Anna Maria Colangelo – Curriculum Vitae

Associate Prof of Biochemistry, Dept of Biotechnology and Biosciences, School of Science, University of Milano-Bicocca, Milano, ITALY, annamaria.colangelo@unimib.it
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Education

Specialty degree in Pharmacology, School of Medicine, University of Milano (2009)
Board exam for Professional Qualification as Biologist (1988)
Degree in Biology, School of Science, University of Bari (1987)

Academic Positions and Employments

2022-Present Associate Professor of Biochemistry, Dept. of Biotechnology & Biosciences, School of Science, University of Milano-Bicocca, Milano, Italy.

2006-2022: Assistant Prof of Biochemistry, Dept. of Biotechnology & Biosciences, School of Science, University of Milano-Bicocca, Milano, Italy.

2000-Present: Head of Laboratory of Neuroscience "Rita Levi-Montalcini", Dept. of Biotechnology & Biosciences, University of Milano-Bicocca, Milano, Italy.

1998-1999: Assistant Prof of Neurobiology, Dept. of Cell Biology, Division of Neurobiology, Georgetown University Medical School, Washington DC, USA.

1996-1998: Senior Staff Fellow, Dept. of Cell Biology, Division of Neurobiology, Georgetown University Medical School, Washington DC, USA.

1996-1997: Visiting Research Scientist, Eukaryotic Transcriptional Regulation Group, National Cancer Institute-Frederick Cancer Research and Development Center, Frederick MD, USA.

1991-1995: Postdoctoral Fellow, Dept. of Cell Biology, Division of Neurobiology, Georgetown University School of Medicine, Washington DC, USA.

1989-1991: Research Fellow, Lab. of Cellular Neuropharmacology, Natl. Neurologic Institute "C. Besta", Milano, Italy.

1988-1989: Research Fellow, Institute of Medical Microbiology and Immunology of Policlinico Bari, University of Bari, Bari.

1987-1988: Research Fellow, Dept. of Biochemistry & Molecular Biology, Division of Neurochemistry, University of Bari, Bari, Italy.

Academic Honors, Awards, Achievements

Certification of positive evaluation for participation to Committees for the selection of academic personnel and evaluation of research projects (2020 to Present) (ai sensi dell'art. 6, comma 7, della Legge 240/2010).

VQR 2015-2019 – Selected products: 4/4 of the 6 selected publications

ASN 2016 – National habilitation to Associate Professor in Biochemistry - SC 05/E1 Biochimica generale - II Fascia (24/09/2018 al 24/09/2024) (ASN2018 and ASN 2021-23 simulations: positive for Full Professorship)

VQR 2011-2014 – Selected products: 2/2, both with grade "high" (0,7)

VQR 2004-2010 – Selected products: 2/2 with grade "excellent" and "good" (1 e 0,8)

Interdepartmental Research Days, Georgetown University Medical Center, Research Awards, Finalist (1° or 2° positions) in 1993, 1994 and 1996.

Academic duties/assignments and Professional Membership/Affiliations

Disciplinary Board of the University Milano-Bicocca, Component of the Third Section (Rectoral decree 0076106/21 of 22-06-2021)

Board for Animal Health and Welfare (OPBA) of the University Milano-Bicocca, Component of the scientific committee (since 2017)

Milan Center for Neuroscience NeuroMI – Member of the Scientific Board (since 2014), and Coordinator of the Molecular and Cellular Neuroscience area (since 2020) https://neuromi.it/research-area/molecular-and-cellular-neuroscience/

Friends of Anatomy, participant since 2020

Inter-University Center for the Promotion of the 3Rs Principles in Teaching & Research (member)

Centro Interdipartimentale per gli Studi di Genere ABCD (member)

Nanobiotechnologies for Health Center (NanoMiB) (member)

SYSBIO/ISBE.IT, scientific member and P.I. of the research Unit NEUDE (since 2012) http://www.sysbio.it/who-we-are/people/http://www.sysbio.it/who-we-are/people/

Associazione Levi-Montalcini, component of the Scientific Committee

Society for Neuroscience - USA (member since 1996)

Ordine Nazionale dei Biologi (member since 1988)

Teaching activities

AA 2012/13 – Present: Neurobiochemistry (6 cfu), Master degree in Industrial Biotechnologies, Faculty of Science, University of Milano-Bicocca

AA 2002/03 – Present: LTA-Biochemistry (laboratories, 3 cfu), Bachelor degree in Biotechnologies, Faculty of Science, University of Milano-Bicocca

AA2022/23 – Present: LIB-Laboratori Integrati di Biochimica (2 cfu/anno), Bachelor degree in Biology, Faculty of Science, University of Milano-Bicocca

AA 2010/11: Biochemistry of Higher Eucaryotes (1 cfu - 8 hr), Bachelor degree in Biotechnologies, Faculty of Science, University of Milano-Bicocca

2001/2002: LTA-Biomolecular (laboratories, 3 cfu), Bachelor degree in Biotechnologies.

Other Teaching activities

AA2013/14 – Present Member of the Committee for the PhD Program in Neuroscience (since cycle XXIX), School of Medicine, University of Milano-Bicocca

2017/18 – Present: PhD Program in Neuroscience. Teaching of the course “Glial cells in health and disease”

AA2006/07 – AA2012/13: Member of the Committee, PhD Program in Industrial Biotechnologies (cycles from XXIII to XXVIII), School of Science, University of Milano-Bicocca

AA2016/17 – Participation to the ERASMUS week, BTBS-UNIMIB (24-10-2016). Seminar “Primary astrocytes and neurons as in-vitro models of neurodegeneration”

AA2011/12 – Participation to the ERASMUS week, BTBS-UNIMIB (from 17-10-2011 to 20-10-2011). Seminar “Neurodegenerative diseases: old and new targets for neuroprotection”.

2001 – Present: Tutor/Supervisor of: internships for Bachelor degrees in Biotechnologies, Biology and Erasmus program (115); Thesis for Bachelor degrees (93); Thesis for Master degrees in Industrial Biotechnologies, Medical Biotechnologies and Biology (35); PhD in Industrial Biotechnologies School of Science (2); PhD in DIMET School of Medicine (2); PhD in Neuroscience School of Medicine (1). 2002 – Present: Member of Committees of thesis defence for Bachelor and Master Degrees in Biotechnology, Industrial Biotechnology, Medical Biotechnology, Biology and PhD programs (DIMET, AA2015/16, ciclo XXIX).

AA2006/07 – Present: Component of Committees for placement test to Bachelor and Master Schools in Biotechnology/Biology and Industrial Biotechnology, and PhD program in Neuroscience.

2006 – Present: Member of Scientific Committees in public competitions for research fellowships and other appointments at University Milano-Bicocca and CNR.

1991 – Present Training of Postdoc/early career Researchers (25) (current positions of some):
Alissa Costantini (Roche, Lugano, Svizzera)
Paolo Umberto Agliati (Master of Science in Brain and Cognitive Sciences, Univ. of Amsterdam)
Federica Aprea (Helvetic Biopharma, Svizzera)
Matteo Formenti (Research Assistant presso de Duve Institute, Belgium)
Pierpaolo Moscariello (PhD, Universitätsmedizin Mainz, Mainz, Germany)
Valentina Galimberti (Lab. of Immunology, Dept Medicine, Univ. California at San Diego, La Jolla).
Valentina Vajani (Quality Assurance Manager - presso Dipharma SA, Lugano)
Michela Consonni (Exp. Immunology Unit, IRCCS San Raffaele Scientific Institute, Milano)
Martina Fragni (Università degli Studi di Brescia, Brescia, Italy)
Emanuela Colombo (Researcher at San Raffaele)
Daniele Colombo (R&D Portfolio Manager & Medical Excellence Lead presso Zambon)
Marco Cassano (Dept of Biosciences, University of Milano)

Current Research Interests

2000-Present

Oxidative stress and neuroinflammation are key players in neurodegenerative disorders. We are currently investigating the crosstalk between oxidative stress and neuroinflammation in mice models of Parkinson disease. In particular, we are focusing on alterations of mitochondria and metabolism in neurons and astrocytes exposed to PD neurotoxins (6-OHDA or rotenone) and the relevance of reactive gliosis in determining neuronal dysfunction and alteration of neuroglial network homeostasis in PD.

