

Giulia Ponterio



Personal Informations

Date of birth: 22/06/1984, Rome

Nationality: Italian

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Education and training

A.A. 2010/2011 - A.A. 2012/2013 Neuroscience Course (XXVI cycle), Faculty of Medicine and Surgery, University of Rome “Tor Vergata”. Title achieved: PhD in Neuroscience, 07/02/2014.

2012 Professional biologist qualification. Enrolled in the National Biology Order (ONB)

A.A. 2007/2008 - A.A. 2008/2009, Faculty of Medicine and Surgery, University of Rome “Tor Vergata”. Title achieved: Master Degree in Medical Biotechnology, 11/05/2010. Graduation vote: 110/110 *cum laude*.

A.A. 2003/2004 - A.A. 2006/2007, Faculty of Physical and Natural Mathematical Sciences, University of Rome “Tor Vergata”. Title achieved: Bachelor Degree in Biotechnology, 19/07/2007.

A.A. 1998/1999 – A.A. 2002/2003 Classical High school, “Pilo Albertelli” Rome. Title achieved: diploma, 09/07/2003.

Work experience

Current position: SSD BIO-12/A (RTDa, L.240/2010) International Medical University Unicamillus, Rome

Apr 2024-Sept 2024 Biologist Collaborator Policlinico Umberto I, Rome, Italy

Mar 2024- Mar 2024 Professor secondary school, Ministero della Pubblica Istruzione

2014- Apr 2024: Postdoctoral Researcher, Fondazione Santa Lucia, Rome, Italy; Study of neurophysiological alterations underlie movement and neurodevelopmental disorders through the study of the disease-associated pathological processes in the animal model.

Feb 2013- Mar 2013 Institut des Maladies Neurodegeneratives, Université Bordeaux 2, Bordeaux, Francia. Acquired technique: Co-immunoprecipitation (pull-down) European Project *GRANT COST Short Scientific Missions*.

Sep 2008 – Apr 2010 Department of Neuroscience, Faculty of Medicine and Surgery, University of Rome “Tor Vergata”, Lab of Immunotechnology. Training for Master Degree in Medical Biotechnology. Acquired techniques: protein extraction and quantification, Western Blotting, ELISA, PCR, DNA fingerprinting, molecular cloning, DNA extraction and purification, protein extraction

from bacteria, cell culture, transfection and immunofluorescence, phage display and phage-ELISA techniques.

May 2007- Jul 2007 Lab of Cellular Biology, Faculty of Physical and Natural Mathematical Sciences, University of Rome "Tor Vergata". Training for Bachelor Degree in Biotechnology. (object of study: autophagy).

Positions, Scientific Appointments and Honors

PNRR-MRI-2022-12376284 "Mechanism of synaptic dysfunction in movement disorders and epilepsy" Grant financing disbursed in compliance with Mission 6/component 2/Investment: 2.1 "Enhancing and strengthening biomedical research of NHS", financed by the European Union - NextGeneration EU Under 40

AA 2021-2022 Professor on contract Human Anatomy (BIO/16) Cdl Dentistry and Dental Prosthodontics International Medical University Unicamillus, Rome

AA 2022-2023 and AA2023-2024 Professor on contract Human Anatomy (BIO/16) Cdl Midwifery International Medical University Unicamillus, Rome

2019 – 2020: Postdoctoral Fellowship University of Rome Tor Vergata, Rome, Italy

2018-2019: Postdoctoral Fellowship University of Rome Tor Vergata, Rome, Italy

2016-2017: Postdoctoral Fellowship, University of Rome Tor Vergata, Rome, Italy

2014 – 2016: Postdoctoral Fellowship University of Rome Tor Vergata, Rome, Italy

2013-2013: Fellow Fondazione Santa Lucia IRCCS, Rome, Italy

2013-2013: Predoctoral Fellow Université Bordeaux 2, Istitute des Maladies Neurodegenerative, Bordeaux, France

2011-2012: Predoctoral Fellow University of Rome Tor Vergata, Rome, Italy

Honors

-2010 Graduation in in Medical Biotechnology with Honors, University of Rome Tor Vergata

