights five especially meritorious research articles from the current issue.

2011: Young Scientists Meeting Grant (granted by Federation of European Microbiologists Society, FEMS), for attending the 13th International CMV/BetaHerpesvirus Workshop (Nuremberg, Germany).

2006: Award "Start-Cup Piemonte 2006".

2005: Award from "Camera di Commercio" of Turin, Italy, for degree thesis.

RESEARCH INTEREST

Valentina Dell'Oste participated in more than 20 national and international congresses as a speaker. As demonstrated by the list of publications, Dr. Dell'Oste has gained considerable expertise over the last years in the field of Herpesviruses and Papillomavirus infections, in particular about the host factors that may act as restriction factors for their replication. Her studies have also been addressed to clarify the role of virus- and Interferon-inducible proteins in the pathogenesis of viral and autoimmune diseases. Hereby, a shortlist of the most relevant projects in the last years is reported:

1) Characterization of innate immunity players during human cytomegalovirus (HCMV) and human papillomavirus (HPV) infections, focusing on the role of the interferon-inducible protein IFI16 as a restriction factor for HCMV and HPV infections.

2) Analysis of post-translational modifications (e.g. citrullination) and metabolic changes induced by DNA viruses (HCMV, HSV, HPV).

3) Characterization of HCMV clinical isolates obtained from a cohort of newborn infants diagnosed with congenital or postnatal HCMV infection for i) the genomic variability of specific genes encoding potential virulence factors, antiviral drug resistance, and viral escape mechanism from the immune system; ii) correlations between viral genotypes, phylogeny, in vitro growth properties and clinical sequels; iii) functional analysis of the clinical isolates for their capability to modulate the immune response, such as NK cells.

4) Definition of the implication of HPV (genus beta) in the development of non-melanoma skin cancers.

5) Evaluation of the role of the interferon-inducible IFI16 protein in the development of autoimmune diseases by the development of suitable methods to quantify the occurrence of anti-IFI16 autoantibodies and circulating protein in patients with systemic autoimmune diseases, such as Systemic Lupus Erythematosus (SLE), primary and secondary Sjögren's syndrome (SjS), and scleroderma (SSc).

4) Definition of the implication of HPV (genus beta) in the development of non-melanoma skin cancers. Dr. Dell'Oste contributed to the development of methods to analyze HPV DNA from either fresh, frozen, or paraffinembedded tissues, by PCR, real-time PCR, immunofluorescence, and in situ hybridization. She has also characterized several patients with Epidermodysplasia verruciformis, a rare hereditary skin disorder, characterized by abnormal susceptibility to beta-HPV infection. In addition, she investigated the role of HPV oncoproteins in the modulation of the inflammatory process after UVB exposure, with the goal of comparing mucosal high-risk genotypes (HPV16) versus cutaneous genotypes (HPV8 and 38).

6) Screening of antiviral compounds on different viral models.

RESEARCH FUNDINGS

2023-2025: PRIN 2022 (Italian Ministry of University and Research): "Understanding the genetic variability of human cytomegalovirus congenital infections: impact on viral phenotypes, innate immune responses, and clinical outcomes" (2022S3AZCC); Coordinator.

2022-2024: Research funding ("Cassa di Risparmio" Foundation of Turin, Italy): "Strigolattoni: molecole antivirali naturali"; Collaborator.

2012-2024: Research projects "Ricerca locale, ex-60%" (University of Turin, Italy); Coordinator.

2022-2023: Grant for Internationalization (University of Turin, Italy): "Photocatalytic activation of metal-based anticancer prodrugs for the induction of immunogenic cell death"; Coordinator.

2019-2023: Research funding ("Cassa di Risparmio" Foundation of Turin, Italy): "Human Cytomegalovirus genetic variability in newborns with congenital infection"; Coordinator.

2019-2022: PRIN 2017 (Italian Ministry of Education and Research): "Intrinsic and extrinsic innate immune surveillance against high-risk human papillomavirus infection: molecular mechanisms and novel intervention strategies" (20178ALPCM); Coordinator of the Research Unit.

2021-2022: Research funding POCTOINPROVE (Italian Ministry of Economy Development): "Strigolattoni: molecule antivirali naturali?"; Coordinator.

2017-2020: PRIN 2015 (Italian Ministry of Education and Research): "Defining the causal association between Human Beta-Papillomavirus infection, keratinocyte stem cell expansion and skin cancer development in the immunosuppressed host" (2015RMNSTA); Coordinator of the Research Unit.

2016-2019: Innovative Training Networks (ITN), Call H2020-MSCA-ITN-2014: "Training network providing cutting-edge knowledge on herpes virology and immunology (EDGE)"; Collaborator.

2014-2017: PRIN 2012 Starting (Italian Ministry of Education and Research): "High-throughput analysis of beta Papillomaviruses infection/reactivation in the immunocompromised host for understanding virus-host interactions and their pathogenic role in developing malignancies" (20127MFYBR); Coordinator of the Research Unit.

2013-2015: ESCMID Research Grant 2013: "A multidisciplinary approach to dissect the role of viral infections in the pathogenesis of systemic autoimmune disease"; Coordinator.

TEACHING SERVICE

2020- present: Member of the teaching board of the Ph.D. School of Molecular Medicine, Medical School, University of Turin, Italy.

2020- present: Professor of Microbiology, Specialization course in Geriatrics, Medical School, University of Turin, Italy.

2012- present: Professor of General Microbiology, Bacteriology and Virology Techniques, Technician courses, Medical School, University of Turin, Italy.

