



## **ALESSANDRO PRINETTI**

### *Personal details:*

Born November 6th, 1965 in Milano, Italy. Italian citizen. Married, one child.

### *Present address:*

Department of Medical Biotechnology and Translational Medicine

LITA-Segrate, via Fratelli Cervi, 93, 20090 Segrate (Milano)

Phone: +39-02-50330376/380 ; Fax: +39-02-50330365

[alessandro.prinetti@unimi.it](mailto:alessandro.prinetti@unimi.it)

<http://orcid.org/0000-0003-0252-2593>

### *Education:*

- M.Sc. in Pharmaceutical Chemistry with Honors (1992).
- Ph. D. in Biochemistry (1997).

### *Professional employment:*

- Research Doctorate Fellow, Department of Medical Chemistry, Biochemistry and Biotechnology, School of Medicine, University of Milan, Milan, Italy (1992-1997).
- Senior Fellow, Department of Pathobiology, School of Public Health and Community Medicine, University of Washington, Seattle, USA (May 16<sup>th</sup>, 1997 to October 31<sup>st</sup>, 1998).
- Research Scientist, Department of Medical Chemistry, Biochemistry and Biotechnology, School of Medicine, University of Milan, Milan, Italy (1999-2002).
- Associate Professor of Biochemistry, Department of Medical Chemistry, Biochemistry and Biotechnology, School of Medicine, University of Milan, Milan, Italy (2002-2008).
- Full Professor of Biochemistry, Department of Medical Chemistry, Biochemistry and Biotechnology, School of Medicine, University of Milan, Milan, Italy (2008-).
- Full Professor of Biochemistry, Department of Medical Biotechnology and Translational Medicine, School of Medicine, University of Milan, Milan, Italy (2012-).

### *Awards*

- Italian Society of Biochemistry “Medaglia SIB” Award for Young Scientists (1994).
- Association for the Advancement of Neurological Research (ARIN) (1997).
- Mizutani Foundation for Glycoscience (2007)

### *Editorial and reviewing activity*

- Referee for the following scientific Journals: Journal of Neurochemistry, FEBS Letters, Journal of Pharmacology and Experimental Therapeutics, Biochemical Pharmacology, Biochimica et Biophysica Acta, Journal of Biochemistry, Neuroscience Letters, Cancer Letters, Medicinal Research Reviews, Brain Research Bulletin, Molecular Neurobiology, Journal of Cellular Biochemistry, Acta Biochimica et Biophysica Sinica, European Journal of Cancer, Medical Oncology, BMC Cell Biology, Journal of Glycomics and Lipidomics, Glycobiology, Biochemistry and Cell Biology, Current Medicinal Chemistry, Archivum Immunologiae et Therapiae Experimentalis, Analytical Biochemistry, Glycoconjugate Journal, PLOS ONE, Neurobiology of Aging, Physical Biology, Mediators of Inflammation, Nature Communications.
- Handling Editor of the Journal of Neurochemistry, Managing Editor of Neurosignals, member of the Editorial Board of Journal of Lipids, member of the Editorial Board of Matters, Associate Editor of Frontiers in Membrane Physiology and Biophysics, Neurochemical Research, the Glycoconjugate Journal, Review Editor in Frontiers in Molecular Neuroscience.
- Guest Editor for the Special Issues:
  - “Basic methodological approaches for studying glycoconjugates”, Glycoconjugate Journal, 2008
  - “Membrane microdomains/lipid rafts”, Trends in Glycoscience and Glycotechnology, 2008
  - “Membrane domains in CNS Physiology and Pathology”, Journal of Neurochemistry, 2011
  - “Membrane alterations and Alzheimer's disease”, Frontiers in Membrane Physiology and Membrane Biophysics, 2013

- Referee for grant proposal to the Dutch Cancer Society (Nederlandse Kankerbestrijding), the United States-Israel Binational Science Foundation, the Italian Ministry of Scientific Research, Italy/France scientific cooperation programme (Galileo), Deutsche Forschungsgemeinschaft, German-Israeli Foundation for Scientific Research and Development, Israel Science Foundation, FCT – Fundação para a Ciência e a Tecnologia (Portugal)
- Member of the Advisory Board of the Department of Biomedical and Biotechnological Sciences (Biometec), University of Catania.