-2012 Travel Grant Dystonia Summer School Bol, Croazia

-2013 Stipend Grant Short Term Scientific Mission, COST Dystonia European Network, Bordeaux, France

-2016 Travel Grant SINS, FENS Forum Copenhagen, Denmark

-2019 Travel Grant SINS, Perugia, Italy

Other experience and Professional Membership

- Editorial activity:

Editor reviewer Frontiers Molecular Neuroscience

- Member of SINS

-Speaker and Poster Presenter in the International and National Congress (SINS, FENS, SfN)

- 7th Biennial Workshop on Dystonia and Parkinson's disease: Cellular and Molecular Targets for novel therapeutics
Rome "LOCAL ORGANIZING COMMITTEE"

- "Biotechnologie avanzate e sicurezza nella ricerca preclinica" Biotech safety
Rome Scientific Committee

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Publications

1. Tassone A, Meringolo M, **Ponterio G**, Bonsi P, Schirinzi T, Martella G. Mitochondrial Bioenergy in Neurodegenerative Disease: Huntington and Parkinson. *Int J Mol Sci.* 2023;24(8):7221.
2. El Atiallah I*, **Ponterio G***, Meringolo M, Martella G, Sciamanna G, Tassone A, Montanari M, Mancini M, Castagno AN, Yu-Taeger L, Nguyen HHP, Bonsi P, Pisani A. Loss-of-function of GNAL dystonia gene impairs striatal dopamine receptors-mediated adenylyl cyclase/ cyclic AMP signaling pathway. *Neurobiology of disease* 2024; 191:106403
3. El Atiallah I, Bonsi P, Tassone A, Martella G, Biella G, Castagno AN, Pisani A, **Ponterio G**. Synaptic dysfunction in dystonia: update from experimental models. *Current Neuropharmacology* 2023; *in press*
4. **Ponterio G**, Faustini G, El Atiallah I, Sciamanna G, Meringolo M, Tassone A, Imbriani P, Cerri S, Martella G, Bonsi P, Bellucci A, Pisani A. Alpha-Synuclein is Involved in DYT1 Dystonia Striatal Synaptic Dysfunction. *Mov Disord.* 2022;37(5):949-961.
5. Sciamanna G*, **Ponterio G***, Tassone A, Maltese M, Madeo G, Martella G, Poli S, Schirinzi T, Bonsi P, Pisani A. Negative allosteric modulation of mGlu5 receptor rescues striatal D2 dopamine receptor dysfunction in rodent models of DYT1 dystonia. *Neuropharmacology.* 2014; 85:440-50
6. Maltese M, Martella G, Madeo G, Fagiolo I, Tassone A, **Ponterio G**, Sciamanna G, Burbaud P, Conn PJ, Bonsi P, Pisani A. Anticholinergic drugs rescue synaptic plasticity in DYT1 dystonia: role of M1 muscarinic receptors. *Mov Disord.* 2014;29(13):1655-65
7. Martella G, Maltese M, Nisticò R, Schirinzi T, Madeo G, Sciamanna G, **Ponterio G**, Tassone A, Mandolesi G, Vanni V, Pignatelli M, Bonsi P, Pisani A. Regional specificity of synaptic plasticity deficits in a knock-in mouse model of DYT1 dystonia. *Neurobiol Dis.* 2014; 65:124-32
8. Vanni V, Puglisi F, Bonsi P, **Ponterio G**, Maltese M, Pisani A, Mandolesi G. Cerebellar synaptogenesis is compromised in mouse models of DYT1 dystonia. *Exp Neurol.* 2015; 271:457-67.
9. Sciamanna G, **Ponterio G**, Mandolesi G, Bonsi P, Pisani A. Optogenetic stimulation reveals distinct modulatory properties of thalamostriatal vs corticostriatal glutamatergic inputs to fast-spiking interneurons. *Sci Rep.* 2015; 5:16742
10. Sciamanna G, Napolitano F, Pelosi B, Bonsi P, Vitucci D, Nuzzo T, Punzo D, Ghiglieri V, **Ponterio G**, Pasqualetti M, Pisani A, Usiello A. Rhes regulates dopamine D2 receptor transmission in striatal cholinergic interneurons. *Neurobiol Dis.* 2015; 78:146-61