Systems Biology approaches for the study of complex molecular processes

We are using computational studies to identify genes and pathways underlying neurodegenerative processes in Alzheimer's (AD) and Parkinson's (PD) diseases. Moreover, we are integrating our wet experimental studies with in-silico modeling of mitochondrial pathways to construct a dynamic model of mitochondria-ROS management that will help to identify new therapeutic targets for PD and other pathological conditions that involve oxidative stress and mitochondrial dysfunction, and their prospective use in Precision Medicine.

Neurotrophic and neuroprotective activity of Nerve Growth Factor (NGF) and dietary antioxidant molecules. We are investigating mechanism of NGF activity in differentiation and neuroprotection, which seem to involve modulation of mitochondrial functions and cellular bioenergetics.

Development of NGF molecules (both rhNGF and NGF-like molecules) for clinical applications in neurodegenerative and neuroinflammatory disorders. In addition to the production of rhNGF and the NGF-like molecule BB14, these studies identified a novel anti-gliosis activity of NGF and BB14 in modulating reactive gliosis and synaptic homeostasis. Further studies are in progress for deep molecular and functional characterization of these molecules.

Previous research activities

1991-99 – Role of neurotrophic factors in brain function and regeneration, in particular of Nerve Growth Factor (NGF) and its therapeutic potential in AD. Studies have contributed to current knowledge of NGF activity in neuronal survival/differentiation, and the transcriptional mechanisms underlying spatio-temporal and cell-specific pharmacological regulation of endogenous NGF expression in the brain. Part of these studies have been developed during a 1-year Sabbatical leave (1996-1997) at the Eukaryotic Transcriptional Regulation Group, National Cancer Institute-Frederick Cancer Research and Development Center, Frederick MD, USA.

1989-91 – Mechanisms of neurodegeneration in dopaminergic neurons. Biochemical/functional alterations in patients with Cluster headache or Amyotrophic Multiple Sclerosis.
1987-89 – Autoimmune aspects of Multiple Sclerosis.

Awarded Grants

2017-2019 CORBEL (H2020) - Coordinated Research Infrastructures Building Enduring Life-science Services – PID2354 "Modelling ROS management and mitochondrial dysfunction in models of Parkinson disease". (Principal Investigator)

2013-2017 MIUR – National Technological Cluster Life Science ALISEI – CTN01_00177_165430 IVASCOMAR "Identification, validation and commercial development of novel diagnostic and prognostic biomarkers for complex diseases". National coordinator: Dompè SpA; UNIMIB coordinator: Prof C Ferrarese (Colangelo: P.I. Head of the Research Unit UNIMIB-BTBS).

2008 – Present: ATE – Fondo di Ateneo

2001 – Present: Fellowships from "Associazione Levi-Montalcini" for young/early career postdoc for the Laboratory of Neuroscience "Rita Levi-Montalcini".

FFABR 2017 MIUR – FFABBR_NAT Fondo per il finanziamento delle attività base di ricerca.

2013-2022 MIUR – SYSBIONET - Italian Roadmap of European Strategy Forum on Research Infrastructures (ESFRI), Natl Coord: Prof L Alberghina. (Colangelo: P.I., Head di Research Unit UR-NEUDE "Systems Biology (experimental and computational) of neuroprotection in models of neurodegeneration").

2011-2013 FINLOMBARDA SPA, REGIONE LOMBARDIA, Fund for Institutional Agreements for R&S Programs – Network Enabled Drug Design (NEDD) Dir.: Prof F. Nicotra; (Colangelo, Participant).

2010-2013 Italian Foundation for Multiple Sclerosis FISM-2010 "The molecular basis for nutritional intervention in multiple sclerosis"", (P.I. Prof P. Riccio; Colangelo, Participant).