2024- present: Professor of Microbiology, Dental School, University of Turin, Italy.

2010-present: Supervisor of undergraduate, graduate, Ph.D. students, and postdocs.

2009-2011: Contract Professor of Applied Microbiology, School of Biology, University of Turin, Italy.

2010-2011: Tutor in Microbiology and Clinical Microbiology, School of Medicine (Obstetrics and Dental School), University of Turin, Italy.

ACADEMIC ACTIVITIES

- Member of the Joint Teaching Commission at the Department of Public Health and Pediatric Sciences,

University of Turin (since A.Y. 2021- 2022).

- Member of the Academic Spin-off Commission of the University of Turin (since A.Y. 2021- 2022).

- Member of the Committee for the evaluation of applications for teaching collaborators related to teaching modules of the Degree Course in Biomedical Laboratory Techniques, University of Turin (from A.Y. 2021/22).

- Guest editor for Microorganisms; Editorial Board of Frontiers in Microbiology and Viruses; Reviewer for MDPI papers, Plos One, Virology Journal, amongst others (https://publons.com/researcher/1687065).

- Reviewer for MRC grants, Italian grants from the University of Sassari and Parma, VQR, and SIR evaluation program.

TECHNOLOGY TRANSFER

- Co-inventor of the patent "Strigolactones for use in the prevention and/or treatment of infections by viruses of the Herpesviridae family" (E7527/19-EW, PCT/IB2019/059611, University of Turin).
- Co-inventor of the patent "PAD2 for use in the prevention and/or treatment or diagnosis of infections by viruses of the Herpesviridae family" (E6132/18-EW, PCT/IB2018/052204, University of Turin). Collaboration with the company Fluos s.a.s for the evaluation of the microbicidal activity of PVC samples. This collaboration resulted in the following publication: Bajetto G, Scutera S, Menotti F, Banche G, Chiaradia G, Turesso C, De Andrea M, Vallino M, Van Es D S, Biolatti M, Dell'Oste V, Musso T. Antimicrobial Efficacy of a Vegetable Oil Plasticizer in PVC Matrices. Polymers. 2024; 16(8) 1046; https://doi.org/10.3390/polym16081046.
- Collaboration with NoToVir, an academic spin-off of the University of Turin and the University of Eastern Piedmont, operating in the research and development of antiviral drugs.
- Collaboration with the company GEMAX MEDICALI for the evaluation of the antiviral activity of nebulizing devices.
- Collaboration with the academic spin-off NoToPharm, founded following participation in the Start Cup Piemonte Valle d'Aosta 2006 competition, incubated at the Bioindustry Park "Silvano Fumero" in Colleretto Giacosa (Turin, Italy).

OUTREACH AND PUBLIC ENGAGEMENT ACTIVITIES

- Participation in the UNIGHT 2023 and 2024 event, organized by the University of Turin, with the activity entitled "Discovering Viruses".
- Participation in the activity "A Day at the University" 2022-2023, 2023-2024, and 2024-2025 Edition, organized by the University of Turin, involving engagement and interaction activities (lectures and scientific workshops) with primary and lower secondary school students.
- Radio interview on H-Radio WOW Campus Radio Station, the radio station of the H-FARM Campus (Roncade, TV). December 1, 2022.
- Participation in the organization of the International Summer Course "Intrinsic and Innate Immunity to Pathogens", sponsored by ESCMID (European Society of Clinical Microbiology and Infectious Diseases), SIM (Italian Society of Microbiology), and SIICA (Italian Society of Immunology, Clinical Immunology, and Allergology). June 23-25, 2016 (Novarello Congress Center, Granozzo con Monticello, Novara).
- Participation in the organization of the EDGE Mid Term Evaluation Meeting, within the Innovative Training Networks (ITN) project "Training network providing cutting-EDGE knowlEDGE on herpes

virology and immunology" (EDGE), funded by the European Commission under the Horizon2020 program (H2020-MSCA-ITN-2015).

- Articles published on the Frida-Unito portal: "Able Transformers: The Key Role of Strigolactones Against Cancer" (https://frida.unito.it/wn_pages/contenuti.php/514_fondamenti-dichimica/454_abilitransformer-il-ruolo-chiave-degli-strigolattoni-contro-il-cancro/); "One Health: A Multidisciplinary Challenge for the Well-being of All Species" (https://frida.unito.it/wn_pages/contenuti.php/514_fondamenti-di-chimica/449_one-health_una sfidamultidisciplinare-per-il-benessere-di-tutte-le-specie/).
- Training course for teachers, held as part of the MIDAS 2019 project Masterclass in Innovation in Science Education, organized by Agorà Scienza, Research Enhancement and Public Engagement Section, in collaboration with the Gobetti Marchesini Casale Arduino Institute of Turin. April 4-6, 2019 (Turin).
- Mentor talk titled "Sexually Transmitted Infections: An Old Problem Still Relevant", given for the Alumni Association of the "Renato Einaudi" University College. October 28, 2017 (Turin). Participation in the creation of the website for the Viral Infection Pathogenesis Laboratory (https://viplab.unito.it), as well as the dissemination of VipLab research results via social media (Twitter, Facebook, Instagram).

SCIENTIFIC SOCIETIES

- Società Italiana di Microbiologia (SIM)
- Società Italiana di Virologia-Italian Society for Virology (SIV-ISV)
- European Society of Clinical Virology (ESCV)
- Associazione Italiana Donne Inventrici e Innovatrici (ITWIIN)
- Mothers in Science
- Alumni, University College "Renato Einaudi"