11. Maltese M, Martella G, Imbriani P, Schuermans J, Billion K, Sciamanna G, Farook F, **Ponterio G**, Tassone A, Santoro M, Bonsi P, Pisani A, Goodchild RE. Abnormal striatal plasticity in a DYT11/SGCE myoclonus dystonia mouse model is reversed by adenosine A2A receptor inhibition. *Neurobiol Dis.* 2017; 108:128-139.
12. Maltese M, Stanic J, Tassone A, Sciamanna G, **Ponterio G**, Vanni V, Martella G, Imbriani P, Bonsi P, Mercuri NB, Gardoni F, Pisani A. Early structural and functional plasticity alterations in a susceptibility period of DYT1 dystonia mouse striatum. *Elife.* 2018;7: e33331.
13. **Ponterio G**, Tassone A, Sciamanna G, Vanni V, Meringolo M, Santoro M, Mercuri NB, Bonsi P, Pisani A. Enhanced mu opioid receptor-dependent opioidergic modulation of striatal cholinergic transmission in DYT1 dystonia. *Mov Disord.* 2018;33(2):310-320
14. Meringolo M, Tassone A, Imbriani P, **Ponterio G**, Pisani A. Dystonia: Are animal models relevant in therapeutics? *Rev Neurol (Paris).* 2018;174(9):608-614
15. Bonsi P, **Ponterio G**, Vanni V, Tassone A, Sciamanna G, Migliarini S, Martella G, Meringolo M, Dehay B, Doudnikoff E, Zachariou V, Goodchild RE, Mercuri NB, D'Amelio M, Pasqualetti M, Bezard E, Pisani A. RGS9-2 rescues dopamine D2 receptor levels and signaling in DYT1 dystonia mouse models. *EMBO Mol Med.* 2019;11(1): e9283
16. Imbriani P, Tassone A, Meringolo M, **Ponterio G**, Madeo G, Pisani A, Bonsi P, Martella G. Loss of Non-Apoptotic Role of Caspase-3 in the PINK1 Mouse Model of Parkinson's Disease. *Int J Mol Sci.* 2019; 20(14):3407
17. Imbriani P, **Ponterio G**, Tassone A, Sciamanna G, El Atiallah I, Bonsi P, Pisani A. Models of dystonia: an update. *J Neurosci Methods.* 2020, 1;339:108728
18. Yu-Taeger L, Ott T, Bonsi P, Tomczak C, Wassouf Z, Martella G, Sciamanna G, Imbriani P, **Ponterio G**, Tassone A, Schulze-Hentrich JM, Goodchild R, Riess O, Pisani A, Grundmann-Hauser K, Nguyen HP. Impaired dopamine- and adenosine-mediated signaling and plasticity in a novel rodent model for DYT25 dystonia. *Neurobiol Dis.* 2020; 134:104634
19. Sciamanna G, **Ponterio G**, Vanni V, Laricchiuta D, Martella G, Bonsi P, Meringolo M, Tassone A, Mercuri NB, Pisani A. Optogenetic Activation of Striatopallidal Neurons Reveals Altered HCN Gating in DYT1 Dystonia. *Cell Rep.* 2020, 19;31(7):107644.
20. Tassone A, Martella G, Meringolo M, Vanni V, Sciamanna G, **Ponterio G**, Imbriani P, Bonsi P, Pisani A. Vesicular Acetylcholine Transporter Alters Cholinergic Tone and Synaptic Plasticity in DYT1 Dystonia. *Mov Disord.* 2021;36(12):2768-2779
21. Cheng F, Zheng W, Barbuti PA, Bonsi P, Liu C, Casadei N, **Ponterio G**, Meringolo M, Admard J, Dording CM, Yu-Taeger L, Nguyen HP, Grundmann-Hauser K, Ott T, Houlden H, Pisani A, Krüger R, Riess O. DYT6 mutated THAP1 is a cell type dependent regulator of the SP1 family. *Brain.* 2022: awac001.
22. Bonsi P, Cuomo D, Martella G, