PERSONAL INFORMATION Mariarosaria Santillo

Enterprise	University	EPR
☐ Management Level	☒ Full professor	☐ Research Director and 1st level Technologist / First Researcher and 2nd level Technologist
☐ Mid-Management Level	☐ Associate Professor	☐ Level III Researcher and Technologist
☐ Employee / worker level	☐ Researcher and Technologist of IV, V, VI and VII level / Technical collaborator	☐ Researcher and Technologist of IV, V, VI and VII level / Technical collaborator

WORK EXPERIENCE

Replace with dates (from - to)

From February 2020 to date, Full Professor in Physiology at the Department of Clinical Medicine and Surgery of the University of Naples "Federico II".
From November 2011 to January 2020, Associate Professor in Physiology at the Department of Clinical Medicine and Surgery of the University of Naples "Federico II".
From 1989 to 2011: Executive biologist at the Department of Neuroscience, Section of Physiology, University of Naples "Federico II"
Teaching activities:
Teaching Activities in “Human Physiology”, for the degree courses of “Medicine and Surgery”, “Dentistry”, “Biotechnology” and Healthcare Professions of the University Federico II of Naples from the academic years 1984-1985 to date.
Teaching Activities for Specialization schools and Masters of the Medicine and Surgery School of the University Federico II of Naples.
Clinical activity
Executive Biologist at DAI di “Medicina interna ad indirizzo specialistico” of ’Azienda Universitaria Policlinico dell’Università “Federico II” di Napoli.
Director of the program: “Valutazione quali-quantitativa delle diete rilasciate in regime di consulenza”.

EDUCATION AND TRAINING

Replace with dates (from - to)

Education
1992: PhD in Physiology at University of Naples Federico II
1986: Master in Biomedical Technology with highest honours at University of Naples Federico II
1982: Degree in Biological Sciences with 110 cum laude at University of Naples Federico II

Scientific interests: Oligodendrocyte differentiation; Multiple Sclerosis; Antioxidants; CuZn superoxide dismutase in neuromodulation; Redox signaling; Oxidative stress in neurodegenerative and neuroinflammatory diseases; Autoimmune diseases.

Technical expertise: Cell cultures; Subcellular fractionation; Binding assay; Confocal microscopy; Flow cytometry; Fluorimetric techniques; Enzymology; Protein biochemistry; Molecular biology techniques.

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s) English

Technology Transfer skills

Patents

- Diagnosis and therapy of multiple sclerosis. US10633427B2 grant date 28 Apr 2020; EP3109257A1, pending.
- Epitopes of human PDGF receptor able to bind human auto-antibodies, antibodies and uses thereof. WO2012013813A1; EP2598532B1 grant date 12 Ju 2017; US9150634B2 grant date 6 Oct 2015.
- Method for diagnosis, monitoring the efficacy of a therapy and for development of treatment for multiple sclerosis. WO2012080193A1; EP2652501A1 grant date 20 Apr 2016.
- Stimulatory auto-antibodies to the PDGF receptor as pathology marker and therapeutic target. WO2007013124A2; EP1907851B1 grant date19 Oct 2011.
- Methods to diagnose an autoimmune disease and to identify and isolate stimulatory molecules. WO2008090213A1. EP2122348B1 grant date 13 Aug 2014.

Spin offs participation

2012: Academic spin off PRINDEX
2008: Academic spin off "PRIUS Sistema Integrato di Diagnosi e Terapia"

Higher Education & Training skills

From 2017 to date: Director of the Specialization School “Scienza dell’Alimentazione”, University of Naples, “Federico II”
From 2017 to date: Director of Second Degree Master in “Dietologia ed Alimentazione Umana”, University of Naples, “Federico II”

Project Management skills

Funded research

-PI of the research project “Multiple sclerosis pathogenic antibodies targeting myelin forming cells” funded by Fondazione Italiana Sclerosi Multipla (FISM), 2018.
-Scientific Director of research activity on “The role of enzymes producing reactive oxygen species in signaling pathways activated by membrane receptors”. Agreement between Department of Neuroscience of the University of Naples “Federico II” and Prindex, 2008.
-Scientific Director of research activity on “Redox signaling in oligodendrocyte differentiation”. Agreement between Department of Neuroscience of the University of Naples “Federico II” and Prindex, 2020.
-PI of a research unit for the project “Biosynthetic pathway of cholesterol and isoprenoids in human colorectal cancer: pathway inhibitors in anticancer therapy.” funded from Ministry of Health, 2000/2001

