
FRANCESCA MALERBA

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Francesca Malerba has been involved in the biochemistry of proteins since the beginning of her scientific career, from the expression and purification of recombinant proteins, the subject of her degree thesis, to the studies of enzymatic kinetics and protein structure, focus of the doctoral project carried out at the department of biochemistry at “La Sapienza”.

After a brief period in the immunology laboratory of a pharmaceutical company, where she acquired expertise in the development of immunoassays, she obtained a fellowship at EBRI and began to work on NGF, proNGF, and its mutants of therapeutic interest, in Professor Antonino Cattaneo's laboratory.

In 2007, she joined the team of Rita Levi-Montalcini, participating in the research project completely conceived by the scientist at the age of 99, which led to the discovery of a new function of NGF in the chick embryo.

Education and Positions

2000 Degree in Industrial Biotechnology, "Alma mater studiorum", Università di Bologna.

2006 PhD in Cellular and Molecular Biology (specializing in Biochemistry), Università dell'Aquila and Università La Sapienza (Roma)

2012 Postdoctoral Fellow, Academic Class of Science- Neurobiology, Scuola Normale Superiore Pisa

Publications

2021

proNGF Measurement in Cerebrospinal Fluid Samples of a Large Cohort of Living Patients With Alzheimer's Disease by a New Automated Immunoassay. Malerba F, Arisi I, Florio R, Zecca C, Dell'Abate MT, Bruni Ercole B, Camerini S, Casella M, Logroscino G, Cattaneo A. *Front Aging Neurosci.* 2021 Oct 27;13:741414. doi: 10.3389/fnagi.2021.741414. eCollection 2021. PMID: 34776928.

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2020

Passive immunotherapy for N-truncated tau ameliorates the cognitive deficits in two mouse Alzheimer's disease models. Corsetti V, Borreca A, Latina V, Giacobazzo G, Pignataro A, Krashia P, Natale F, Cocco S, Rinaudo M, Malerba F, Florio R, Ciarapica R, Coccurello R, D'Amelio M, Ammassari-Teule M, Grassi C, Calissano P, Amadoro G. *Brain Commun*. 2020 Apr 6;2(1):fcad039.

2019

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ProNGF Is a Cell-Type-Specific Mitogen for Adult Hippocampal and for Induced Neural Stem Cells. Corvaglia V, Cilli D, Scopa C, Brandi R, Arisi I, Malerba F, La Regina F, Scardigli R, Cattaneo A. *Stem Cells*. 2019 Sep;37(9):1223-1237. doi: 10.1002/stem.3037. Epub 2019 Jun 22. PMID: 31132299

2017

Nerve growth factor derivative NGF61/100 promotes outgrowth of primary sensory neurons with reduced signs of nociceptive sensitization. Severini C, Petrocchi Passeri P, Ciotti MT, Florenzano F, Petrella C, Malerba F, Bruni B, D'Onofrio M, Arisi I, Brandi R, Possenti R, Calissano P, Cattaneo A. *Neuropharmacology*. 2017 Feb 2. pii: S0028-3908(17)30034-5. doi: 10.1016/j.neuropharm.2017.01.035.

The chemokine CXCL12 mediates the anti-amyloidogenic action of painless human Nerve Growth Factor
Simona Capsoni, Francesca Malerba, Nicola Maria Carucci, Caterina Rizzi, Chiara Criscuolo, Nicola Origlia, Mariantonietta Calvello, Alessandro Viegi, Giovanni Meli, Antonino Cattaneo
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2016

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Paoletti F, de Chiara C, Kelly G, Covaceuszach S, Malerba F, Yan R, Lamba D, Cattaneo A, Pastore A.
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Frontiers in Molecular Neuroscience, 2016 Aug 3;9:63. doi: 10.3389/fnmol.2016.00063.

2015

Functional Characterization of Human ProNGF and NGF Mutants: Identification of NGF P61SR100E as a "Painless" Lead Investigational Candidate for Therapeutic Applications.
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PLoS One. 2015 Sep 15;10(9):e0136425

A comparative analysis of the structural, functional and biological differences between Mouse and Human Nerve Growth Factor.
Paoletti F, Malerba F, Ercole BB, Lamba D, Cattaneo A.
Biochim Biophys Acta. 2015 Mar;1854(3):187-97.

2014

proNGF/NGF mixtures induce gene expression changes in PC12 cells that neither singly produces. Arisi I, D'Onofrio M, Brandi R, Malerba F, Paoletti F, Storti AE, Florenzano F, Fasulo L, Cattaneo A. *BMC Neurosci*. 2014 Apr 8;15:48. doi: 10.1186/1471-2202-15-48.

2013

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2012

Intranasal "painless" Human Nerve Growth Factors slows Amyloid Neurodegeneration and prevents memory deficits in App X PS1 Mice. Simona Capsoni, Sara Marinelli, Marcello Ceci, Domenico Vignone, Gianluca Amato, Francesca Malerba, Francesca Paoletti, Giovanni Meli, Alessandro Viegi, Flaminia Pavone, Antonino Cattaneo. *PLoS One*. 2012;7(5):e37555. Epub 2012 May 30

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Nerve growth factor regulates axial rotation during early stages of chick embryo development. Annalisa Manca, Simona Capsoni, Anna Di Luzio, Domenico Vignone, Francesca Malerba, Francesca Paoletti, Rossella Brandi, Ivan Arisi, Antonino Cattaneo, and Rita Levi-Montalcini. *Proc Natl Acad Sci U S A*. 2012 Feb 7;109(6):2009-14

2011

Conformational plasticity of proNGF. Francesca Paoletti, Francesca Malerba, Geoff Kelly, Sylvie Noinville, Dorian Lamba, Antonino Cattaneo, and Annalisa Pastore. PLoS one, 2011 6(7):e22615.

NGF and proNGF regulate functionally distinct mRNAs in PC12 cells: an early gene expression profiling. Mara D'Onofrio, Francesca Paoletti, Ivan Arisi, Rossella Brandi, Francesca Malerba, Luisa Fasulo, Antonino Cattaneo. PLOS one, 2011;6(6):e20839

Intranasal delivery of therapeutic proteins for neurological diseases. Francesca Malerba, Francesca Paoletti, Simona Capsoni & Antonino Cattaneo. Expert Opin Drug Deliv. 2011 Oct;8(10):1277-96.

2009

Intrinsic structural disorder of mouse proNGF. Francesca Paoletti, Sonia Covaceuszach, Peter V. Konarev, Stefania Gonfloni, Francesca Malerba, Elisabeth Schwarz, Dimitri I. Svergun, Antonino Cattaneo, Dorian Lamba. Proteins. 2009 Jun;75(4):990-1009.

2007

The mechanism of addition of pyridoxal 5'-phosphate to Escherichia coli apo-serine hydroxymethyltransferase. Francesca Malerba, Andrea Bellelli, Alessandra Giorgi, Francesco Bossa and Roberto Contestabile Biochem J. 2007 Jun 15;404(3):477-85.