

## CURRICULUM VITAE

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## EDUCATION

2019-2028 Habilitation for university teaching (Assistant Professor)  
**BIO/12 Clinical Biochemistry and Clinical Molecular Biology**  
2005-2008 PhD cum laude, Translational and Molecular Medicine, University of Milan Bicocca,  
Milan  
2002-2005 Specialization cum laude, Biotechnological Applications, University of Milan, Milan  
1994-1999 Degree cum laude, Biological Sciences, University of Milan, Milan

## CURRENT POSITIONS

04/2018 – now Head, Unit of “Immunotherapy of Brain Tumors”, (permanent position), Unit  
of Neuro-Oncology, Fondazione IRCCS Istituto Neurologico "C.Besta" Milan  
Italy  
01/2021 – now Head, Lab of Neuro-Oncology Genetics), Unit of Neuroncology, Fondazione  
IRCCS Istituto Neurologico "C.Besta" Milan Italy  
06/2020 – now Vice- Head of the Functional Department of Experimental Neuroscience,  
Fondazione IRCCS Istituto Neurologico "C.Besta" Milan Italy

## PREVIOUS POSITIONS

07/2015 – 06/2016 Visiting professor at Department of Microbiology and Immunology, University  
of North Carolina, Lineberger Comprehensive Cancer Center, Chapel Hill, NC,  
USA (Director Dr. Gianpietro Dotti)  
04/2010 – 04/2018 Senior Scientist (permanent position) Unit of Molecular Neuro-Oncology,  
Fondazione IRCCS Istituto Neurologico "C.Besta" Milan Italy

- 09/2008 - 02/2014 Visiting Senior Scientist at IFOM-IEO Campus, Milan Italy
- 05/2006 - 03/2010 PhD, Unit of Molecular Neuro-Oncology, Fondazione IRCCS Ist.Nazionale Neurologico "C.Besta".

#### **FELLOWSHIP**

- 01/2002 - 04/2006 PhD Student, Unit of Molecular Neuro-Oncology, Fondazione IRCCS Istituto Neurologico "C.Besta"
- 01/2000 - 12/2001 Research Fellow, Unit of Immuno-biology of Human Tumors, Fondazione IRCCS Istituto Tumori, Milan Italy
- 03/1998 - 12/1999 Student – Internship, Laboratory of Immuno-pharmacology, Department of Pharmacological and Bio-molecular Science, University of Milan, Milan

#### **• SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS (Last 5 Years)**

- 2021 – 2024 1 PhD students University of Milano Bicocca (PhD program in Translational and Molecular Medicine)  
1 PhD student from University of Pavia (PhD program in GENETICS, MOLECULAR AND CELLULAR BIOLOGY)
- 2023-2024 5 graduate students from University of Pavia (4 Master in Neurobiology and 1 Medical and pharmaceutical biotechnologies)
- 2022-2023 4 graduate students from University of Pavia (Master in Neurobiology)  
1 graduate student from University of Piemonte (Master in Biology)
- 2021-2022 3 graduate students from University of Pavia (Master in Neurobiology)  
1 graduate student from University of Milan (Master in Biology)  
1 PhD student (PhD program in Translational and Molecular Medicine)
- 2020-2021 3 graduate students from University of Milano Bicocca (Master in Biology)  
1 graduate student from University of Pavia (Master in Neurobiology)

- **TEACHING ACTIVITIES**

**Ongoing**

2020-present Adjunct Professor – Course “Neuroimmunology and Molecular Neurobiology” – Master in Neurobiology, University of Pavia, Pavia Italy

2016-present Professor - PhD program in Translational and Molecular Medicine (Course Brain immunology and immunotherapy of malignant gliomas) University of Milano Bicocca, Milan Italy

**Previous**

2018-2020 – Teaching assistant – Neuroimmunology Course – Master in Neurobiology University of Pavia

2020-2021 Teaching assistant at Specialization of Allergology and Clinical Immunology- University of Pavia (Course of “Ontogenesis of the immune system”)

