

# Flavia Antonucci



Date: Jan 4, 1980

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## Education

**July 1998**: Scientific High school diploma at "Liceo Scientifico U. Dini", Pisa.

**November 2003**: Graduated with honours (*summa cum laude*) in Pharmaceutical Chemistry and Technology, University of Pisa.

**December 2003**: Professional qualification in Pharmacy

**December 2004-April 2008**: PhD in Developmental Neuroscience. University of Pisa. Supervisors: Dr. Matteo Caleo and Dr. Yuri Bozzi.

**October 2008**: Post-doctoral fellow at University of Milan. Head of the lab: Prof. Michela Matteoli.

**July 2012 (present)**: Researcher at University of Milan.

## Teaching Activity :

2012 – present Course of Pharmacology, University of Milan/ Country Italy (CFU=4)

## Scientific Activity and Interest:

Since many years, I am interested in identifying cellular changes associated to neurological and psychiatric diseases produced by altered excitatory/inhibitory balance. I started my research activity assessing the potential therapeutic effects of Botulinum Neurotoxins (BoNTs) in neurological conditions such as epilepsy and ischemia (Antonucci et al 2008, Journal of Neuroscience; Antonucci et al 2008, Experimental Neurology; Antonucci et al 2009, Epilepsia; Antonucci et al 2010, Neuroscience). I also characterized, in collaboration with Tibor Harkany and Wolfgang Hartig, functional consequences associated to the selective elimination of GABAergic interneurons through the delivery of the saporin-conjugated anti-vesicular GABA transporter antibody (SAVA) (Antonucci et al 2012, Journal of Neuroscience). In a parallel study, I defined the role of microglia-derived microvesicles in altering neuronal communication (Antonucci et al 2012, EMBO Journal) and I also evaluated electrophysiological alterations occurred in neurons obtained by SNAP-25<sup>-/-</sup> mice, where the SNAP25 gene has been associated with Attention Deficit Hyperactivity Disorder (ADHD) and schizophrenia (Antonucci et al. 2013, EMBO Rep).

Recently, I and my group demonstrated a new role of ATM protein in the control of neuronal development showing that its deficiency is associated to an higher inhibition (Pizzamiglio et al, 2016). These results highlight ATM as a new key protein able to modulate the neuronal excitatory/inhibitory balance.

My main expertise consists in the *in vivo* and *in vitro* electrophysiology associated to behavioral, biochemical and histological techniques.

## Awards

- Winner of the "SIF Prize 2016" awarded by the Italian Society of Physiology.
- With regard to the paper: "Antonucci et al., EMBO Rep 2013", was published a "Hot off the Press" by Gaga Kochlamazashvili & Volker Haucke (EMBO Rep. 2013).
- With regard to work, "Antonucci et al, Journal of Neuroscience 2008", were published:

**Article in brief in the journal "Neurology today"** entitled: Study Finds Botulinum Toxin Spreads to CNS Tissue in Mice By Jamie Talan.

-1 **MEDICAL NEWS & PERSPECTIVES of JAMA** entitled: Studies, Reports Say Botulinum Toxins May Have Effects Beyond Injection Site Bridget M. Kuehn.

- 1 **News of the journal NATURE** entitled: Botox toxin gets into rat brains - Botulinum can travel along nerves and degrade proteins in the brain stem. Kerri Smith.
- **Scholarship Award of the University of Pisa** used to improve experimental approaches at the "Life & Brain"
- University of Bonn - Germany; period: 09 / 2007-12 / 2007

### **Grant (received as principal investigator)**

- Telethon Research Project 2016 (n. GGP16015): "Excitatory/ inhibitory unbalance in ataxia telangiectasia and perspectives for therapeutic interventions".
- Italian Ministry of Health **FIRB – FUTURO IN RICERCA 2010/11** – Title of the project: "Molecular determinant of neuronal excitability: role of presynaptic proteins in epilepsy".

### **Editorial Board Activity**

2012-present: Member of the Editorial Board of Biomed Research International

### **Reviewer activity for peer reviewed scientific journals:**

Reviewer (ad hoc) for:

Biomed Research International - Neurochemistry International - Neuroscience - Amino acid - Neuronal plasticity

### **Organization of Scientific Meeting/Seminars**

2014- 2015 and 2015- 2016 :

Co-organiser of inter-disciplinary Seminars at University of Milan: BIOMETRA SEMINARS 2014-2015: "New perspectives and new techniques in medical biotechnologies", University of Milan/ Italy

2015 – 2016

Co-organizer of scientific workshops for the Neuroscience Group – NEURONEST – University of Milan.

### **Major Collaborators**

Tibor Harkany (Center for Brain Research, Medical University of Vienna – full Professor)

Wolfgang Härtig (Cell Biology, Developmental Biology, University of Leipzig - full Professor)

Alberto Bacci (Institut du Cerveau et Moelle Epiniere, Paris - Researcher)

Michela Matteoli (Istituto Clinico Humanitas, Milan - full Professor)

Matteo Caleo (C.N.R., Institute of Neuroscience, Pisa - Researcher)

### **Patent**

Costantin L., Bozzi Y., Richichi C., Viegi A., **Antonucci F.**, Funicello, M., Gobbi M., Mennini T., Rossetto O., Montecucco C., Maffei L., Vezzani A., Caleo M. (2005). "*Method and composition for the delivery of a botulinum neurotoxin for the prevention and treatment of epileptic seizures*". United States Patent Office n. 11/324,056, patent pending.

**Original Articles: 28**

**h-index: 12**

**Total citation: 560**

**Speaker in Scientific talks : 10**