



PERSONAL INFORMATION

Maria Pia Abbracchio

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POSITION

Deputy Rector (2018-2024) and Vice Rector for Research,
University of Milan, Italy

WORK EXPERIENCE

2018–Present

Deputy Rector (2018-2024) and Vice Rector for Research
University of Milan, Milan (Italy)

2003–Present

Head, Laboratory of Molecular and Cellular Pharmacology of Purinergic
Transmission

Department of Pharmacological and Biomolecular Sciences, Via Balzaretti 9,
Milan (Italy)

Main research interests concern the pathophysiological roles of extracellular nucleosides and nucleotides and their receptors (the P2 receptors), with special focus on their role in the growth, survival, differentiation and death of central and peripheral nervous system cells, as well as in degenerative inflammatory events. Efforts are aimed at the development of new neuro-reparative/regenerative strategies in diseases like multiple sclerosis, amyotrophic lateral sclerosis, cerebral ischemia and neuropathic trigeminal pain. She has developed unique expertise in the physiopathology of glial cells (astrocytes, oligodendrocytes and microglia), which led her recent work to focus on the "stem" properties of some of these cells after damage, and on the possibility of using purinergic ligands for inducing these cells to generate new neurons and new glial cells and exert trophic effects in the brain and spinal cord in order to develop innovative repair strategies.

2002–Present

Full Professor of Pharmacology
University of Milan, Milan (Italy)

1998–2002

Associate Professor of Pharmacology
University of Milan, Milan (Italy)

1993–1998

Assistant Professor of Neuropsychopharmacology
University of Milan, Milan (Italy)

1992–1993

Honorary Research Fellow
University College of London, London (UK)

1982–1992 **Researcher**
University of Milan, Milan (Italy)

1980–1982 **Postdoctoral fellow**
Department of Pharmacology, Medical School, University of Texas (USA)

EDUCATION AND TRAINING

1979 **Master's degree in Pharmacy** 110/110 con lode
University of Milan, Milan (Italy)

1984 **Postdoctoral degree in Experimental Toxicology** 70/70
University of Milan, Milan (Italy)

1988 **Research Doctorate in Experimental Medicine**
MIUR, Rome (Italy)

PERSONAL SKILLS

Mother tongue(s) Italian

Foreign language(s)

English

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken interaction	Spoken production	
C2	C2	C2	C2	C2

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user
Common European Framework of Reference for Languages

French

A2 B2 A2 A2 B1

Communication skills

Experience in scientific communication to non-scientific public media (newspapers, TV) and author of several press releases (both in Italy and in the United States, see Scientific American at: <http://www.sciam.com/article.cfm?id=controlling-cellular-gate&SID=mail>), interviews and invitations to public debates and television programs.

She has given more than 100 oral presentations (mostly by invitation) and seminars.

Selection of invited presentations at scientific conferences or at academic/private Institutions:

- Society for Neuroscience Annual Meeting, Atlanta, USA, 14-18 October 2006, Invited speaker (press release of the American Society for Neuroscience).

- Astra Zeneca, Molndal, Sweden, 22 November 2006, Seminar by invitation (Guest of Dr. Hans vanGiezen).

- Second Joint Italian-German Purine Club Meeting, Leipzig, Germany, 12-15 September 2007, invited speaker.

- UCB Pharma, Chateau de Limelette, Belgium, 25 October 2007, Seminar by invitation (Guest of Dr. Alain Matagne, head of the CNS Research Management Department).

- Annual meeting of the Hamilton Neurorestorative Group, McMaster University Health Sciences Center, Hamilton, Ontario, Canada, 21 January 2008, Plenary reading by invitation.

- Purines Conference 2008, 29 June - 2 July 2008, Copenhagen, Denmark, invited speaker.

