

**BIOGRAPHICAL SKETCH**

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NAME: Chiara Villa

eRA COMMONS USER NAME (credential, e.g., agency login):

POSITION TITLE: Assistant Professor

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

| INSTITUTION AND LOCATION          | DEGREE<br>(if applicable)                                     | Completion Date<br>MM/YYYY | FIELD OF STUDY                                                                                                   |
|-----------------------------------|---------------------------------------------------------------|----------------------------|------------------------------------------------------------------------------------------------------------------|
| University of Milan, Milan, Italy | PhD in Molecular Medicine                                     | 12/2009                    | Role of inflammation and oxidative stress in the pathogenesis of Alzheimer's disease and frontotemporal dementia |
| University of Milan, Milan, Italy | Master degree in Medical Biotechnology and Molecular Medicine | 07/2006                    | Proangiogenic effect of oxytocin in the stimulation of human endothelial cells motility                          |

**A. Personal Statement**

Dr. Chiara Villa is Assistant Professor of General Pathology at the School of Medicine and Surgery of University of Milano-Bicocca (Monza, Italy). Since obtaining her PhD in Molecular Medicine, her research activity has been focused on the study of the etiopathogenesis of several neurodegenerative and neurological diseases (Alzheimer's disease, frontotemporal dementia, multiple sclerosis, autism spectrum disorders, epilepsies) by a wide range of cellular and molecular biology techniques. In particular, she is involved in the (i) identification of novel biomarkers and genetic risk factors in key genes on development and progression of such disorders; (ii) search of new genes/mutations by the means of genetic and genomic next-generation sequencing (NGS) analyses and (iii) *in vitro* evaluate the molecular mechanisms of action in determining functional and structural alterations. More recently, she expanded her scientific interests also to the investigation of molecular underpinnings of certain tumors, with particular attention to breast and ovarian cancers, aiming to uncover potential new targets for diagnosis and therapy.

She is currently author of 85 research articles in peer-reviewed journals with a personal H-index of 27 and serves as editorial board member of several International journals. She won some travel grants to attend National and International conferences as well as the 3rd prize for Young Talents Award established by the University of Milano-Bicocca with the sponsorship of the National Academy of Lincei in 2016.

**B. Positions, Scientific Appointments, and Honors**

*Positions and scientific appointments:*

- 02/2024-Present: Tenure-track Assistant Professor in General Pathology, School of Medicine and Surgery, University of Milano-Bicocca, Monza, Italy
- 09/2023-01/2024: Adjunct Professor of General Pathology, Department of Biotechnology and Bioscience, University of Milano-Bicocca, Milan, Italy
- 04/2022-Present: Member of the European Society of Pathology (ESP)
- 02/2021-Present: Member of the Italian Society of Pathology and Translational Medicine (SIPMet)
- 08/2020-07/2023: Assistant Professor in General Pathology, School of Medicine and Surgery, University of Milano-Bicocca, Monza, Italy
- 01/2016-Present: Member of the Italian Society of Neuroscience (SIN)
- 01/2016-Present: Member of the Federation of European Neuroscience Societies (FENS)
- 12/2015-Present: Member of the Italian Society of Human Genetics (SIGU)
- 02/2014-07/2020: Post-Doctoral research fellow (Sr), School of Medicine and Surgery, University of Milano-Bicocca, Monza, Italy
- 11/2009-01/2014: Post-Doctoral research fellow (Jr), Department of Neurology, "Dino Ferrari" Center, University of Milan, Fondazione Cà Granda, IRCCS Ospedale Maggiore Policlinico, Milan, Italy
- 11/2006-10/2009: PhD fellow, Department of Neurology, "Dino Ferrari" Center, University of Milan, Fondazione Cà Granda, IRCCS Ospedale Maggiore Policlinico, Milan, Italy
- 03/2005-07/2006: Scholarship, Department of Pharmacology, University of Milan, Milan, Italy

*Honors and awards:*

- 02/2023: Italian National Scientific Qualification (ASN) as Associate Professor in General and Clinical Pathology (06/A2 area, SSD MED/04) obtained with unanimous opinion of the commission
- 01/2022: Publication entitled "Can SARS-CoV-2 Infection Exacerbate Alzheimer's Disease? An Overview of Shared Risk Factors and Pathogenetic Mechanisms" selected as cover page for Journal of Personalized Medicine
- 05/2020: Winner of a travel grant to attend the 12th FENS (Federation of European Neuroscience Societies) Forum, for the poster presentation entitled "Possible role of mutant  $\alpha 2$  subunit of the neuronal nicotinic acetylcholine receptor (nAChR) in autosomal dominant lateral temporal lobe epilepsy (ADLTE)", 11-15 July 2020, Glasgow, United Kingdom
- 09/2019: Italian National Scientific Qualification (ASN) as Associate Professor in Health Professions and Applied Medical Technologies Sciences (06/N1 area, SSD MED/46) obtained with unanimous opinion of the commission
- 06/2019: Winner of a travel grant to attend the 17th Catania International Summer School of Neuroscience (CISSN) "Neurogenetics and Neurogenomics", 22-26 July 2019, Catania, Italy
- 05/2019: Winner of a travel grant to attend the XVIII SINS (Italian Society of Neuroscience) Congress, for the poster presentation entitled "Role of mutant  $\alpha 2$  subunits of the neuronal nicotinic acetylcholine receptor in epileptogenic channelopathies", 26-29 September 2019, Perugia, Italy
- 05/2018: Winner of a travel grant to attend the 11th FENS (Federation of European Neuroscience Societies) Forum, for the poster presentation entitled "A novel mutation in the *CHRNA2* gene detected in an Italian NFLE patient", 7-11 July 2018, Berlin, Germany
- 04/2018: Italian National Scientific Qualification (ASN) as Associate Professor in Clinical Biochemistry and Clinical Molecular Biology (05/E3 area, SSD BIO/12) obtained with unanimous opinion of the commission
- 05/2017: Winner of a travel grant to attend the XVII SINS (Italian Society of Neuroscience) Congress, for the poster presentation entitled "Functional characterization of a novel *KCNJ2* mutation identified in an autistic proband", 1-4 October 2017, Ischia, Italy
- 12/2016: Winner of the 3rd Prize "Young Talents" for her contribution in the genetics of neurodegenerative disorders, University of Milano-Bicocca, Milan, Italy
- 11/2015: Winner of a fellowship to attend the course "NGS for evolutionary biologists: from basic scripting to variant calling", Cineca, Rome, Italy