*Activity within scientific societies and organization of meetings*

- Member of the Italian Society of Biochemistry (1994-), the European Society for Autoradiography (1999-), the International Society for Neurochemistry (2003-), the European Society for Neurochemistry (2003-), the Italian Society for Neuroscience (2005-), the Asian-Pacific Society for Neurochemistry
- Coordinator of the Glycobiology Group of the Italian Society of Biochemistry and Molecular Biology (2008 -2014).
- Council Member (2009-2015) and Secretary (2011-2015) of the European Society for Neurochemistry (ESN)
- President (2015-2017) of the European Society for Neurochemistry (ESN)
- Council Member (2011-2015 and 2017-2021) of the International Society for Neurochemistry (ISN)
- Chair of the ISN Conference Committee (2013-2015)
- Member of the ISN CAEN (2013-2015)
- Chairman of the International Meeting “Glycobiology of Lipid Membrane Domains: from Membrane Organization to Biological Function”, Monte Oliveto Maggiore (Siena), Italy (Satellite Meeting of the XVIII International Symposium on Glycoconjugates”) (2005).
- Chairman of the 4<sup>th</sup> ISN Special Neurochemistry Conference “Membrane Domains in CNS physiology and pathology” Erice, Italy (2010)
- Director of the ISN School “Lipidomics in the nervous system cells”, Acitrezza, Italy, (2010).
- Member of the Program Committee of the 5<sup>th</sup> and 6<sup>th</sup> Int. Charleston Ceramide Conference (2009, 2011)
- Member of the Scientific Committee of the 55<sup>th</sup> National Meeting of the Italian Society of Biochemistry and Molecular Biology (2010)
- Member of the International Scientific Advisory Committee of the 5<sup>th</sup> ISN Special Neurochemistry Conference “Synapses and dendritic spines in health and disease” (2012)
- Member of the International Programme Committee of the 5<sup>th</sup> ESN Conference on advances in molecular mechanisms underlying neurological disorders, Joint Conference of the European Society for Neurochemistry and the Biochemical Society, Bath, UK (2013)
- Member of the Local Organizing Committee of the ESN Conference "Molecular Mechanisms of Regulation in the Nervous System" Tartu, Estonia (2015)
- Member of the International Organizing Committee of "Nutraceuticals in Neurodegenerative diseases and Aging", Satellite Meeting of the 25<sup>th</sup> Meeting of the International Society for Neurochemistry, Singapore (2015)
- Member of the Programme Committee of the ISN/ESN joint meeting (Paris, France, 2017)
- Chair of the ISN Committee for Aid and Education in Neurochemistry (CAEN) (2017-)
- Member of the Programme Committee for the 23<sup>rd</sup> ESN Biennial Meeting - 7<sup>th</sup> Conference on Molecular Mechanisms of Regulation in the Nervous System (Milan, Italy, 2019).
- Session Chair at the 2018 “Glycolipid and sphingolipid biology” GRC, Galveston, Texas
- Chair of the ISN CAEN (2017-)
- Member of the ISN Conference Committee (2017-)
- Co-chair of the 25<sup>th</sup> International Symposium on Glycoconjugates (Milano, Italy, 2019)
- Member of the Programme Committee of the 23<sup>rd</sup> ESN Biennial Meeting - 7<sup>th</sup> Conference on Molecular Mechanisms of Regulation in the Nervous System (Milano, Italy, 2019)

*Scientific activity*

AP was involved in research activities within the field of sphingolipid biochemistry and cell biology since 1984. His scientific personality was shaped in two of the leading laboratories worldwide in this research area: the laboratory of Sphingolipid Biochemistry at the Dept. of Medical Chemistry, Biochemistry and Biotechnology, University of Milano, under the guidance of G. Tettamanti and S. Sonnino, and the laboratory of S. Hakomori at the Dept. of Pathobiology /Pacific Northwest Research Institute, University of Washington (Seattle, WA, USA).

In the early years of his scientific activity, he contributed to elucidate glycosphingolipid metabolic pathways in the nervous system, and in particular to define the metabolic mechanisms responsible for the generation of bioactive sphingolipids. More recently, he developed his independent research lines, contributing to define the concept of lipid rafts. In particular, his research highlighted the importance of sphingolipids in modulating the generation of signals at the plasma membrane by either determining the dynamic properties of specialized membrane signaling platforms, or affecting the activity of plasma membrane signaling complexes via specific sphingolipid-protein interactions. His achievements shed a new light on the role of sphingolipids in the physiopathology of nervous system and in tumor cell biology. In particular, AP studied sphingolipid patterns, metabolism and function related to neuronal differentiation and neurodegeneration, myelin formation and repair, neoplastic transformation, tumor cell adhesion and invasiveness.

His research activity encompasses active and productive collaborations with several national and international research groups.

His scientific activity is documented by 105 papers in peer-reviewed journals (3907 citations, *h*-index: 33), 6 book chapters, and more than 100 communications to scientific meetings.

Invited Speaker in the following international scientific meetings:

2002 "Sphingolipid turnover and exchange with the extracellular environment" Gordon Research Conference "Glycolipid and Sphingolipid Biology", Ventura, CA, USA

2003 "Dynamics of membrane lipid domains in neuronal cultures" 2<sup>nd</sup> Int. Charleston Ceramide Conference, Como, Italy

2004 "Sphingolipid-enriched membrane domains in neuronal apoptosis" Gordon Research Conference "Glycolipid and Sphingolipid Biology", Hyogo, Japan

2005 "Functional roles of sphingolipids in the resistance to antitumor drugs in human ovarian carcinoma cells" 7<sup>th</sup> Int. Symposium on Biochemical Roles of Eukaryotic Cell Surface Macromolecules, Puri, India

2005 "Sphingolipid-enriched membrane domains in neuronal apoptosis" 3<sup>rd</sup> Intl. Charleston Ceramide Conference, Charleston, SC, USA

2005 "non-MDR drug-resistant phenotypes in ovarian carcinoma cells are defined by alterations of the lipid membrane domains organization" XVIII Int. Symposium on Glycoconjugates, Firenze, Italy

2006 "Altered glycosphingolipid metabolism and membrane organization in fenretinide-resistant human ovarian carcinoma cells" IUBMB Int. Symposium on Glycobiology "Glycans on proteins and lipids: Implications in cellular functions and evolution", Bangalore, India

2006 "Aberrant glycosphingolipid expression in tumors and its consequences on cell-cell and cell-matrix interactions" IUBMB Workshop "Molecular characterization of glycoproteins and glycolipids and their interactions with lectins and receptors", Bangalore, India

2006 "Organization and functional role of a prion-protein enriched membrane microenvironment in primary rat cerebellar neurons." 2<sup>nd</sup> Special Meeting of the Int. Society for Neurochemistry on Neural Glycoproteins and Glycolipids, Antigua

2007 "Altered sphingolipid metabolism and membrane organization are associated with reduced invasivity in HPR-resistant human ovarian carcinoma cells." Glycobiology and Sphingobiology 2007 Hakomori Commemorative Forum, Tokushima, Japan

2007 "Aberrant glycosphingolipid expression and membrane organization in tumor cells: consequences on tumor-host interactions" Molecular Immunology of Complex Carbohydrates-3, Taipei, Taiwan

2008 "GM3 synthase regulate caveolin-1 expression and cell motility in human ovarian carcinoma cells" 8<sup>th</sup> Int. Symposium on Biochemical Roles of Eukaryotic Cell Surface Macromolecules, Hyderabad, India

2008 "Non-caveolar caveolin-1-enriched sphingolipid microdomains in the control of tumor cell motility" Gordon Research Conference "Glycolipid and Sphingolipid Biology", Il Ciocco, Italia.

2009 "Deregulated sphingolipid metabolism in neurodegenerative disorders: lessons from acidic sphingomyelinase knockout mice, an animal model for Niemann-Pick disease type A." 22<sup>nd</sup> Biennial

Meeting of the ISN/APSN Joint Meeting Satellite Conference “Novel Strategies for Intervention in Neurodegenerative Diseases”, Taipei, Taiwan.

2009 “Glycosphingolipids as modulators of membrane signaling complexes” FEBS Advanced Course “Lipid Signaling and Disease”, Ortona, Italy.

2009 “The motility of ovarian carcinoma cells is regulated through a glycosphingolipid/caveolin-1 signaling complex”. 20<sup>th</sup> International Symposium on Glycoconjugates, San Juan, PR, USA.

2010 “Multiple contributions of sphingolipid metabolism to drug resistant phenotypes in human ovarian cancer cells: crossroads, one-ways and evacuation routes.” Gordon Research Conference “Glycolipid and Sphingolipid Biology”, Ventura, CA, USA

2011 “A glycosphingolipid/caveolin-1 signaling complex inhibits the motility of human ovarian carcinoma cells” 9<sup>th</sup> International Symposium on Biochemical Roles of Eukaryotic Cell Surface Macromolecules, Trivandrum, India

2011 “A glycosphingolipid/caveolin-1 signaling complex inhibits the motility of human ovarian carcinoma cells” 21<sup>st</sup> International Symposium on Glycoconjugates, Vienna, Austria

2012 “Regulation of caveolin-dependent signaling complexes by gangliosides” Gordon Research Conference “Glycolipid and Sphingolipid Biology”, Il Ciocco, Italia.

2012 “Role of sialyltransferase-1 (GM3 synthase) in the regulation of a caveolin-1-dependent signaling complex controlling the adhesion and motility of human ovarian cancer cells.” Sialoglyco 2012, Taipei, Taiwan

2013 "Lipid Rafts in Neurodegeneration and Neuroprotection" ISN-ASN Satellite Symposium "Unveiling the significance of lipid signaling in neurodegeneration and neuroprotection" Cancun, Mexico

2013 "Lipid Rafts in Neurodegeneration and Neuroprotection" ISN Symposium "Neurochemistry in the 21st Century", Bath, UK

2014 "Lipids and lateral order in biological membranes" EMBO Workshop: Cellular Imaging of lipids, Vico Equense, Italy

2014 "Sphingolipids and lateral order in biological membranes" 2nd International Workshop on Molecular Medicine of Sphingolipids, Kloster Banz, Germany

2015 "Lipid rafts and their roles in neurodegeneration and neuroprotection" 12th International Congress of the Polish Neuroscience Society, Danzig, Poland

2015 "Ganglioside-dependent membrane organization controlling the adhesion and motility of human ovarian cancer cells" 23rd International Symposium on Glycoconjugates, Split, Croatia

2015 "Lipid rafts in neurodegeneration and neuroprotection" invited seminar at Centre for Neuroregeneration, University of Edinburgh Medical School, Edinburgh, UK

2016 "Sulfatide in myelin organization and anti-sulfatide antibodies in pathology" Molecular Immunology of Complex Carbohydrates-4, The Great Roots Resort, SanXia District, New Taipei City, Taiwan

2016 "Lipid membrane domains in the brain" 14th Meeting of the Asian-Pacific Society for Neurochemistry, Kuala Lumpur, Malaysia

2017 "Anti-Glycolipid natural IgM antibodies as potential therapeutics in demyelinating diseases" 3rd International Conference on Molecular Medicine of Sphingolipids, French Lick, IN, USA

2017 "Anti-Glycolipid natural IgM antibodies as potential therapeutics in demyelinating diseases" 1st MetQuant Neurochemistry Symposium, Bremen, Germany

2017 “Lipid-driven membrane organization and signaling in myelin repair” 24<sup>th</sup> International Symposium on Glycoconjugates, Jeju, South Korea

2017 “Lipid-driven membrane organization and signaling in myelin repair” 24<sup>th</sup> International Symposium on Glycoconjugates, 1st International conference on "The Glycobiology of Nervous System", Seoul, South Korea

2017 “A random walk in Neuroscience”, seminar at the Medizinische Universität Innsbruck, Innsbruck, Austria

2018 “Biochemical approaches for the study of organization and biological functions of lipid rafts”, Keunote Speaker, XV Conference of the Lithuanian Biochemical Society, Dubingiai, Lithuania