

# VALENTINA DELL'OSTE



Associate Professor of Microbiology and Clinical Microbiology  
Department of Public Health and Pediatric Sciences, University of Turin

Place and Date of Birth: Casale Monferrato (AL), 31 March 1981

## CONTACT INFORMATION

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## EDUCATION

**2015:** Specialization in Microbiology and Virology, Medical School, 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.

## PROFESSIONAL EXPERIENCES

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

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

**2011-2012:** Research fellowship (granted by Notopharm s.r.l.), Bioindustry Park of Canavese and Department of Public Health and Microbiology, University of Turin, Italy.

**2011:** Research fellowship, Department of Public Health and Microbiology, University of Turin, Italy.

**2010:** Research fellowship, Department of Public Health and Microbiology, University of Turin, Italy.

**2007:** Research fellowship, Institute of Virology, University of Cologne (Germany)

**2005-2009:** Research fellowship, granted by "Cassa di Risparmio" Foundation of Vercelli, Department of Clinical and Experimental Medicine, University of Eastern Piedmont "A. Avogadro", Novara, Italy.

**2002-2005:** Internship for Bachelor and Master Thesis, Department of Public Health and Microbiology. University of Turin, Italy

## **RESEARCH FUNDINGS**

**2021-present:** Research fundings from "Cassa di Risparmio" Foundation of Turin, Italy - "Strigolattoni: molecole antivirali naturali"; €34000; 24 months; Co-I.

**2019-present:** Research funding granted by "Cassa di Risparmio" Foundation of Turin, Italy: "Human Cytomegalovirus genetic variability in newborns with congenital infection"; €30000; PI.

**2019-present:** 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"; €86000; PI.

**2021-2022:** Research funding POCTOINPROVE "Strigolattoni: molecole antivirali naturali?"; €40000; PI.

**2012-present:** Research projects "ex-60%" (University of Turin, Italy); PI.

**2016:** Innovative Training Networks (ITN), Call H2020-MSCA-ITN-2014 - "Training network providing cutting-edge knowledge on herpes virology and immunology (EDGE)" €630000; 3 years; Co-I.

**2015:** 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" €52200; 3 years; PI.

**2015:** Research fundings ("Cassa di Risparmio" Foundation of Turin, Italy) - "Mouse facility establishment at the Molinette hospital of Turin to set up mouse models for tumor and viral infections" €50000; 3 years; Co-I.

**2015:** Innovative training network (Piedmont Region, Italy) - "Development of new diagnostic approaches to use IFI16 as a marker of autoimmune diseases" €100000; Co-I.

**2014:** 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" €76000; 3 years; PI.

**2013:** ESCMID Research Grant 2013 - "A multidisciplinary approach to dissect the role of viral infections in the pathogenesis of systemic autoimmune disease" €20000; 3 years; PI.

## **AWARDS AND HONORS**

**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 a Nature Communications Editors' Highlights.

**2018:** Co-author of the article "HPV18 persistence impairs basal and DNA ligand-mediated IFN- $\beta$  and IFN- $\lambda$ 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.

### **TECHNOLOGY TRANSFER**

- Co-inventor of the Patent "Strigolattoni per uso nella prevenzione e/o trattamento di infezioni da virus della famiglia Herpesviridae" (E7527/19-EW, PCT/IB2019/059611, University of Turin, Italy).

- Co-inventor of the Patent "PAD2 per uso nella prevenzione e/o trattamento o diagnosi di infezioni da virus della famiglia Herpesviridae" (E6132/18-EW, PCT/IB2018/052204, University of Turin, Italy).

- Consultant to NoToVir s.r.l. for antivirals

### **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.

**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 (Obstetrician and Dental School), University of Turin, Italy.

### **ACADEMIC ACTIVITIES**

- Member of the Spin-Off Commission of the University of Turin.

- Member of the Joint Educational Committee of the Department of Public Health and Pediatric Sciences of the University of Turin.

### **TEACHING SERVICE**

- Member of the Teaching Board of the Ph.D. School in Molecular Medicine.

- Professor of Microbiology, Specialization School of Geriatrics.

- Professor of General Microbiology, Bacteriology, and Virology Techniques for Technician courses Medical School.

- Supervisors of undergraduate, graduate, Ph.D. students and postdocs.

## EDITORIAL ACTIVITIES

- 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 University of Sassari and Parma, VQR, and SIR evaluation program.

## SCIENTIFIC SOCIETIES

Italian Society of Microbiology (SIM).

Italian Society of Virology (ISV).

Italian Association of Inventor and Innovator Women (ITWIIN).

## RESEARCH INTEREST

As calculated by the online research platform and citation database "Scopus", the bibliometric indicators certifying the quality of the scientific production can be summarized as follows:

<b>Scientific Publications</b>	44
h-index	16
Citations	899

Dr. Dell'Oste participated in more than 20 national and international congresses as a speaker. She was in the Scientific board of the International Summer Course "Intrinsic and Innate Immunity to Pathogens" (June 2016, Novara, Italy), 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). As demonstrated by the list of publications, Dr. Dell'Oste has gained considerable expertise over the last years in the field of Herpesviruses and Papillomaviruses infections, in particular with regard to the host factors that may act as restriction factors for their replication. Her studies have been also 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 and epigenetic mechanisms induced by HCMV and HPV infections. An important application of this project is to ascertain whether currently available amidine-derived compounds (e.g., Cl-amidine) could be useful in the treatment of HCMV-induced infections, in both in vitro and in vivo models of congenital HCMV infection.

3) Description 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).

6) Screening of antiviral compounds. 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 paraffin-embedded 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 to compare mucosal high-risk genotype (HPV16) versus cutaneous genotypes (HPV8 and 38).

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).

6) Screening of antiviral compounds.