- 07/2006: Graduated in Medical Biotechnology and Molecular Medicine cum laude

#### Track records:

- Personal H-index: 27 (Scopus, Elsevier)
- Total number of citations: 2563 (Scopus, Elsevier)
- Total number of publications: 85 (28 as first author, 13 as last author and 25 as corresponding author)
- Conference contributions as first author: 37 (5 oral communications and 32 poster presentations)

#### Projects:

- 08/2025: PI of RILuzole repurposing in OVArrian cancer (RILOVA). Human Technopole 25-G-GROUND1, ID: 2060040
- 01/2020-12/2023: PI of WP3 entitled "Genetic analysis of HPV variants" for the project "Human Papillomavirus (HPV) detection in blood and HPV lineage variants analysis: new potential biomarkers for cancer prevention?". Cariplo Foundation 2019
- 2018-2020: Member of the International Research Group: H2020-EU.1.4.1.1. ID-EPTRI (Infradev - European Paediatric Translational Research Infrastructure), ID: 777554
- 2014-2021: Member of the International Research: MIUR National Operative Program for Research and Competitiveness 2014-2020, entitled "MOLIM ONCOBRAIN LAB" (PON\_ARS01\_00144)

### C. Contributions to Science

Dr. Villa was interested, since the beginning of her career, to the study of the etiopathogenesis of different forms of neurological diseases with a translational approach using cellular biology techniques as well as molecular biology and genetics. In particular, during her first years of research activities at the Department of Neurological Sciences of the University of Milan, she mainly focused on the study of novel biomarkers and genetic risk factors in key genes for the early development and progression of neurodegenerative and demyelinating diseases (Alzheimer's disease, frontotemporal dementia and multiple sclerosis), as well as the identification of genetic forms of dementia. She detected several single nucleotide polymorphisms (SNPs) in genes encoding for SPARC-like protein 1, neuronal nitric oxide synthase, monocyte chemoattractant protien 2, semaphoring 3A, BCL2-associated athanogene 1, specificity protein 4 acting as risk or protective factors for Alzheimer's disease, frontotemporal dementia or multiple sclerosis (Scalabrini, *Neurosci Lett*, 2007; Venturelli, Villa, *Eur J Neurol*, 2008; Villa, *J Neurol*, 2009; Villa, *Neurol Sci*, 2010; Venturelli, Villa, *JAD*, 2011; Villa, *JAD*, 2012). She also discovered novel microtubule associated protein tau gene (*MAPT*) mutations in patients affected by frontotemporal dementia (Villa, *JAD*, 2011; Cerami, *JAD*, 2013). Regarding the study of novel prognostic and diagnostic biomarkers, her attention has been focused on circulating microRNAs in blood, identifying a subset of them changed in patients with Alzheimer's disease and multiple sclerosis (Ridolfi, *IJMS*, 2013; Galimberti, Villa, *JAD*, 2014).

From 2014 to date, her work is carrying out at the School of Medicine and Surgery of the University of Milano-Bicocca, where she is actually involved in the study of the etiopathogenesis of autism spectrum disorders and epilepsies. Within these projects, she contributed to the identification of new genes/mutations by the means of genetic and genomic NGS analyses and to the characterization of their effects *in vitro* (Binini, *Brain Res*, 2017; Binda, *Front Cell Neurosci*, 2018; Villa, *Front Mol Neurosci*, 2019; Cadieux-Dion, *Can J Neurol Sci* 2020; Villa, *IJERPH*, 2022). More recently, Dr. Villa broadened her scientific research also to oncogenesis, with a specific focus on breast and ovarian cancers using *in vitro* approaches. Her work in this area aims to unravel the complex biological mechanisms driving tumor development and progression, with the ultimate goal of identifying novel molecular targets that could pave the way for more accurate diagnostic tools and innovative therapeutic strategies (Cordani, *IJMS*, 2023; Rainone, *IJMS*, 2023; Duranti, *IJMS*, 2024; Jemma, *Cancers* 2025).