Curriculum vitae

- American Society for Neurochemistry, Charleston, South Carolina, USA, 7-11 March 2009, Invited speaker.
- Seminars on Genome Research, Helmholtz Zentrum München, Neuherberg, Germany, April 23, 2009, Seminar by invitation (Guest of Prof. Magdalena Gotz, Director, Institute of Stem Cell Research).
- Sanofi-Aventis R&D, Paris, France, 2 July 2009, Seminar by invitation (Guest of Dr. Fabrice Viviani, Associate Vice-President of Exploratory and Internal Medicine, Therapeutic Department, Discovery Research).
- Medal Ceremony and Honorary Degree to Prof. Geoffrey Burnstock, University of Ferrara, Italy, 4 June 2009, Plenary Reading by invitation.
- "Fukuoka Purine 2009: International Symposium on Purinergic Signaling in the New Strategy of Drug Discovery", Fukuoka, Japan, 23-25 July 2009, invited speaker.
- "Ligand-gated cationic channels and G protein-coupled receptors in the nervous system", 7-9 October 2009, Leipzig, Germany, invited speaker.
- Center for Integrative Biology (CIBIO), Trento, Italy, 12 May 2010, Seminar by invitation (Guest of Dr. Sheref Mansy, Researcher, and of Dr. Alessandro Quattrone, Director).
- 34th National Congress of the Italian Society of Pharmacology, Rimini, Italy, 14-17 September 2009, Invited speaker.
- National Congress of the Neuropsychopharmacology Society, Cagliari, 22-25, September 2010, invited speaker.
- Purines 2010, Adenine Nucleotides and Nucleosides in Medicine, Tarragona, Spain, 30 May - 2 June 2010, Invited speaker.
- Neuroscience Seminar Series, Max Delbrück Center for Molecular Medicine, Berlin, Germany, 24 June 2011, Seminar by invitation (Guest of Prof. Helmut Kettenmann, Director).
- 4th Joint German-Italian Purine Club Meeting, Bonn, Germany, 22-25 July 2011, invited speaker.
- 10th Euroglia Meeting, Prague, 13-17 September 2011, Invited speaker.
- 23rd Biennial Meeting of the International and the European Society for Neurochemistry, 28 August - 1 September 2011, Athens, Greece, invited speaker.
- UK Purine Club 2011 Symposium, 2 November 2011, Cardiff, UK, Plenary Reading.
- Purine 2012, 30 May - 2 June 2012, Fukuoka, Japan, Plenary Reading by invitation.
- 50th Anniversary of the Hungarian Society for Experimental and Clinical Pharmacology, Sept 19-21, 2012, Budapest, Hungary, Invited speaker.
- Annual Purine Club meeting, 13-14 September 2013, Pisa, Italy, Plenary Reading by invitation.
- International Society for Neurochemistry / American Society for Neurochemistry meeting, 20-24 April 2013, Cancun, Mexico, Invited speaker.
- 36th National Congress of the Italian Society of Pharmacology, Turin, Italy, 23-26 October 2013. Invited speaker.
- AISM Annual Scientific Congress and its Foundation, Rome, Italy, 28-29 May 2014. Invited speaker.
- XVIII National Congress of the Italian Society of Neuropsychopharmacology, Turin, Italy, 3-6 June 2014, invited speaker.
- Purines 2014, Bonn, Germany, 23-27 July 2014, invited speaker.
- II International Congress on Purinergic Signaling in South America and V Meeting of the Brazilian Purine Club, Maresias Beach, Brazil, 30 May - 2 June 2015, Plenary Reading by invitation.
- European Society for Neurochemistry's Conference Molecular Mechanisms of Regulation in the Nervous System, Tartu, Estonia, 14-17 June 2015, Invited speaker.
- 6th Joint German-Italian Purine Club Meeting. International Conference on Purinergic Signaling, Hamburg, Germany, 23-25 July 2015, invited speaker.
- 25th Meeting of the International Society for Neurochemistry, Cairns, Australia, 23-27 August 2015, Plenary Reading by invitation, organizer of a symposium and moderator.
- Paracelsus Medical University, Salzburg, Austria, 29 September 2015, Seminar by invitation (Guest of Prof. Ludwig Aigner, Director, Institute of Molecular Regenerative Medicine).

- 16th Congress of the Italian Society of Neurosciences (SINS), Cagliari, 8-11 October 2015. Invited speaker.
- 37th Congress of the Italian Society of Pharmacology, Naples, Italy, 27-30 October 2015, invited speaker.
- Keystone Symposium on Purinergic Signaling, Vancouver, Canada, 24-29 January 2016, Vancouver, British Columbia, invited speaker and session chairman.
- Evolution brings Ca²⁺ and ATP together to control life and death, 16-17 March 2016, The Royal Society at Chicheley Hall, Buckinghamshire, UK, Invited speaker.
- 1st UK / Italian Purine Club Meeting, 13-14 September 2016, Bristol, UK, Plenary Reading by invitation.
- Royal Academy of Pharmacy, 15 September 2016, Madrid, Spain, Plenary Reading by invitation on the occasion of his appointment "in the name of his majesty Felipe VI" as a Foreign Member of the Academy.
- Virginia Commonwealth University Medical Center, Richmond, VA, USA, 10 November 2016, Seminar by invitation (Guest of Prof. Babette Fuss).

Aggiungere ultimi da cv in ita

Organisational / managerial skills

- 2017: DELEGATE of the Rector at CRUI (Conference of the Rectors of Italian Universities) Rome, for Life Sciences and Health (Working Group n. 5).
- From 2003: INDEPENDENT EXPERT for the European Commission for the evaluation of funding applications for research in the Health area (both remote activities and activities in Commissions in Brussels).
- From 2015-PRESIDENT of the IUPHAR (International Union of Pharmacology) Subcommittee for the classification and nomenclature of P2Y receptors
- From 2016-2018: PRESIDENT of the Filarete Foundation (Milan), the center for knowledge transfer and business incubator of the University of Milan (direct nomination by the Rector).
- From Oct 2014 to Sept 2018: PRESIDENT of the Research Observatory of the University of Milan (direct nomination by the Rector).
- 2006-2012: PRESIDENT ELECT of the Committee for Pharmaceutical and Pharmacological Sciences of the University of Milan and official member of CARSTT, Committee for Scientific Research and Technology Transfer of the University of Milan.
- From 2016: VICE PRESIDENT of Gruppo2003 per la Ricerca, a non-profit association that brings together all the *highly cited* Italian scientists according to Thomson Reuters (less than 0.5% of all publishing scientists), aimed at promoting scientific research in Italy.
- From 2018: INVITED MEMBER of the Scientific Committee of the Cuore Domani Foundation.
- From 2017: INVITED MEMBER of the Scientific Committee of the Italian Multiple Sclerosis Foundation.
- From 2016: MEMBER of the Scientific Committee invited each year to nominate candidates for the Nobel Prize in Physiology or Medicine (direct invitation by the assembly for the Nobel Prize of the Karolinska Institute, Sweden).
- MEMBER of the Board of Directors (CdA).
- INVITED MEMBER of the "100-experienced Platform" for the STEM disciplines (Science, Technology, Engineering and Mathematics), a project promoted by the Pavia Observatory, under the aegis of the European Commission and the National Equality Councilor of the Ministry of Labor and Social Policies Italians, to promote the scientific career of young women.
- MEMBER of the Patent and Spin-off Commission, University of Milan.
- OFFICIAL MEMBER of the University Commission for Scientific Research and Technology Transfer, University of Milan.
- MEMBER, COUNCILOR and SECRETARY of the Founding Committee of the "Purine Club", a non-profit scientific organization that brings together basic scientists and clinicians from 23 countries around the world interested in the pathophysiology of purines and pyrimidines.
- SCIENTIFIC SECRETARY of EPHAR (Federation of European Pharmacological Societies).

Curriculum vitae

- SCIENTIFIC SECRETARY of about 50 international scientific congresses (including, Purines '92 and Purines '96, Milan, Italy, and the First European Congress of Pharmacology, Milan, 1995).
- REFEREE of MIUR for the evaluation of PRIN projects and ANVUR products.
- REFEREE for the Ministry of University Education and Research (MIUR: Projects PRIN, CIVR, FIRB, ANVUR).
- AUDITOR and MEMBER of the Scientific Commission of the Italian Foundation for Multiple Sclerosis (FISM / AISM).
- REFEREE for the National Institutes of Health, USA.
- REFEREE for NATO.
- REFEREE for the Ontario Mental Health Foundation.
- REFEREE for the Canada Research Chairs Program.
- REFEREE for the International Human Frontier Science Program.
- REFEREE for the Biotechnology & Biological Sciences Research Council, UK.
- REFEREE for the Catalan Agency for Health Information, Spain.
- REFEREE for the French National Research Agency, France.

Job-related skills

Author/co-author of about 185 articles in international journals with peer review and Impact Factor, and other documents and monographs (total number of documents according to Web of Science: 231), cited more than 10,000 times.

H index: 63 (InCites, Thomson Reuters, 2015); H index: 52 (Scopus)

Inventor in 12 patent applications, 2 of which already granted.

Principal Investigator in various research grants by national and foreign biotechnology and pharmaceutical companies.

She received funding as Principal Investigator or National Coordinator (CNR, MIUR, Ministry of Health, Ministry of Foreign Affairs, Telethon, Cariplo Foundation, FISM) and other international research agencies.

Fundamental contributions:

o The proposal, together with Prof. G. Burnstock, of the nomenclature currently used for receptors that respond to extracellular nucleotides (Abbracchio MP & Burnstock G: "Purinoreceptors: are there families of P2X and P2Y purinoreceptors?" Pharm Ther. 64: 445-75, 1994).

o One of the first demonstrations that, in CNS neuronal cultures, the purinergic agents induce reactive astrogliosis (Abbracchio et al., Neurosci 59: 67-76, 1994; Brambilla et al., Br J Pharmacol. 126: 563- 7, 1999) and influence the differentiation of astrocytes by synergizing with growth factors (Abbracchio et al., Int J Dev Neurosci 13: 685-93, 1995).

o The first evidence that purines can regulate apoptosis in rat and human astrocytes (Abbracchio et al., Biochem Biophys Res Commun 24: 908-15, 1995; Ceruti et al., Mol Pharm 63: 1437-47, 2003).

o One of the first publications demonstrating that prolonged neuroinflammation inhibits neurogenesis and oligodendroglialogenesis in the damaged CNS (Marchetti and Abbracchio, Trends Pharm Sci, 26, 517-25, 2005).

o The "deorfanzation" of a new P2Y-like purinergic receptor (GPR17) activated by both uracilic and cysteinyl-leukotriene nucleotides and acting as a "damage sensor" in the CNS (Ciana et al., EMBO J. 25: 4615-27 , 2006; Lecca et al., PLoS One 3: e3579, 2008; Scientific American press release: <http://www.sciam.com/article.cfm?id=controlling-cellular-gate&SID=mail>).

o The first demonstration that the GPR17 receptor plays a key role in the specification of oligodendrocyte precursors and myelination (Lecca et al., 2008; Fumagalli et al., J Biol Chem. 286: 10593-604, 2011), in line with the subsequent results obtained by other authors (Chen et al., Nat Neurosci 12: 1398-406, 2009). Based on the studies of the Abbracchio team, in 2012 the National Multiple Sclerosis Society USA proposed GPR17 as a "model receptor" for new remyelinating therapies in neurodegenerative diseases.

Top 10 publications as a "senior" author:

- Marschallinger, J, Schäffner, I, Klein, B, Gelfert, R, Rivera, FJ, Illes, S, Grassner, L, Janssen, M, Rotheneichner, P, Schmuckermair, C, Coras, R, Boccazzi, M, Chishty, M, Lagler, FB, Renic, M, Bauer, HC, Singewald, N, Blümcke, I, Bogdahn, U, Couillard-Despres, S, Lie DC, **Abbracchio MP**, Aigner, L. *Structural and functional rejuvenation of the aged brain by an approved anti-asthmatic drug.* **Nature Commun.** 6:8466, 2015. **I.F.: 11.47**
- Viganò F, Schneider S, Cimino M, Bonfanti E, Gelosa P, Sironi L, **Abbracchio MP**, Dimou L. *GPR17-expressing NG2-Glia: Oligodendrocyte progenitors serving as a reserve pool after injury.* **Glia.** 64(2):287-99. doi: 10.1002/glia.22929, 2016. **IF: 6.03**
- Fumagalli, M, Bonfanti, E, Daniele, S, Lecca, D, Martini, C, Trincavelli ML, **Abbracchio, M.P.** *The ubiquitin ligase Mdm2 controls oligodendrocyte maturation by intertwining mTOR with G protein-coupled receptor kinase 2 in the regulation of GPR17 receptor desensitization.* **Glia,** 63(12):2327-39, 2015. **IF: 6.03**
- Zaratin, P., Battaglia, M. A., **Abbracchio, M. P.** *Nonprofit foundations spur translational research.* **Trends Pharmacol. Sci.** 35, 552–5, 2014. **I.F.: 11.54**
- Ceruti S, Villa G, Fumagalli M, Colombo L, Magni G, Zanardelli M, Fabbretti E, Verderio C, van den Maagdenberg AM, Nistri A, **Abbracchio MP.** *Calcitonin gene-related peptide-mediated enhancement of purinergic neuron/glia communication by the algogenic factor bradykinin in mouse trigeminal ganglia from wild-type and R192Q Cav2.1 Knock-in mice: implications for basic mechanisms of migraine pain.* **J Neurosci.** 31: 3638-49, 2011. **IF: 7.27**
- Fumagalli M, Daniele S, Lecca D, Lee PR, Parravicini C, Fields RD, Rosa P, Antonucci F, Verderio C, Trincavelli ML, Bramanti P, Martini C, **Abbracchio MP.** *Phenotypic changes, signaling pathway, and functional correlates of GPR17-expressing neural precursor cells during oligodendrocyte differentiation.* **J Biol Chem.** 286: 10593-604, 2011. **IF: 5.33**
- Ceruti S, Villa G, Genovese T, Mazzon E, Longhi R, Rosa P, Bramanti P, Cuzzocrea S, **Abbracchio MP.** *The P2Y-like receptor GPR17 as a sensor of damage and a new potential target in spinal cord injury.* **Brain.** 132: 2206-18, 2009. **IF: 10.0**
- Di Virgilio F, Ceruti S, Bramanti P, **Abbracchio MP.** *Purinergic signalling in inflammation of the central nervous system.* **Trends Neurosci.** 32: 79-87, 2009. **IF: 12.79**
- **Abbracchio MP**, Burnstock G, Boeynaems JM, Bamard EA, Boyer JL, Kennedy C, Knight GE, Fumagalli M, Gachet C, Jacobson KA, Weisman GA. *International Union of Pharmacology LVIII: update on the P2Y G protein-coupled nucleotide receptors: from molecular mechanisms and pathophysiology to therapy.* **Pharmacol Rev.** 5: 281-341, 2006. **IF: 16.85**
- Ciana P, Fumagalli M, Trincavelli ML, Verderio C, Rosa P, Lecca D, Ferrario S, Parravicini C, Capra V, Gelosa P, Guerrini U, Belcredito S, Cimino M, Sironi L, Tremoli E, Rovati GE, Martini C, **Abbracchio MP.** *The orphan receptor GPR17 identified as a new dual uracil nucleotides/cysteinyl-leukotrienes receptor.* **EMBO J.** 25: 4615-27, 2006. **IF: 10.09**

Selected list of funding received to support its research through competitive calls:

- 2014-2016; renewed project for the period 2018-2021: Innovative re-myelinating strategies for multiple sclerosis via the exploitation of the new oligodendrocyte receptor GPR17. Italian Multiple Sclerosis Foundation (FISM), Principal Researcher (PI)
- 2013-2016. "Restoring function in stroke via GPR17, a new receptor involved in adult brain self-repair (RENEW IT)". European Commission, ERANET-Neuron, network consisting of 4 international partners. Role: Co-PI with Prof. Elena Tremoli
- 2011-2013. New molecular basis for migraine: role of the purinergic system and of pain mediators in the cross-talk between sensory neurons and neuro-inflammatory cells in trigeminal ganglia. Cariplo Foundation, PI and Coordinator of 2 Units.
- 2011-2013. Innovative re-myelinating strategies for multiple sclerosis via the exploitation of the new oligodendrocyte receptor GPR17. Italian Multiple Sclerosis Foundation (FISM), PI.
- 2011-2013. Implementing brain repair in stroke via the exploitation of adult neurogenesis and gliogenesis: focus on the cross-talk between microglial and endogenous neural precursor cells. Italian Ministry of Health, PI.
- 2010-2012. Studies of familial hemiplegic migraine transgenic mouse models and patients to investigate the crosstalk between sensory neurons and neuroinflammatory cells in

Curriculum vitae

trigeminal ganglia in relation to migraine pain. Telethon Foundation, PI.

- 2008-2011. Purinoceptors and neuroprotection: focus on the new purinergic receptor GPR17. Italian Ministry of University and Research (MIUR) N. 2008XFMEA3, PI and Coordinator of 5 units.

- 2008-2010. "Implementation of endogenous neurogenesis and gliogenesis via the purinergic system: a new strategy to repair acute neurodegenerative disease". Italian Ministry of Health, PI.

ADDITIONAL INFORMATION

Honours and awards

- January 2017, winner of the international award "**LE TECNOVISIONARIE**" for Scientific and Technological Research, granted by the Women and Technologies Association. Reason for the Award: "the award is given to women who stand out for their professional commitment, favoring the social impact, transparency in behavior and ethics, women who contribute to inventing the future" (<http://www.unimi.it/lastatalenews/maria-pia-abbraccio-tecnovisionaria-2017-per-ricerca-scientifica>).

- September 2016, named, "in the name of His Majesty Felipe VI", **FOREIGN MEMBER OF THE ROYAL ACADEMY OF PHARMACY OF SPAIN**.

- March 2016, appointed **MEMBER OF EUROPEAN ACADEMY**.

- February 2014, appointed by the President Giorgio Napolitano **COMMANDER OF THE ORDER TO MERIT OF THE ITALIAN REPUBLIC** motu proprio, the highest honorary order of the Republic, for its scientific merits.

- 2006, nominated by ISI Web of Science / Thomson Reuters, as a **HIGHLY CITED SCIENTIST** (highly cited scientist) in Pharmacology and Toxicology, an international classification that selects the most influential scientists in all fields of research (less than 0.5 percent of all researchers).

- 1988, winner of the **ALDO CESTARI AWARD FOR RESEARCH IN PHARMACOLOGICAL SCIENCES** granted by the Italian Pharmacology Society as the best curriculum of the year among young pharmacologists.

Aware of the penal responsibilities in the case of false declarations, I declare that the contents of this curriculum correspond to the truth. I authorize the processing of my personal data pursuant to Legislative Decree 30 June 2003, n. 196 "Code regarding the protection of personal data" and the GDPR EU No. 679/16.

