

NAME: Matteoli, Michela

POSITION TITLE: Director, Program of Neuroscience, Humanitas Research Hospital

Group Leader Pharmacology and Brain Pathology Lab

Full Professor of Pharmacology, Humanitas University

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
University of Pisa, Italy	MS	1983	Biological Sciences
University of Pisa, Italy	PhD	1989	Neuroscience

A. Personal Statement

I received my PhD from the University of Pisa. From 1989 to 1992 I have been postdoctoral fellow at the Yale University School of Medicine and Visiting Scientist at the Virginia School of Medicine. In 1992 I established my laboratory at the CNR-Center of Molecular and Cellular Pharmacology. In 2002 I became Associate Professor of Pharmacology at the University of Milano and became a Full Professor in 2011. Since 2013 I am Chair of Neuro Center and since 2024 Director of the Neuroscience Program at Humanitas Research Hospital. From 2014 to 2018 and from 2019 to 2023 I have been Director of the CNR Institute of Neuroscience.

I have been awarded with EMBO and IBRO-MacArthur fellowships. In 2013 I received the Mid-Career Nature Mentoring Award, in 2015 the Atena prize for scientific achievements, in 2019 the Feltrinelli Prize, in 2022 the Marcello Sgarlata Prize and in 2024 the Porto Venere Woman Prize. I am member of the European Molecular Biology Organization (EMBO), the Academia Europaea and Accademia dei Lincei. I am present or past member of international Scientific Advisory Boards, including the Institute of Experimental Medicine in Budapest, the Center of Psychiatry and Neurosciences of INSERM Paris-Descartes University, the Paris School of Neuroscience, the IRCCS San Martino in Genova and Fondazione Veronesi. I serve/served in international scientific committees, including the European Research Council (ERC), the Swiss National Science Foundation (SNSF), and the Harvard-Armenise Foundation. I am/was coordinator or partner in several scientific networks, including NATO, HFSP and EC-FP7, Era-NET Neuron. In 2022 I have been awarded with an ERC Advanced Grant. My scientific activity is also funded by Telethon, Cariplo, FISM, the Italian Ministry of Health and the Italian Ministry of Education University and Research. My research focuses on the role played by the immune system on the formation and function of brain circuits. I have authored over 170 research papers and scientific reviews. My H index is 67 (Scopus) and my FWCI is 2,29.

B. Positions, Scientific Appointments, and Honors

POSITIONS AND SCIENTIFIC APPOINTMENTS

2024 – Present	Scientific Director of the Neuroscience Program, Humanitas Research Hospital
2019 – 2023	Director, CNR Italian Institute of Neuroscience (second term)
2015 – Present	Full Professor of Pharmacology, Humanitas University (on leave 2014- 2018)
2014 – 2018	Director of the Italian CNR Institute of Neuroscience
2013 – 2024	Chair of Neuro Center, Humanitas Research Hospital
2011 – 2015	Full Professor of Pharmacology, Dept of Medical Biotechnology Univ of Milano
2002 – 2011	Associate Professor of Pharmacology, Dept of Medical Pharmacology, Univ of Milano
1997 – 2002	First Researcher - CNR- Center of Cellular and Molecular Pharmacology

1991 – 1997	Researcher - CNR, Center of Cytopharmacology
1989 – 1991	Postdoctoral fellow at the Yale University School of Medicine - Dept. of Cell Biology
1990 – 1990	Visiting Scientist, University of Virginia School of Medicine
1988 – 1991	Researcher - CNR Istituto Fisiologia Centri Nervosi - Milano (on leave June 1989-June 1991)

HONORS AND AWARDS

2024	Porto Venere Woman Prize - XVIII edition
2022	Marcello Sgarlata Prize (Rome, Campidoglio)
2022	Elected member of Accademia dei Lincei
2022	Recipient of ERC Advanced Grant Matilda
2019	Premio Feltrinelli for Physiology, Biochemistry and Pharmacology, Lincei Academy
2016	Special Award from Sapio for contributions to Italian research (Rome, Montecitorio)
2015	Atena Prize for scientific achievements (Rome, Campidoglio)
2014	Elected member of EMBO (European Molecular Biology Organization)
2013	Mid-career Nature Mentoring Award (Nature Journals, Rome, Quirinale)
2012	Member of the Academia Europaea, due to outstanding achievements as a researcher
1989	European Molecular Biology Organization (EMBO) - long term fellow
1989	International Brain Research Organization (IBRO) - MacArthur travel fellow