ADDITIONAL INFORMATION

Projects

Projects funded by MUR (60%) from 1985 to 1995
Project funded by CNR, 1991, 1994
Project funded by A.I.R.C., 1996/97, 1998/99, 1999/2001 and 2002/2004
MUR, PRIN, 1999, 2001
MUR, PRIN, 2003, 2005, 2007
MUR funds for the academic Spin-off Prindex, 2009
POR Campania 2014/2020

Publication Track record

Scientific papers in peer reviewed journals: 74
Number of Citations: 2638
Hirsh index 26
Abstracts of scientific presentations at conferences and symposia: 61

Publications

Most relevant publications:

1. Seru R., Mondola P., Damiano S., Svegliati S., Agnese S., Avvedimento E.V., Santillo M. HaRas activates the NADPH oxidase complex in human neuroblastoma cells via extracellular signal-regulated kinase 1/2 pathwa.y. J. Neurochem. 91, 613-622, 2004.

2. Svegliati Baroni S., Cancello R., Sambo P. , Luchetti M., Paroncini P., Orlandini G., Discepoli G., Paterno' R., Santillo M., Cuozzo C. , Cassano S., Avvedimento E. V., Gabrielli A. PDGF and Reactive Oxygen Species (ROS) regulate Ras protein levels in primary human fibroblasts via ERK1/2: Amplification of ROS and Ras in systemic sclerosis fibroblasts.J. Biol. Chem. 280, 36474-36482, 2005.

3. Svegliati Baroni S., Santillo M., Bevilacqua F., Luchetti M., Spadoni T., Mancini M., Fraticelli P., Sambo P., Funaro A., Kazlauskas A., Avvedimento E. V., Gabrielli A., Stimulatory autoantibodies to the PDGF receptor in systemic sclerosis (scleroderma). New Eng. J. of Med., 354, 2667-2676, 2006.

4. Santillo M, Secondo A, Serù R, Damiano S, Garbi C, Taverna E, Rosa P, Giovedì S, Benfenati F, Mondola P Evidence of calcium- and SNARE-dependent release of CuZn superoxide dismutase from rat pituitary GH3 cells and synaptosomes in response to depolarization. J Neurochem., 102, 679-685, 2007.

5. Scorziello A, Santillo M, Adornetto A, Dell'aversano C, Sirabella R, Damiano S, Canzoniero LM, Renzo GF, Annunziato L. NO-induced neuroprotection in ischemic preconditioning stimulates mitochondrial Mn-SOD activity and expression via RAS/ERK1/2 pathway. J Neurochem. , 103, 1472-1480, 2007.

6. Ruocco A., Santillo M., Cicale M., Serù R., Cuda G., Anrather J., Iadecola C., Postiglione A., Avvedimento E.V., Paternò R. Farnesyl transferase inhibitors induce neuroprotection by inhibiting Ha-Ras signalling pathway. Eur J Neurosci. 26, 3261-3266, 2007

7. Secondo A, De Mizio M, Zirpoli L, Santillo M, Mondola P. The Cu-Zn superoxide dismutase (SOD1) inhibits ERK phosphorylation by muscarinic receptor modulation in rat pituitary GH3 cells. Biochem Biophys Res Commun. 376, 143-147, 2008.

8. Cassano S, Agnese S, D'amato V, Papale M, Garbi C, Castagnola P, Ruocco MR, Castellano I, De Vendittis E, Santillo M, Amente S, Porcellini A, Avvedimento EV. ROS, Ki-Ras and mitochondrial sod co-operate in NGF-induced differentiation of PC12 cells. J. Biol. Chem., 285, 24141-24153, 2010.

9. Viggiano A, Serù R, Damiano S, De Luca B, Santillo M, Mondola P. Inhibition of long term potention by CuZn superoxide dismutase injection in rat dentate gyrus: Involvement of muscarinic M1 receptor. J Cell Physiol. 327, 3111-3115, 2012.

10. Damiano S, Fusco R, Morano A, De Mizio M, Paternò R, De Rosa A, Spinelli R, Amente S, Frunzio R, Mondola P, Miot F, Laccetti P, Santillo M, Avvedimento EV.
Reactive oxygen species regulate the levels of dual oxidase (duox1-2) in human neuroblastoma cells. PLoS One 7, e34405, 2012.

11. Damiano S, Petrozziello T, Ucci V, Amente S, Santillo M, Mondola P. Cu-Zn superoxide dismutase activates muscarinic acetylcholine M1 receptor pathway in neuroblastoma cells. Mol Cell Neurosci., 12, 31-37, 2013.

13. Terrazzano G, Rubino V, Damiano S, Sasso A, Petrozziello T, Ucci V, Palatucci A, Giovazzino A, Santillo M, De Felice B, Garbi C, Mondola P, Ruggiero G. T cell activation induces CuZn superoxide dismutase (SOD)-1 intracellular re-localization, production and secretion. Biochim Biophys Acta. 1843, 265–274, 2014.

14. Damiano S, Sasso A, De Felice B, Terrazzano G, Bresciamorra V, Carotenuto A, Orefice NS, Orefice G, Vacca G, Belfiore A, Santillo M, Mondola P. The IFN- 1b effect on Cu Zn superoxide dismutase (SOD1) in peripheral mononuclear blood cells of relapsing-remitting multiple sclerosis patients and in neuroblastoma SK-N-BE cells Brain Res. Bull. 118, 1–6, 2015

15. Accetta R, Damiano S, Morano A, Mondola P, Paternò R, Avvedimento EV, Santillo M. Reactive Oxygen Species Derived from NOX3 and NOX5 Drive Differentiation of Human Oligodendrocytes. Front Cell Neurosci. 10:146. 2016.

16. Damiano S, Sasso A, Accetta R, Monda M, De Luca B, Pavone LM, Belfiore A, Santillo M, Mondola P. Effect of Mutated Cu, Zn Superoxide Dismutase (SOD1G93A) on Modulation of Transductional Pathway Mediated by M1 Muscarinic Receptor in SK-N-BE and NSC-34 Cells. Front Physiol. 2018 May 24; 9: 611. eCollection 2018.

17. Lettieri-Barbato, D., Minopoli, G., Caggiano, R., Izzo, R., Santillo, M., Aquilano, K., Faraonio, R. Fasting drives nrf2-related antioxidant response in skeletal muscle Int. J. Mol. Sci., 21 (20), 2020.

18. Lapi D., Cammalleri M., Dal Monte M., Di Maro M., Santillo M., Belfiore A., Nasti G., Damiano S., Trio R., Chiurazzi M., De Conno B., Serao N., Mondola P., Colantuoni A., Guida B.The effects of angiotensin ii or angiotensin 1-7 on rat pial microcirculation during hypoperfusion and reperfusion injury: Role of redox stress. Biomolecules 10 Dec 2021 11(12).

19. Rubino V., Palatucci AT., La Rosa G., Giovazzino A., Aruta F., Damiano S., Carriero F., Santillo M., Iodice R., Mondola P., Ruggiero G., Terrazzano G.Superoxide dismutase-1 intracellular content in T lymphocytes associates with increased regulatory T cell level in multiple sclerosis subjects undergoing

immune-modulating treatment. Antioxidants (Basel) 3 Dec 2021 10(12)
20. Damiano S., La Rosa G., Sozio C., Cavaliere G., Trinchese G., Raia M., Paternò R., Mollica M.P., Avvedimento V.E., Santillo M. 5-hydroxytryptamine modulates maturation and mitochondria function of human oligodendrocyte progenitor M03-13 cells. Int. J. Mol. Sci., 2021, 22(5), pp. 1–27, 2621

Collaborations

Multiple sclerosis, SOD1 and T cells: Prof. Giuseppe Terrazzano, Dipartimento di Scienze. Università della Basilicata.
Redox stress and autoimmune diseases: Prof. Armando Gabrielli Dipartimento di Scienze Mediche e Chirurgiche, Università Politecnica delle Marche

Naples, 21/10/2022

Mariarosaria Santillo