2007-2013 MIUR FIRB – ITALBIONET "Research Infrastructure for Systems Biology at the University of Milano Bicocca, hub of Italian network" (Coord. Prof L Alberghina; Colangelo, Participant).

2011-2012 Applied Research Project co-funded by Regione Lombardia. "Molecular and functional characterization of the NGF-like molecule (BB14) for potential therapeutic applications in neurodegenerative and inflammatory diseases" (Principal Investigator).

2007-2009 PRIN 2007 – Prot. 2007AF3XH4_004 "Development of Nerve Growth Factor (NGF) as a drug for the treatment of ocular diseases and pathologies of the central nervous system". (Principal Investigator, Head of Research Unit UNIMIB "A scale-up process for production of recombinant human Nerve Growth Factor (rhNGF) in mammalian cells, its purification and molecular characterization. In vitro analysis of the rhNGF biological activity in cellular systems.").

2006-2007 INGENIO-Regione Lombardia. "Systems Biology of neuronal apoptosis". Head of the Research Unit).

International and National collaborations

Prof Hans Westerhoff, University of Amsterdam, ISBE-Light - Infrastructure for Systems Biology Europe

Dr. Alexey Kolodkin, University of Luxemburg

Prof. Michele Papa, Laboratory of Morphology of Neuronal Networks, University of Campania "L Vanvitelli", Napoli

Prof Carlo Ferrarese, School of Medicine and Surgery, University of Milano-Bicocca

Prof Rosa Maria Moresco, PET and Nuclear Medicine Unit, San Raffaele Scientific Institute, Milano

Dr. Paola Bertolazzi (Istituto di Analisi dei Sistemi ed Informatica A. Ruberti, CNR, Roma)

Dr. Daniela Gaglio, Metabolomics Infrastructure ISBE-IT SYSBIO, and Institute of Molecular Bioimaging and Physiology (IBFM-CNR)

Prof. Lilia Alberghina, SYSBIO/ISBE.IT Infrastructure for Systems Biology Europe
Prof. De Gioia, Vanoni, Grandori, Granucci, Labra (UNIMIB)
Dr. Stefano Morara, Institute of Neuroscience/C.N.R. - Milano Unit
Prof. Paolo Riccio (University of Basilicata, Potenza)
Dr. P Sarmientos, PRIMM srl, Milano;
Prof G Morelli, Univ.i Napoli "Federico II (peptidi NGF-like)
Dr Luigi Aloe (Istituto di Biologia Cellulare e Neurobiologia, CNR), Dr A Lambiase (Università "Campus Bio-Medico" ROMA), and Prof. Alessandro Vercelli (Università di Torino) for PRIN2007
Prof. Rita Levi-Montalcini, EBRI, Roma)

Editorial/Reviewer activity

Reviewer of research projects for the Ministry of University and Research (MIUR – FIRB 2013; MIUR Programma Giovani Ricercatori "Rita Levi Montalcini" 2017) and CARIPLO Foundation (2021).
Scientific expert of MIUR REPRISE, Basic Research.
Guest Editor for the MPDI journal "Antioxidants" - section: Health Outcomes of Antioxidants and Oxidative Stress, Special Issue "Oxidative Stress and Neuroinflammation in Neurological and Neurodegenerative Disorders
Review Editor for Frontiers in Aging Neuroscience (since March 2014)
Reviewer *ad hoc* for the following International journals peer-review: Scientific Reports (Nature publishing), Frontiers Cellular Neuroscience, Frontiers Molecular Neuroscience, Frontiers Behavioral Neuroscience, Antioxidants, Biofactors, Disease Markers, European Journal of Neurology, Journal of Neuroscience Research, Neuroscience Letters, Neural Plasticity, Neural Regeneration Research, Neurochemistry International, Pharmaceutics, Journal of NeuroImmune Pharmacology, Life, Pharmacological Research, PlosONE, Food and Chemical Toxicology.

Technical expertise

Experimental Neurobiology with 30-years expertise in cellular and animal models of neurodegeneration
Morphological and biomolecular analyses of neurotrophic factors (in particular NGF), signaling differenziation/proliferation, cellular viability-death (apoptosis/autophagy) and mitochondrial function/dynamics/bioenergetics, redox system, brain metabolism, by cellular biochemistry (RT-PCR, immunoblot, immunocytochemistry, flow cytometry, DNA/RNA analysis, gene cloning and site-directed mutagenesis, transcriptional regulation of gene expression (reporter genes, EMSA, ChIP).

Organization or Participation to International Conferences

Accademia Nazionale delle Scienze, detta dei XL. Workshop on Complex Systems: from Physics to Biomedicine – Oral Communication "Three simple motifs through which to understand complexity in neural differentiation". Rome, May 10, 2022
Lake Como School of Neuroscience: from cellular mechanisms to disease modeling – Oral Communication "Neuroscience system biology and brain metabolism". Como, May 9-13, 2022
Scientific Board of the NeuroMI Annual Meetings (2020-Present).
Scientific Board of the Fifth NeuroMI International Meeting "Food for Brain: promote health and prevent diseases". Milano, November 20-22, 2019.
Co-President of the Fourth NeuroMI International Meeting "Brain stimulation and brain plasticity: from basic research to clinical practice". Milano, November 21-23, 2018

Corbel Operator meeting, Corbel (H2020) – Oral communication “Modelling ROS management and mitochondrial dysfunction in models of Parkinson disease". Berlin, Jan 22-23, 2018.
SYSBIO Days, SYSBIO Centre of Systems biology, BTBS-UNIMIB – Oral communication “Modelling the tripartite synapse”. Milano, Dic 15-16, 2014.
SYSBIO Days, SYSBIO Centre of Systems biology, BTBS-UNIMIB – Oral Communication “BB14 and neurodegeneration”. Milano, Feb 25-28, 2013.
Annual meeting for PhD Program in Industrial Biotechnology – Oral Communication “Cellular and animal models to understand brain function and neurodegeneration”. Verbania Pallanza, October 13-15, 2013.
1st Annual meeting NEDD-Network-Enabled Drug Design, BTBS-UNIMIB – Oral Communication “Neuroprotection by Nerve Growth Factor (NGF) and NGF-like molecules”. Milano, April 5, 2012.
1st SYSBIO meeting, SYSBIO Centre of Systems biology, BTBS-UNIMIB – Oral Communication “Systems Biology for the Biology of a System”. Milano, Feb 25-28, 2012.
14th International Biotechnology Symposium IBS – Oral communication “Neuroprotection by Nerve Growth Factor (NGF) involves modulation of reactive gliosis and neuronal autophagy” (J BIOTECHNOL 2010, 150(Suppl 1), S98. DOI: 0.1016/j.jbiotec.2010.08.253). Rimini, Sept 14-18, 2010.
SysBioHealth Symposium 2009 – Oral communication “Role of endogenous NGF in modulation of neuro-glial network in the spinal cord of a rat model of neuropathic pain”. Milano, Nov. 25-27, 2009.
Organization of the Mini-symposium “Neurodegenerative diseases: molecular mechanisms and novel therapeutic strategies”, BTBS-UNIMIB, Milano, June 25 2008.
8th Int. Conference on Nerve Growth Factor and Related Neurotrophic Factors: From Laboratory to Clinic. “Molecular Evolution of Neurotrophins and Trk receptors”. Lyon, 25-29 May, 2006.
7° Natl. Conference of Biotechnology – Oral Communication “A new approach for production and purification of recombinant human Nerve Growth Factor in mammalian cells” (7° CNB-CIB Abstract book, S105). Catania, Italy, Sept 8-10, 2004.
7th International Conference on NGF and Related Molecules – Oral Communication “beta-adrenergic receptor-mediated activation of the NGF promoter”. Modena, 15-19 May 2002.
Seminar “Transcriptional regulation of Nerve Growth Factor expression in the Central Nervous System”. DIBIT-Istituto Scientifico San Raffaele. Milano, November 1999.

Annual ABL-Basic Research Program meeting, National Cancer Institute-Frederick Cancer Research and Development Center – Oral Communication “Transcriptional regulation of Nerve Growth Factor gene expression by CCAAT/Enhancer Binding Protein δ”. Frederick MD, USA, October 1997.

Annual Interdepartmental Research Days 1996, Georgetown University School of Medicine – Oral Communication “Transcription factors involved in the regulation of Nerve Growth Factor expression in glial cells”. Washington DC, USA, October 1996.
Annual Interdepartmental Research Days 1994, Georgetown University School of Medicine – Oral Communication: “Intracellular Ca^{++} as a second messenger for NGF responsiveness”. Washington DC, USA, October 1994.
Institute of Pharmacology, Faculty of Pharmacy, University of Pavia – Seminar “Regulation of the signal transduction of Nerve Growth Factor”. Pavia, October 1995.
Annual Interdepartmental Research Days 1993, Georgetown University School of Medicine – Oral Communication: “Induction of NGF responsiveness by trkA proto-oncogene expression in C6-2B glioma cells”. Washington DC, USA, October 1993.

Annual Interdepartmental Research Days 1993, Georgetown University School of Medicine – Oral Communication: “Induction of NGF responsiveness by trkA proto-oncogene expression in C6-2B glioma cells”. Washington DC, USA, October 1993.

Patents

Alberghina L, Colangelo AM, Martegani E. (2008). Method for the production of biologically active rhNGF. USP 2008/0214464A1 Published on Sept. 4, 2008.

Books and Book Chapters

1. Alberghina L, Colangelo AM, Tonini F. ALBERGHINA.La Biochimica (Fondamenti e nuove frontiere). Ed. A. MONDADORI SCUOLA 2014. ISBN 978-88-247-4637-3
2. Colangelo AM and Alberghina L (2010). Apoptotic Mechanisms Involved in Neurological Disorders. In: Modern Insights Into Disease From Molecules to Man: Apoptosis (Preedy VR, Ed.) Science Publishers Inc, pp. 437-455. Print ISBN: 978-1-57808-583-5; eBook ISBN: 978-1-4398-4543-1; DOI: 10.1201/9781439845431
3. Mocchetti I and Colangelo AM (2001). Transcriptional Regulation of NGF in the Central Nervous System. In: Neurobiology of the Neurotrophins (Mocchetti I, Ed.), F.P. Graham Publishing Co., pp. 631-654. ISBN-10 1-929675-01-1; ISBN-13 978-1-929675-01-2

Peer Reviewed Articles

(Publications 51; Scopus H-index 24; Citations 1700; *corresponding author; § equal contribution)
http://www.scopus.com/inward/authorDetails.url?authorID=6603763210&partnerID=MN8TOARS
https://orcid.org/0000-0002-7971-4289
https://boa.unimib.it/mydspace

1. Cerasuolo M, Di Meo I, Auriemma MC, Trojsi F, Maiorino MI, Cirillo M, Esposito F, Polito R, Colangelo AM, Paolisso G, Papa M and Rizzo MR. Iron and Ferroptosis More than a Suspect: Beyond the Most Common Mechanisms of Neurodegeneration for New Therapeutic Approaches to Cognitive Decline and Dementia. Int. J. Mol. Sci. 2023, 24(11), 9637; https://doi.org/10.3390/ijms24119637
2. Cerasuolo M, Papa M, Colangelo AM, Rizzo MR. Alzheimer's Disease from the Amyloidogenic Theory to the Puzzling Crossroads between Vascular, Metabolic and Energetic Maladaptive Plasticity. Biomedicines. 2023 Mar 11;11(3):861. doi: 10.3390/biomedicines11030861.
3. Bonanomi M, Salmistraro N, Porro D, Pinsino A, Colangelo AM, Gaglio D (2022). Polystyrene micro and nano-particles induce metabolic rewiring in normal human colon cells: A risk factor for human health. Chemosphere. 2022 Sep;303(Pt 1):134947. doi: 10.1016/j.chemosphere. 2022.134947.
4. De Luca C, Virtuoso A, Cerasuolo M, Gargano F, Colangelo AM, Lavitrano M, Cirillo G, Papa M (2022). Matrix metalloproteinases, purinergic signaling, and epigenetics: hubs in the spinal neuroglial network following peripheral nerve injury. Histochem Cell Biol. 2022 May;157(5):557-567. doi: 10.1007/s00418-022-02082-4.
5. Virtuoso A, Colangelo AM, Maggio N, Fennig U, Weinberg N, Papa M, De Luca C (2021). The Spatiotemporal Coupling: Regional Energy Failure and Aberrant Proteins in Neurodegenerative Diseases. Int. J. Mol. Sci. 2021 Oct 20;22(21):11304. doi: 10.3390/ijms222111304.
6. Bonanomi M, Salmistraro N, Fiscon G, Conte F, Paci P, Bravatà V, Forte GI, Volpari T, Scorza M, Mastroianni F, D'Errico S, Avolio E, Piccialli G, Colangelo AM, Vanoni M, Gaglio D, Alberghina L (2021). Transcriptomics and Metabolomics Integration Reveals Redox-Dependent Metabolic Rewiring in Breast Cancer Cells. Cancers (Basel), 13(20):5058. doi: 10.3390/cancers13205058.
7. Virtuoso A§, Colangelo AM§, Korai SA, Izzo S, Todisco A, Giovannoni R, Lavitrano M, Papa M, Cirillo G (2021). Inhibition of plasminogen/plasmin system retrieves endogenous nerve growth factor and

adaptive spinal synaptic plasticity following peripheral nerve injury. Neurochem Int. 2021 Sep;148:105113. doi: 10.1016/j.neuint.2021.105113.

8. Virtuoso A, De Luca C, Gargano F, Colangelo AM*, Papa M (2020). The Spinal Extracellular Matrix Modulates a Multi-level Protein Net and Epigenetic Inducers Following Peripheral Nerve Injury. Neuroscience 451:216-225. doi: 10.1016/j.neuroscience.2020.09.051.
9. Kolodkin A§, Sharma RP§, Colangelo AM§, Ignatenko A, Martorana F, Jennen D, Briedé JJ, Brady N, Barberis M, Mondeel TDGA, Papa M, Kumar V, Peters B, Skupin A, Alberghina L, Balling R, Westerhoff HV§ (2020). ROS networks: designs, aging, Parkinson's disease and precision therapies. NPJ Syst Biol Appl. 6(1):34. doi: 10.1038/s41540-020-00150-w.
10. De Luca C, Virtuoso A, Maggio N, Izzo S, Papa M, Colangelo AM (2020). Roadmap for Stroke: Challenging the Role of the Neuronal Extracellular Matrix. Int J Mol Sci. 21(20):7554. doi: 10.3390/ijms21207554.
11. Gaglio D, Bonanomi M, Valtorta S, Bharat R, Ripamonti M, Conte F, Fiscon G, Righi N, Napodano E, Papa F, Raccagni I, Parker SJ, Cifola I, Camboni T, Paci P, Colangelo AM, Vanoni M, Metallo CM, Moresco RM, Alberghina L (2020). Disruption of redox homeostasis for combinatorial drug efficacy in K-Ras tumors as revealed by metabolic connectivity profiling. Cancer & Metab. 8:22. doi: 10.1186/s40170-020-00227-4. eCollection 2020.
12. De Luca C, Colangelo AM*, Virtuoso A, Alberghina L, Papa M (2020). Neurons, Glia, Extracellular Matrix and Neurovascular Unit: A Systems Biology Approach to the Complexity of Synaptic Plasticity in Health and Disease. Int J Mol Sci. 21(4):1539. doi: 10.3390/ijms21041539.
13. Martorana F, Foti M, Virtuoso A, Gaglio D, Aprea F, Latronico T, Rossano R, Riccio P, Papa M, Alberghina L, Colangelo AM* (2019). Differential Modulation of NF-κB in Neurons and Astrocytes Underlies Neuroprotection and Antigliosis Activity of Natural Antioxidant Molecules. Oxid Med Cell Longev. 2019:8056904. doi: 10.1155/2019/8056904. eCollection 2019.
14. Colangelo AM*, Cirillo G, Alberghina L, Papa M, Westerhoff HV* (2019). Neural plasticity and adult neurogenesis: the deep biology perspective. Neural Regen Res. 14(2):201-205. doi: 10.4103/1673-5374.244775.
15. De Luca C§, Colangelo AM§*, Alberghina L, Papa M (2018). Neuro-Immune Hemostasis: Homeostasis and Diseases in the Central Nervous System. Front Cell Neurosci. 12:459. doi: 10.3389/fncel.2018.00459. eCollection 2018.
16. Martorana F, Gaglio D, Bianco MR, Aprea F, Virtuoso A, Bonanomi M, Alberghina L, Papa M, Colangelo AM* (2018). Differentiation by nerve growth factor (NGF) involves mechanisms of crosstalk between energy homeostasis and mitochondrial remodeling. Cell Death Dis. 9(3):391. doi: 10.1038/s41419-018-0429-9.
17. Gaglio D, Valtorta S, Ripamonti M, Bonanomi M, Damiani C, Todde S, Negri AS, Sanvito F, Mastroianni F, Di Campli A, Turacchio G, Di Grigoli G, Belloli S, Luini A, Gilardi MC, Colangelo AM, Alberghina L, Moresco RM (2016). Divergent in vitro/in vivo responses to drug treatments of highly aggressive NIH-Ras cancer cells: a PET imaging and metabolomics-mass-spectrometry study. Oncotarget. 7(32):52017-52031. doi: 10.18632/oncotarget.10470.
18. Sala G, Marinig D, Riva C, Arosio A, Stefanoni G, Brighina L, Formenti M, Alberghina L, Colangelo AM, Ferrarese C (2016). Rotenone down-regulates HSPA8/hsc70 chaperone protein in vitro: A new possible toxic mechanism contributing to Parkinson's disease. NeuroToxicology. 54:161-9. doi: 10.1016/j.neuro.2016.04.018.
19. Calderone A*, Formenti M, Aprea F, Papa M, Alberghina L, Colangelo AM*, Bertolazzi P (2016). Comparing Alzheimer's and Parkinson's diseases networks using graph communities structure. BMC Syst Biol. 10:25. doi: 10.1186/s12918-016-0270-7.
20. Cirillo G, Colangelo AM, De Luca C, Savarese L, Barillari MR, Alberghina L, Papa M (2016). Modulation of Matrix Metalloproteinases Activity in the Ventral Horn of the Spinal Cord Re-stores Neuroglial Synaptic

Homeostasis and Neurotrophic Support following Peripheral Nerve Injury. PLoS One. 11(3):e0152750. doi: 10.1371/journal.pone.0152750. eCollection 2016.

21. De Luca C, Savarese L, Colangelo AM, Bianco MR, Cirillo G, Alberghina L, Papa M (2016). Astrocytes and Microglia-Mediated Immune Response in Maladaptive Plasticity is Differently Modulated by NGF in the Ventral Horn of the Spinal Cord Following Peripheral Nerve Injury. Cell Mol Neurobiol. 36(1):37-46. doi: 10.1007/s10571-015-0218-2.
22. Cirillo G§, Colangelo AM§, Berbenni M, Ippolito VM, De Luca C, Verdesca F, Savarese L, Alberghina L, Maggio N, Papa M (2015). Purinergic Modulation of Spinal Neuroglial Maladaptive Plasticity Following Peripheral Nerve Injury. Mol Neurobiol. 52(3):1440-57. doi: 10.1007/s12035-014-8943-y.
23. Morara S, Colangelo AM, Provini L (2015). Microglia-Induced Maladaptive Plasticity Can Be Modulated by Neuropeptides In Vivo. Neural Plast. 2015:135342. doi: 10.1155/2015/135342.
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