PARTICIPATION TO INTERNATIONAL SCIENTIFIC BOARDS

Since 2025	Member of the scientific advisory board of the Robert Debré Children Brain Institut (Paris)
Since 2024	Member, External Scientific Advisory Board of Institute of Experimental Medicine Budapest
Since 2024	Member of EMBO Fellowship Committee
Since 2024	Member of the External Advisory Board of the Policlinico San Martino IRCCS, Genova
2023-2024	Member of the international scientific committee of FENS Forum 2024 Wien.
2024	Member of Assessment Panel of the Institute of Experimental Medicine Budapest
2022	President of the SAB for the Center for Integrative Research in Biology, Collège de France, Paris
2022	Invited expert for Swiss National Science Foundation (SNSF) Starting Grants Program.
2021	Member, Adjudication Committee for doctoral examination, Faculty of Medicine University of Oslo.
2021	Invited External Expert in the Tenure Track Committee for the German Centre for Neurodegenerative Diseases (DZNE), Bonn.
2021	Member of the Committee for the selection of Early Career Fellowship (ECF) Program, Human Technopole (as expert nominated by the Ministry of University and Research).
2020	External Member of Committee for nomination procedure for Associate Professor at the Department of Fundamental Neurosciences, University of Geneva School of Medicine
2020-2022	Member of the LS5 Panel (Neuroscience) for ERC advanced grants
2018	Invited Member of the Life Sciences panel in the Research Assessment of University of Helsinki
Since 2018	member of Higher Education, Research and CULTure (HERCULES) group, Academia Europaea
2017-2022	Contributing member for Faculty of 1000 (F1000Prime)
2015-2023	Member of the Scientific Advisory Board, Institute of Neuroscience and Psychiatry, Paris
2015	Nominated International Expert for Russian Science Foundation (RSF)
2014-2017	Member of the Advisory Committee of the Armenise Harvard-Italy Foundation
2014	Member of the Panel for Science Foundation Ireland (SFI)
Since 2014	Member of the Advisory Committee of the EBRI Foundation
Since 2013	Member of the Scientific Advisory Board of the Paris School of Neuroscience (ENP).

Since 2013 Member of the International Scientific Committee of the Umberto Veronesi Foundation
Since 2013 Member of the Scientific Committee of the Centro di Cultura Scientifica A. Volta.
Past Member of the Board of Directors of the Center of Excellence for Neurodegenerative Diseases
Past Member of the Board of Directors of the Italian Society for Neuroscience
Since 1992 Member of several national and international Committees for PhD School final examinations

INVITATIONS TO INTERNATIONAL MEETINGS /SEMINARS (selected, from 2018)

June 2024: 41st Blankenese Conf on Synaptopathies: Molecular Mechanisms of Brain Diseases, Hamburg
May 2024: EMBO Workshop Microglia in health and disease, Genova
May 2024: 9th European synapse meeting, Berlin
April 2024: Second International Workshop on Sexual dimorphism in cancer, Lausanne
March 2024: Centro de Biología Molecular Severo Ochoa (CBM, CSIC-UAM), Madrid
February 2024: Deutsches Zentrum für Neurodegenerative Erkrankungen (DZNE), Munich
January 2024: Keynote Lecture Neuroscience Meeting University Paris-Saclay, Gif-sur-Yvette
January 2023: FENS-Hertie Winter School 2022 on Neuroimmune interactions, Innsbruck, Austria
July 2022: FENS Forum, Paris, Symposium Specifying neuronal connectivity across species
June 2022: 15th WORLD CONGRESS ON INFLAMMATION, Rome, Chair and Speaker, Microglial involvement in brain physiopathology: mechanisms and strategies for innovative therapeutic intervention
June 2022: Armenise Harvard Foundation's 18th Symposium, Neuroscience at the Edge: Frontiers of Knowledge, Varignana, Italy
May 2022: College de France Symposium on "From Development to Neurodegeneration: Roles of Microglia and Other Immune Brain Cells"
October 2021: BraYn Conference, Pisa, Italy
May 2021: Accademia dei Lincei, Roma, Italy
April 2021: Bellvitge Biomedical Research Institute, Barcelona
March 2021: Université de Lausanne
March 2021: University of Edinburgh
January 2021: CNR-EMBL Scientific Collaboration Meeting
January 2020: Hungarian Neuroscience Society Annual Meeting, Szeged, Hungary
September 2019: "Quantitative Synaptology" Meeting, Goettingen Germany
July 2019: XIV European Meeting on Glial Cell Function in Health and Disease, Porto (Chair and Speaker)
May 2019: International Conference "Perinatal Origins of Neuropsychiatric Disorders: from Molecular Mechanisms to Therapeutic Perspectives", Palermo
May 2019: 6th Venusberg Meeting on Neuroinflammation, Bonn
2018: Fyssen Foundation seminar series on "News insights into neuro-glia communication", Paris
2018: Eibsee Meeting on "Cellular Mechanisms of Neurodegeneration", Elbsee, Germany
2018: International meeting on Toxins, Padova
2018: Plenary Lecturer at the PostDoc Symposium, Leibniz-Institute for Molecular Pharmacology and Max-Delbrück-Center, Berlin

REVIEWING ACTIVITIES

Grant referee: European Research Council; National Science Foundation; Human Frontier Science Program Organization (research grants and fellowships); Deutsche Forschungsgemeinschaft (DFG); MRC Medical Research Council; The Israel Science Foundation; Research Council for Earth and Life Sciences in the Netherlands; Helmholtz Center, Germany; German-Israeli Foundation for Scientific Research and Development; Agence Nationale de la Recherche; Federation pour la Recherche sur le Cerveau (FRC); University of Wien (expert for neuroimmunology); Long term EMBO fellowships; Academy of Medical Sciences, UK; Ministero Italiano dell'Università e della Ricerca Scientifica; Telethon Italia; Comitato di

Indirizzo per la Valutazione della Ricerca in Italia (CIVR); Università di Padova; Federazione Italiana Sclerosi Multipla.

Manuscript referee: Science, Nature, Nature Metabolism, Immunity, Nature Review Neuroscience, PNAS, Cell Stem Cell, EMBO Journal, Brain, Neuron, Nature Comm, TINS, Journal of Cell Biology, Journal of Neuroscience, Journal of Neurobiology, Journal of Neurocytology, Journal of Cell Science, Journal of Neurochemistry, Journal of Comparative Neurology, European Journal of Cell Biology, European Journal of Neuroscience, Neuroscience, Exp Cell Research, FEBS Letters, PLoS One.

Member of Editorial Boards: -Current Research in Neurobiology (since 2021); Brain Cell Biology (Journal of Neurocytology) (2005-2009), Frontiers in Neuroscience (since 2008), European Journal of Neuroscience (Scientific Review Associate) (2008-2012), Archives Italiennes de Biologie - A Journal of Neuroscience (since 2009).

C. Contributions to Science

Total number of publications: 175

H index: 67 (Scopus), 79 (Scholar)

number of citations: above 15,000 (Scopus)

Selection of 12 publications:

Borreca A, Mantovani C, Desiato G, Corradini I, Filipello F, Elia C, D'Autilia F, Santamaria G, Garlanda C, Morini R, Pozzi D* and Matteoli M* (2024) Loss of Interleukin 1 signaling causes impairment of microglia-mediated synapse elimination and autistic-like behaviour in mice. Brain Behavior and Immunity in press (IF 8,8)

Tagliatti E, Desiato G, Mancinelli S, Bizzotto M, Gagliani MC, Faggiani E, Hernández-Soto R, Cugurra A, Polisenio P, Miotto M, Argüello RJ, Filipello F, Cortese K, Morini R, Lodato S, Matteoli M. Trem2 expression in microglia is required to maintain normal neuronal bioenergetics during development. Immunity. 2024 Jan 9;57(1):86-105.e9. doi: 10.1016/j.immuni.2023.12.002. Epub 2023 Dec 29. PMID: 38159572; PMCID: PMC10783804 (IF 25,5)

F Mirabella, G Desiato, S Mancinelli, G Fossati, M Rasile, R Morini, M Markicevic, C Grimm, C Amegandjin, A Termanini, C Peano, P Kunderfranco, G di Cristo, V Zerbi, E Menna, S Lodato, M Matteoli* and D Pozzi* (2021) Prenatal interleukin 6 elevation increases glutamatergic synapse density and disrupts hippocampal connectivity in offspring. Immunity Nov 9;54(11):2611-2631.e8. doi: 10.1016/j.immuni.2021.10.006 (IF 43,47)

Carlioni S, Bertocchi A, Mancinelli S, Erreni M, Borreca A, Braga D, Giugliano S, Mozzarelli A, Di Sabatino A, Penna G, Matteoli M, Lodato S*, Rescigno M* (2021) Identification of a Choroid Plexus Vascular Barrier which Closes up during Intestinal Inflammation to Protect the Brain. Science Oct 22;374(6566):439-448. doi: 10.1126/science.abc6108. Epub 2021 Oct 21 (IF 41.845)

N Scott-Hewitt*, F Perrucci*, R Morini, M Erreni, M Mahoney, A Witkowska, A Carey, E Faggiani, L T Schuetz, S Mason, M Tamborini, M Bizzotto, L Passoni, F Filipello, R Jahn, B Stevens & M Matteoli (2020) Local externalization of phosphatidylserine mediates developmental synaptic pruning by microglia. EMBO J. 2020 Aug 17;39(16):e105380. (IF 11,2)

Fossati G, Pozzi D, Canzi A, Valentino S, Mirabella F, Morini F, Ghirardini E, Filipello F, Moretti M, Gotti C, Annis DA, Mosher DF, Garlanda C, Bottazzi B, Tarabozzi G, Mantovani A, Matteoli M* and Menna E* (2018) The innate immune molecule PTX3 enhances the synaptic content of AMPA receptors via extracellular matrix remodeling and β 1 integrin. EMBO J pii: e99529. doi: 10.15252/emboj.201899529 (IF 11,2).

Filipello F, Morini R, Starvaggi C, Canzi A, Corradini I, Erreni M, Otero K, Piccio L, Perrucci F, Tamborini M, Rajendran L, Menna E, Vetrano S, Michalski B, Fahnestock M, Paolicelli R, Matteoli M (2018) The

microglial innate immune receptor TREM2 is required for neuronal synapse elimination. *Immunity* 48(5):979-991 (IF 22.84)

I Corradini, E Focchi, M Rasile, R Morini, G Desiato, R Tomasoni, M Lizier, E Ghirardini, D Morone, I Barajon, FI Antonucci, D Pozzi and M Matteoli (2018) maternal immune activation delays excitatory-to-inhibitory gaba switch in the offspring. *Biol. Psy.* 83(8):680-691 (IF 11,4)

Tomasoni R, R Morini, J P. Lopez-Atalaya, I Corradini, A Canzi, M Rasile, C Mantovani, D Pozzi, C Garlanda, A Mantovani E Menna, A Barco and Matteoli M (2017) Lack of IL-1R8in neurons causes hyperactivation of IL-1 receptor pathway and induces MeCP2-dependent synaptic defects. *eLife* Mar 28;6. pii: e21735. doi: 10.7554/eLife.21735. (IF 8.303)

Menna E, S Zambetti, R Morini, Aa Donzelli, D Calvigioni, A Disanza, C, V Cappello, G Fossati, C Regondi, C Frassoni, M Francolini, M Sala, G Scita, M Fahnestock and Matteoli M (2013) Eps8 controls dendritic spine density and synaptic plasticity through its actin-capping activity. *EMBO J* 12;32(12):1730-44. (IF 10.748)

Mazzitelli S, Filipello F, Rasile M, Lauranzano E, Starvaggi-Cucuzza C, Tamborini M, Pozzi D, Barajon I, Giorgino T, Natalello A, Matteoli M. (2016) Amyloid- β 1-24 C-terminal truncated fragment promotes amyloid- β 1-42 aggregate formation in the healthy brain. *Acta Neuropathol Commun.* Oct 10;4(1):110. doi: 10.1186/s40478-016-0381-9. IF 7,58

Joshi P, Turola E, Ruiz A, Bergami A, Libera DD, Benussi L, Giussani P, Magnani G, Comi G, Legname G, Ghidoni R, Furlan R, Matteoli M*, Verderio C*. (2014) Microglia convert aggregated amyloid- β into neurotoxic forms through the shedding of microvesicles. *Cell Death Differ.* 2014 Apr;21(4):582-93. doi: 10.1038/cdd.2013.180. Epub 2013 Dec 13. IF (12,4)

Tomasoni R, Repetto D, Morini R, Gardoni F, Di Luca M, Turco E, Defilippi P and Matteoli M (2013) SNAP-25 REGULATES SPINE FORMATION THROUGH POSTSYNAPTIC BINDING TO p140Cap. *Nature Comm*, 19;4:2136. (IF 10.742)

Berghuis P, Rajnicek AM, Morozov YM, Ross RA, Mulder J, Urban GM, Monory K, Marsicano G, Matteoli M, Canty A, Irving AJ, Katona I, Yanagawa Y, Rakic P, Lutz B, Mackie K, Harkany T. (2007) Hardwiring the brain: endocannabinoids shape neuronal connectivity. *Science.* 316 (5828):1212-6 (IF 30.028)

Verderio C., Pozzi D., Pravettoni E., Inverardi F., Schenk U., Coco S., Proux-Gillardeaux V., Galli T., Rossetto O., Frassoni C. and Matteoli M. (2004) SNAP-25 modulation of calcium dynamics underlies differences in GABAergic and glutamatergic responsiveness to depolarization. *Neuron*, 41: 599-610 (IF 14.439).

Complete List of Published Work:

URL for web site: <http://www.humanitas-research.org/matteoli-michela/>

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