

## **Curriculum vitae: Luigi Formisano**

**Associate Professor SSD: BIO/14 - Pharmacology and Toxicology**

Department of Neuroscience

University of Naples "Federico II", Naples, Italy

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## **EDUCATION**

**2006** Residency in Pharmacology

**2003** PhD Neuropharmacology and Toxicology, University of Naples "Federico II", Naples, Italy

**1999** Medical Degree, University of Naples "Federico II", Naples, Italy

## **POSITIONS:**

**May 2022** - present Associate Professor SSD: BIO/14, University of Naples "Federico II", Naples, Italy

**January 2018 – April 2022** Assistant Professor SSD: BIO/14, University of Naples "Federico II", Naples, Italy

**November 2008-Dicember 2017** Assistant Professor SSD: BIO/14, University of Sannio, Benevento, Italy

**2004-2007** (Visiting Scientist) Research Associate at the Dominick P. Purpura Department of Neuroscience, Albert Einstein University Bronx (NY) (USA)

**March 2007- October 2008** Post-doctoral Fellow, University of Naples "Federico II", Naples, Italy

**May 2004- February 2007** Post-doctoral Fellow, University of Naples "Federico II", Naples, Italy

## **FIELD of INTEREST**

**January 2018-**(University of Naples "Federico II). Study of the role HDAC class II and of DNA methylation in stroke-induced neurotoxicity. Investigating the effect of HDAC class inhibitor in in vitro and in vivo models of ALS.

**November 2008-Dicember 2017** (University of Sannio, Benevento) Study of the transcriptional mechanisms involved in the neurodegenerative processes induced by cerebral ischemia and in the mechanisms of neurotoxicity induced by environmental pollutants and their correlation with neurodegenerative diseases

**April 2004 -February 2007** (Albert Einstein Univ (NY) (USA). Investigating the epigenetic mechanism in brain ischemia. Focus on the role of the transcriptional repressor REST. Investigating the role of glutamate receptor phenotype to modify synaptic efficacy in cerebellar stellate cells.

**November 1999-April 2004** (University of Naples "Federico II). the study of the role of intracellular calcium regulatory mechanisms in determining neuroprotection through the modulation of the expression of the sodium calcium exchanger isoforms NCX1, NCX2 and NCX3

My laboratory skills include: cell and tissue cultures, confocal imaging, molecular biology and biochemistry (DNA cloning and mutagenesis, quantitative PCR, Chromatin Immunoprecipitation Assays, luciferase assays).

## **AWARDED COMPETITIVE GRANTS**

- 2018- “ Class Iia HDACs as therapeutic targets in human diseases: new roles and new selective inhibitors.” (PRIN 2017JL8SRX). Role: PI of the Research Unit. Fund awarded: € 120,000.
- 2015-2018. Role of the master epigenetic reader Methyl CpG binding Protein 2 (MeCP2) in gene expression after stroke ".(PRIN 2015BEX2BR). Role: Head of the Research Project and PI of the Research Unit. Fund awarded: € (83.000).

## **BIBLIOGRAPHIC PARAMETERS (Scopus, Sept 2022)**

<https://www.scopus.com/authid/detail.uri?authorId=26867550400>

Total publications: 48

H-index: (Scopus) 25

Total citations: (Scopus) 1760

### **EDITORIAL BOARD MEMBER**

British journal of pharmacology, Plos One, Journal of Neuroscience research, Frontiers in neuroscience, Embo Molecular Medicine, Molecular Cell Neuroscience, Journal of Neurochemistry, Brain Research, Mol. Neurobiology, Journal of Neuroscience, Neurotoxicology, Oncotarget, International Journal of Molecular Sciences, Toxicology and Applied Pharmacology, Environmental Pollutio, Neuropharmacology, Toxicological Sciences.

## **AWARDS**

2010-2017 Assignee of a research grant (3000 € / year) of funds for research called (University Research Fund) received by the University of Sannio.

2000 Assignee of a research grant, for Young Researchers, of L. 10,000,000 (2000), assigned on a competitive basis by the University of Naples "Federico II", to study the mechanisms of regulation of NOS enzyme isoforms after PRL treatment.

2007-2008 Fellowship Dip Neuroscience Univ Federico II.

2004 Fellowship Medical Pharmacology Specialization.

2000 Fellowship PhD Neuropharmacology.

## **ORGANIZING COMMITTEE**

- (1) 2017. Meeting of the Italian Society for Neuroscience. Ischia, Napoli (IT).
- (2) 2018. National Meeting of PhD Students in Neuroscience. Napoli (IT). 23 Febbraio.
- (3) 2019. National Meeting of PhD Students in Neuroscience. Napoli (IT). 1 Marzo

## ORAL COMUNICATIONS

- (1) Titolo della presentazione: “The transcriptional repressor REST regulates NCX1 expression in neuronal cells”. 6th International Conference on Na<sup>+</sup>/Ca<sup>2+</sup> Exchange 2011. Lacco Ameno Ischia (Italy), Ottobre 2011.
- (2) Titolo della presentazione: “Epigenetic regulation of ncx1 gene transcription by Sp3/REST/HDAC1-2 and by Sp1/HIF/p300 complex in brain ischemia”. 7th International Conference on Na<sup>+</sup>/Ca<sup>2+</sup> Exchange” Jerusalem (Israel), Novembre 2015.
- (3) Titolo della presentazione: “The family of microrna-103/107 selectively downregulates brain ncx1 its inhibition by anti-mirna ameliorates stroke damage and neurological deficits”. 7th International Conference on Na<sup>+</sup>/Ca<sup>2+</sup> Exchange” Jerusalem (Israel), Novembre 2015.
- (4) Titolo della presentazione: “DREAM/HDAC4/HDAC5 complex downregulates ncx3 gene by histone deacetylation:role of hdac class ii inhibition in brain ischemia”. Brain ischemia and stroke conference Roma (Italy), Dicembre 2016.
- (5) Chairman del simposio “Modulation of brain transcriptional regulators: in vivo plasticity and neurological diseases” e relatore della presentazione con titolo: “Transcriptional and epigenetic regulation of NCXs in brain ischemia”. 7th Mediterranean Neuroscience Society Conference Marrakech (Morocco), Giugno 2019
- (6)

**List of papers published by Formisano Luigi (PI) of an academic institute during the past 5 years**

1. Guida N. et al., and **Formisano L.** The Transcriptional Complex Sp1/KMT2A by Up-Regulating Restrictive Element 1 Silencing Transcription Factor Accelerates Methylmercury-Induced Cell Death in Motor Neuron-Like NSC34 Cells Overexpressing SOD1-G93A. *Front Neurosci.* 2021 Nov 26;15:771580.
2. Guida N. et al., and **Formisano L.** GATA3/KMT2A Complex by Increasing H3K4-3me Upregulates NCX3 Transcription and Contributes to Ischemic Preconditioning Neuroprotection. *Stroke.* 2021 Nov;52(11):3680-3691.
3. D-Aspartate treatment attenuates myelin damage and stimulates myelin repair de Rosa V, Secondo A, Pannaccione A, Ciccone R, **Formisano L**, Guida N, Crispino R, Fico A, Polishchuk R, D'Aniello A, Annunziato L, Boscia F. *EMBO Mol Med.* 2019
4. **Formisano L**, et al.,. HDAC4 and HDAC5 form a complex with DREAM that epigenetically downregulates NCX3 gene and its pharmacological inhibition reduces neuronal stroke damage. *Journal Cerebral Blood Flow and Metabolism.* 2019 Nov 7:271678X19884742.
5. Laudati G, et al., and **Formisano L.** Resveratrol treatment reduces the vulnerability of SH-SY5Y cells and cortical neurons overexpressing SOD1-G93A to Thimerosal toxicity through SIRT1/DREAM/PDYN pathway. *Neurotoxicology.* 2019 Mar;71:6-15.
6. Guida N, et al., and **Formisano L.** The miR206-JunD Circuit Mediates the Neurotoxic Effect of Methylmercury in Cortical Neurons.. *Toxicol Sci.* 2018 Jun 1;163(2):569-578.
7. Guida N, et al., and **Formisano L.** The neurotoxicant PCB-95 by increasing the neuronal transcriptional repressor REST down-regulates caspase-8 and increases Ripk1, Ripk3 and MLKL expression determining necroptotic neuronal death. *Biochemical Pharmacology* 2017 Oct 15;142:229-241.
8. Guida N, et al., and **Formisano L.** p38/Sp1/Sp4/HDAC4/BDNF axis is a novel molecular pathway of the neurotoxic effect of the Methylmercury. *Frontiers in Cellular Neuroscience* 2017 Jan 19;11:8.