1. “Immunotherapy and T cell-based therapy for glioblastoma: opportunities and challenges” September 12, 2020, PhD in NeuroScience "Summer School" – University of Genova
2. “Chimeric Antigen Receptor (CAR) -T: opportunities, challenges and implications for the treatment of glioblastoma”, June 12, 2020, PhD course in clinical and experimental immunology. Padua University
3. “Immunotherapy of malignant gliomas: obstacles and perspectives” Neurobiology Conference, December 11, 2014, Neurobiology Course, University of Pavia
4. “The Central Nervous System Immune Privilege: hiding in plain sight.” PhD Students Meeting June 24-25, 2014 at the "Mario Negri" Institute for Pharmacological Research in Milan
5. “From bench to bedside: example of translational medicine.” December 20, 2013 Biology Course, University of Milan
6. “Immunotherapy and cancer stem cells as a novel target for glioblastoma.” December 20, 2012, Medical School, University of Brescia
7. “Dendritic Cell Immunotherapy for malignant gliomas”, January 22, 2007, Pharmacology Course, University of Milan.
8. “Stem Cell therapy “Biotechnology Course, January 27, 2005 University of Milan

- **ORGANISATION OF SCIENTIFIC MEETINGS**

2016 Scientific Organization: Brain cancer immunotherapy: an update - Milan, AmadeoLab

2007            Scientific Organization: Brain Tumor Immunotherapy Symposium - Milan, IFO\_IEO  
Campus

- **REVIEWING ACTIVITIES**

2022 – now     Associate Editor in Frontiers - Neuro-Oncology and Neurosurgical Oncology

2021 now      Review Editor in Vaccines and Molecular Therapeutics

**Reviewer for the following journals:**

Clinical Cancer Research

Nature Communications

Neuro-Oncology

European Journal of Cancer

Journal of Neuro-Oncology

**MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

AACR-

NIBIT

AINO

- **MAJOR COLLABORATIONS**

Frederik De Smet, Department of Imaging and Pathology, KULeuven (Single Cell Omics)

Gianpietro Dotti, Lineberger Cancer Center University of North Carolina, NC USA (CAR T cells)

Bozena Kaminska, Nencki Institute of Experimental Biology, Warsaw, Poland (molecular mechanisms of neuroinflammation and cancer related inflammation)

Antonio Iavarone, Miller School of Medicine, Miami, FL USA (biologic and genetic alterations driving subgroups of malignant brain tumors)

- **CAREER BREAKS**

01/03/2017 – 02-09-2017    Maternity Leave

**KEYWORDS/AREAS OF INTEREST:**

Malignant glioma, brain tumors, immunotherapy, cancer immunology, cancer vaccines.

- **ONGOIN GRANT as PI**

Project title	ID number (project number or application date)	Amount (€)	Duration of funded project (start-end date)	Funding agency
Overcoming an ionic checkpoint for CAR T-cell therapy of glioblastoma	PNRR-TR1-2023-12377273	900.00,00	2024-2026	Ministry of Health
Tumor Infiltrating Lymphocytes for glioblastoma therapy	IG2019 – ID 22980	754.000,00	2020-2025	AIRC Italian Association for Cancer Research
Single-cell and multi-omics approaches to dissect the glioblastoma immune contexture for predicting the feasibility of T cell therapy	GLYMMUNY	250.000,00	2021-2025	Ministry of Health

**ONGOING GRANT as partner**

CAL.HUB.RIA.		200.000,00	2022-2025	Ministry of Health
The malignant Glioma immuno-oncology matchmaker: towards data-driven precision medicine using spatially resolved radio-multiomics	GLIOMATCH	750.000,00	2024-2028	EU HORIZON-MISS-2023-CANCER-01-0

## Narrative biosketch

1. Since 2004 I have been working on Dendritic Cell (DC) Immunotherapy and my collaboration has been pivotal in the translation of DC immunotherapy from the bench to the bedside. I have first gained extensive experience in pre-clinical investigations on development of therapeutic vaccines against glioblastoma (GBM) based on the use of DCs. I then set up the protocol for DC preparation under GMP conditions and helped to create the cell factory currently active at Istituto Besta. Three clinical studies stemmed from this experience for newly diagnosed and recurrent GBM patients (DENDR1 EudraCT N° 2008-005035-15, DENDR2-NCT04002804,; DENDR-STEM NCT02820584) (1–3), supporting my commitment to translational immunotherapy.

