

# Curriculum vitae Michele Zoli

Born in Rimini (Italy) on December 3, 1958

1976, Baccalaureate, Classical High School, Rimini, Italy.

1983, Medical Doctor, University of Modena, Modena, Italy

1986, Specialist in Endocrinology, University of Modena, Modena, Italy

## A. POSITIONS AND HONORS

### Positions and Employment

1980-1989: **Research fellow**, lab of Neurochemistry (head prof Luigi F. Agnati, Institute of Human Physiology, Univ of Modena, Italy).

1984: **Research fellow**, lab of Neurochemistry, head prof Kjell Fuxe, Karolinska Institutet, Stockholm, Sweden.

1989-1998: **Research Associate**, Dept of Biomedical Sciences, Section of Physiology, Univ of Modena, Italy.

1990-1992: **Research fellow**, lab of Molecular Neurobiology, head prof Jean-Pierre Changeux, Institut Pasteur, Paris, France.

1993-1994: **Associate Professor** (Collège de France), lab of Molecular Neurobiology, head prof Jean-Pierre Changeux, Institut Pasteur, Paris, France.

1995-1998: **Part-time Research fellow**, lab of Molecular Neurobiology, head prof Jean-Pierre Changeux, Institut Pasteur, Paris, France.

1998-2004: **Associate Professor**, Dept of Biomedical Sciences, Univ of Modena and Reggio Emilia, Italy.

2004-present: **Full Professor**, Dept of Biomedical Sciences, Univ of Modena and Reggio Emilia, Italy.

2005-2007: **Head**, Section of Physiology, Dept of Biomedical Sciences, Univ Modena and Reggio Emilia, Italy

2006-2008: **Invited Professor**, lab of Molecular and Cellular Biology, Ecole Normale Supérieure, Lyon, France

2007-2023: **Director**, Doctoral School in Neurosciences, Univ Modena and Reggio Emilia, Italy

2009-present: **Scientific Director**, Smoking Cessation Center, University Hospital of Modena

2016-2018: **Director**, Centre for Neuroscience and Neurotechnology, Univ Modena and Reggio Emilia, Italy

2016-2018: **Member**, Committee on Research, Univ Modena and Reggio Emilia, Italy

2017-present: **President** of the Scientific Committee, Fondazione Amadei-Setti for Research on Neurofibromatosis

2018-2024: **Director**, Dept. Biomedical, Metabolic and Neural Sciences, Univ Modena and Reggio Emilia, Italy

2018-2024: **Member** and **Head** of the Permanent Committee on Research of the Academic Senate, Univ Modena and Reggio Emilia, Italy

2018-2024: **Member**, board of the Italian association of full professors in Physiology

2024-present: **Dean** of the School of Medicine and Surgery

### Honors and awards

1984: Fondazione Azzolini award, for M.D., University of Modena.

1985: Fondazione Azzolini award, for M.D., University of Modena.

1985-1988: CNR-Farindustria fellowships.

1990: Del Duca Foundation fellowship.

1991: European Molecular Biology Organization fellowship.

1992: Fyssen Foundation fellowship.

1995-1997: European Community fellowships.

1999: Novartis Award of the Società Italiana di Neuroscienze

## B. TEACHING ACTIVITY

- 1993-1998, as a post-graduate fellow: seminars, practical activities, and didactic tutorship of many students in the course of Physiology of the School of Medicine.
- Since 1998, as an associate or full professor: complete courses of Cell Physiology and Human Physiology both in the School of Medicine and Surgery and in the Department of Life Sciences (basic and master degree courses of Medical Biotechnology and Biology).
- Contribution to textbooks in Cardiovascular Physiology, Renal Physiology and Neurophysiology.
- Coordinator of the Erasmus/Socrates program of the College of Biosciences and Biotechnologies, University of Modena and Reggio Emilia (2002 – 2012) and School of Medicine and Surgery (2013 - 2015).
- Head of the Doctoral School in Neurosciences, University of Modena and Reggio Emilia (2008 - 2023)
- Supervisor of about 20 master degree students and about 10 PhD students.

## C. SCIENTIFIC ACTIVITY

### Main ongoing research lines

1. Pathophysiology of neuronal nicotinic acetylcholine receptor subtypes with special reference to molecular and cellular mechanisms of nicotine dependence and neuroprotection
2. Epigenetic mechanisms of neuronal plasticity in central circuits
3. Neuroendocrine mechanisms of body weight regulation

### Techniques used

- Immunocytochemistry and classical histological techniques, quantitative receptor autoradiography, in situ hybridization
- Autoradiographic study of local cerebral blood flow and metabolism
- Computerized morphometry and microdensitometry of histological specimens
- Confocal and light sheet microscopy
- Neurochemical methods (radioreceptor binding, enzymatic and second messenger assays)
- Basic molecular biology techniques (PCR cloning, Northern blot, DNA Sequencing, real time PCR)
- Stereotaxic methods
- In vivo inactivation of specific mRNAs and microRNAs by means of shRNA, modified oligonucleotides and viral vectors
- Western blotting
- Detection of histone modifications and Chromatin immunoprecipitation
- Primary neuronal cultures
- Intracerebral microdialysis with mass-spec detection of analytes
- Metabolomics
- Behavioral analysis of rodent cognition, locomotion, anxiety, reinforcement

### Principal ongoing collaborations outside the University of Modena and Reggio Emilia

#### ITALY

Cecilia Gotti, Istituto di Neuroscienze, CNR, Milan

Fabio Benfenati, Istituto Italiano di Tecnologia, IIT, Dept Neuroscienze, Genoa

Massimo Grilli, Università di Genova, Dept Farmacia, Genoa

#### FRANCE

Laurent Schaeffer, Ecole Normale Supérieure, LBMC, Lyon

Uwe Maskos, Institut Pasteur, Paris

Clement Léna, Ecole Normale Supérieure, IBENS, Paris

Stefan Dimitrov, Institute for Advanced Biosciences, Grenoble

## BELGIUM

Alban de Kerchove, Serge Schiffmann, Université Libre de Bruxelles, Lab Neurophysiologie, Bruxelles

## GERMANY

Pierluigi Nicotera, German Center for Neurodegenerative Diseases, Bonn

## USA

Marina R Picciotto, Yale Medical School, New Haven, Dept Psychiatry

Giordano Lippi, Scripps research Center, La Jolla

### **Coordinator of the following projects:**

- UE QLK6-CT-2000-00318 "Nicotine and ageing" (2001-2004).
- Consorzio Interuniversitario Biotecnologie (1998-1999) "Synthesis and characterization *in vitro* and *in vivo* of agonists and antagonists of neuropeptide galanin".
- MIUR FIRB 2005-2006 "Function and dysfunction of neuronal nicotinic receptors involved in trophic phenomena and cognitive functions".
- MIUR FIRB 2008-2010 "Neurochemical and functional targets of central nicotinic receptors: focus on glutamatergic and dopaminergic mechanisms".
- MIUR FIRB 2011-2013 "Structure and function of the nicotinic acetylcholine receptors (nAChR) in the neural systems of positive and negative reinforcement, the mesolimbic and habenulo-interpeduncular systems"
- Italian Ministry of Health "Role of alpha6 nicotinic receptor subunit in tobacco dependence" (2011-2015)
- American Alzheimer's Association "Genetic deletion of hippocampal precursors in a transgenic model of AD" (2008-2010).
- University of Modena and Reggio Emilia Internal Grants (FAR) "MicroRNA and nicotine dependence" (2015-2017)
- University of Modena and Reggio Emilia Internal Grants (FAR) "Nanomedicine approaches to the therapy of Alzheimer's disease" (2017-2019)
- University of Modena and Reggio Emilia Internal Grants (FAR) "Effects of nicotinic acetylcholine receptors on inflammation and neuropathologies associated with COVID-19" (2021-2023)
- PRIN 2022 "A systematic analysis of neuronal activity alterations during chronic cigarette smoke and e-cigarette vapor exposure and withdrawal in the mouse"

### **Principal Investigator of the following projects**

- UE FP7 "Neurotransmitter Cys-loop receptors: structure, function and disease (NeuroCypres)" (2008-2012).
- MIUR FIRB 2000-2001 "Functional diversity of the nicotinic acetylcholine receptors in the mesolimbic dopamine pathway".
- MIUR FIRB 2002-2003 "Composition and function of neuronal nicotinic acetylcholine receptor populations involved in the modulation of the mesostriatal dopamine pathway".
- Telethon 1999-2000 "Neuroprotective effects of neuronal nicotinic acetylcholine receptors: studies on mutant mice lacking the high affinity receptor for nicotine".
- GSK Psichiatria CEDD Verona "Role of acetylcholine nicotinic receptor  $\alpha 6\beta 2$  subtype ( $\alpha 6\beta 2^*$  nAChRs) in dopamine release *in vivo*" (2006-2007).

### **Co-Principal investigator of the following projects**

- CARIPO 2003-2004 "Pharmacogenomics of nicotinic cholinergic receptors: possible implications in Alzheimer's disease".
- Fondation pour la Recherche Medicale "Epigenetics of neuronal plasticity" (2006-2009)
- CARIPO 2007-2009 "Genomic and proteomic analysis of G-protein coupled receptors: new biological targets for the diagnosis and prevention of human diseases".
- CARIPO 2007-2010 "Role of intracellular amyloid peptide  $\beta$  (A $\beta$ ) in the pathogenesis of the Alzheimer's disease: a functional and proteomic analysis".

- ERANET "Modeling human polymorphisms for nicotine addiction in mice" (2010-2013)
- University of Modena and Reggio Emilia Internal Grants (FAR) "Organic electronic devices for Parkinson's disease" (2018-2020)
- FETPROACT-2018-2020 GA n.824164 "Hybrid Enhanced Regenerative Medicine Systems – HERMES (2019-2024)

External expert for the evaluation of research groups and grants of the French Institut National de la Santé et de la Recherche Médicale (INSERM), National Research Agency (ANR), and Fondation pour la Recherche Medical (FRM), the Belgian Fonds National de la Recherche Scientifique (FNRS), the English Medical Research Council (MRC) and Wellcome Trust, and the American Alzheimer's Association.

External reviewer and member of the Final Evaluation Committee of the French ANR funding program Neurosciences and the ATIP Avenir program.

Co-inventor of the patent USA No 026,412 (1996), concerning the use of mutant mice devoid of high affinity nicotine receptors as a test to screen therapies for Parkinson's disease and nicotine dependence.

### **Publications**

Author of 325 full-length papers (240 in refereed international journals, 65 in english books, 2 in french journals and 18 in italian journals or books) with a global number of citations of about 18,500 and an H-score of 66 (Scopus).

Co-author with Professor Agnati of the books "Aspetti di neurofisiologia del dolore e dell'analgesia"(Brexin Library) and "Fisiologia e patologia dell'invecchiamento cerebrale" (Ariete Editore), contributor of the textbooks "Fisiologia cardiovascolare" (Piccin Editore), "Fisiologia dell'apparato renale" (Editrice Athena), and co-editor of the textbook "Fisiologia umana" (Poletto editore).



Modena, July 8 2025