

Personal Information Marzia Perluigi

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Occupational field 2019 Full Professor of Biochemistry E1/05 (BIO10)

Work experience

The major research interest is the study of the molecular mechanisms involved in neurodegeneration, mainly in Down Syndrome (DS) and Alzheimer Disease (AD). Projects involve both the analysis of post-mortem brains, biological fluids (CSF and plasma) and cellular and animal models of the diseases. In particular, she contributed to tune up the redox proteomics approach thus allowing the identification of oxidatively modified proteins in DS, AD and other neurodegenerative disease (ALS and HD). Results obtained by the analysis of human specimens and mouse models revealed a molecular link between protein oxidation/aggregation, the integrity of the protein quality control system (proteasome, UPS and autophagy), dysfunction of energy metabolism and neurodegeneration. Further, we recently demonstrated the disturbance of PI3K/Akt/mTOR axis in DS brain, prior and after development of AD. Aberrant mTOR signalling in the brain affects multiple pathways including glucose metabolism, energy production, mitochondrial function and autophagy. All these events are key players in age-related cognitive decline and contribute to the development of Alzheimer-like dementia in DS. Ongoing studies are focused on the crosstalk between defects of energy metabolism and AD neuropathology.

Education and training

2006: Research associate in Biochemistry, Sapienza University of Rome
2004-2005: Post-doc fellowship at the Laboratory of Neurochemistry, University of Kentucky, (USA)
2002-2004: post-doc fellowship at the Department of Biochemical Sciences Sapienza University of Rome in collaboration with "Regina Elena Institute for Cancer Research"
2002: PhD in Biochemistry, University of Rome La Sapienza.
1999: Pharmaceutical Chemistry Doctor. 110/110 Magna cum Laude Sapienza University of Rome

Additional information**Teaching activity:**

2007-present: Sapienza University of Rome, Faculty of Pharmacy and Medicine
Biochemistry/Degree Courses Class for Nursing School
2011-present: Sapienza University of Rome, Faculty of Pharmacy and Medicine Biochemistry I and II for CcL "F" International School of Medicine
2012-present: Sapienza University of Rome, Faculty of Pharmacy and Medicine
Biochemistry/Degree Courses Class for Laboratory Technician and Radiologist, sede RIETI and Policlinico Umberto I
2020-present: Biochemistry for Bioinformatics Course, Sapienza University of Rome, Faculty of SMFN

Honors and awards

2004. Fellowship (Sapienza University) to support travel to University of Kentucky (USA)
2007. Travel award Italian Society of Biochemistry and Molecular Biology, Riccione (IT)
2009. Travel award Italian Society of Biochemistry and Molecular Biology, Catania (IT)
2011. Travel award 36th International FEBS Congress Torino (IT)
2012. Top "young researcher" Faculty of Medicine, Sapienza University of Rome

Fundings (most relevant)

2020: co-PI Two-photon microscopy (576.000 E)

2020-21: co-PI Jerome Lejeune Foundation, Project ID Cycle 2019b#1887 – 80.000,00 E

Aberrant insulin signaling contributes to development of Alzheimer disease in Down syndrome: search for novel therapeutic strategies

2020-22: I Alzheimer's Association, Project ID 2019-AARG-643091 - 150.000,00 Dollars

Unravelling a novel mechanism favoring brain insulin resistance development

2019-21: I Italian Ministry of Health, Project ID GR-2018-12366381 – 442.000,00 E (funding to Sapienza UNIT 87.000,00 E)

Aberrant protein palmitoylation: a novel biomarker and therapeutic target in Alzheimer's disease

2019-21: I Sapienza University of Rome, Project ID RG11916B87F55459 – 34.000,00 E

Unravelling a novel mechanism favoring brain insulin resistance development and its impact on Alzheimer disease neuropathology

2018-20: PI, Progetto MEDIO Ateneo, 8.500 E Sapienza University mTOR activation within

neural- derived, plasma-resident exosomes can predict cognitive decline in Down Syndrome

2017-18: co-PI Banca d'Italia

Scientific Publication

Number of publications =128 <http://www.ncbi.nlm.nih.gov/pubmed/?term=perluigi+m>
h-index = 48, total citations = 6230