2. One of my key interest is in studying glioma-stem like cells as a specific target for immunotherapy. In a seminal work cited >200 times, we provided a proof of concept that using a subpopulation enriched in glioma-stem like cells for DC loading can increase the efficacy of anti-glioma (and possibly anti-cancer) immunotherapy. This approach is patented (Method for stimulating Dendritic Cells and cell product thus obtained for the autologous immunotherapy of solid human tumors patent n. US 8129183 B2). A pilot clinical study focused on loading of DC with GSC lysate has been approved (DENDR-STEM) (4). My objective is to continue on studying the biology of tumors and the role the immune system against cancers to facilitate the translation of innovative lab strategies into impactful approaches for cancer patients.

3. From July 1st 2015 to June 30rd 2016 I was a visiting professor at UNC-Lineberger Cancer Center at Chapel Hill, NC, USA in the laboratory of Dr Gianpietro Dotti working on developing a novel CAR T cell strategy for GBM. Two publications in high impact journal stemmed from this synergy (5,6). A third manuscript has been recently accepted. These preclinical trials are currently being translated into Phase I clinical trials for patients with GBM and served as the foundations for the IND submission. These partnerships with Drs. Dotti and Savoldo at UNC-Chapel Hill is still ongoing and highlight my interest in fostering collaborative projects with researches and physician scientists.

4. I have developed a methodological approach for the isolation, activation and expansion of high numbers of tumor-reactive infiltrating lymphocytes, starting from the cavitron ultrasonic surgical aspirator (CUSA) emulsion, as a source of tumor material and 41BB (CD137) as a key marker for T cell selection. Clinical preparation of TILs under good manufacturing practice (GMP) conditions requires laborious ex-vivo manipulations. My short term goal is to transfer the manual and laborious TIL manufacturing procedure to the fully closed automated CliniMACS Prodigy system, thus minimizing the number of open handling steps and ensuring a reproducible, high-quality standard. With the support of AIRC, a pivotal clinical study is underway to treat recurrent GBM patients with ex vivo expanded and activated TILs (IG2019- ID. 22980 project – P.I. Pellegatta Serena 2020-2024). My long term goal is to enable preclinical projects into cellular products for the treatment of patients with cancers.

5. I am Adjunct Professor at degree program in Neurobiology, Department of Biology and Biotechnology, University of Pavia (Course of Neuroimmunology). I am a faculty member of the PhD program in “Translational and Molecular Medicine”, University of Milan Bicocca. Over the past 15 years, I have mentored more than 30 ungraduated and predoctoral students, and trained more than 20 PhD fellows and junior researchers. One of my goal is to continue to provide training and guidance for clinical and basic/translational researchers in tumor immunology and/or cellular immunotherapy

1. Pellegatta S, Eoli M, Frigerio S, Antozzi C, Bruzzone MG, Cantini G, et al. The natural killer cell response and tumor debulking are associated with prolonged survival in recurrent glioblastoma patients receiving dendritic cells loaded with autologous tumor lysates. *Oncoimmunology*. 2013 Mar 1;2(3):e23401.
2. Eoli M, Corbetta C, Anghileri E, Di Ianni N, Milani M, Cuccarini V, et al. Expansion of effector and memory T cells is associated with increased survival in recurrent glioblastomas treated with dendritic cell immunotherapy. *Neurooncol Adv*. 2019 Dec;1(1):vdz022.
3. Pellegatta S, Eoli M, Cuccarini V, Anghileri E, Pollo B, Pessina S, et al. Survival gain in glioblastoma patients treated with dendritic cell immunotherapy is associated with increased NK but not CD8+ T cell activation in the presence of adjuvant temozolomide. *Oncoimmunology*. 2018 Jan 29;7(4):e1412901.
4. Finocchiaro G, Pellegatta S. Immunotherapy with dendritic cells loaded with glioblastoma stem cells: from preclinical to clinical studies. *Cancer Immunol Immunother*. 2016 Jan;65(1):101–109.
5. Nehama D, Di Ianni N, Musio S, Du H, Patané M, Pollo B, et al. B7-H3-redirected chimeric antigen receptor T cells target glioblastoma and neurospheres. *EBioMedicine*. 2019 Sep;47:33–43.
6. Pellegatta S, Savoldo B, Di Ianni N, Corbetta C, Chen Y, Patané M, et al. Constitutive and TNF $\alpha$ -inducible expression of chondroitin sulfate proteoglycan 4 in glioblastoma and neurospheres: Implications for CAR-T cell therapy. *Sci Transl Med*. 2018 Feb 28;10(430).

#### **ORAL and POSTER PRESENTATIONS**

More than 30 presentations at national and international conferences (i.e. AINO, NIBIT, SIN, AACR, SNO, CICON...)

## INVITED PRESENTATIONS

1. "Preclinical studies: new insights?" EANO Seminars 2024: Foundations in Neuro-Oncology March 15-16, 2024 - Warsaw, Poland
2. Adoptive Cell Therapy in solid tumors, Webinar 18 November 2022
3. Development of a pre-clinical workflow to generate TILs" Virtual Meeting: Engineering immune cells: seamless transition from research to clinic. November 17th, 2020
4. "The Molecular Stratagem of Glioblastoma" invited as a faculty to cover the topics of immunotherapy for glioblastoma. Venice, Italy, May 6-11, 2018, NSAS (Neuroscience School of Advanced Studies)
5. "The Molecular Stratagem of Glioblastoma" invited as a faculty to cover the topics of immunotherapy for glioblastoma. Cortona, Italy, May 14-21, 2016, NSAS (Neuroscience School of Advanced Studies)
6. "Markers in cancer immunology and immunotherapy" Molecular Marker in Neuro-Oncology, Neurological Institute Besta, Milan, April 11 2015
7. "Immunotherapy with dendritic cells loaded with glioblastoma stem cells: from preclinical to clinical studies" NIBIT (Italian Network of Bio-Immunotherapy of Tumors) Meeting of Siena (October 2014), session: Targeting cancer stem cells for Immunotherapy
8. "Interaction of immunotherapy and chemotherapy", Glioblastoma 2013 meeting, June 21st 2013, Milan
9. "Cancer Stem Cells in Glioblastoma: the radial glia connection", NIBIT, 16-18 October 2008, Siena
10. "MRI in Experimental Neuro-Oncology". Italian MRI Users' meeting Bruker Biospin, 25 June 2008, Palazzo Le Stelline, Milan
11. "Dendritic cell immunotherapy for glioblastoma", Advanced therapies: An European Approach, 8 November 2007, Milan (San Raffaele Biomedical Science Park)
12. "New developments for DC immunotherapy: intra-tumoral injection of DC and targeting of cancer stem like cells", Brain Tumor Immunotherapy (An International Symposium), 19 October 2007, Milan (IFOM-IEO Campus)
13. "Preclinical development and clinical application of tumour vaccines" HGG-Immunotherapy 2006, Universitaire Ziekenhuizen Leuven Leuven, Belgium – October 26, 2006

Publications: **65**

Scopus Author ID: 8501683300

ResearcherID: AAL-3693-2021

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*I hereby authorize the treatment of my personal data, declaring to be aware [...] Italian Law 196/2003 regarding the safeguarding of privacy.*

*This Curriculum Vitae has the function of self-certification pursuant to art. 46 of the Presidential Decree n. 445 of 12/28/2000*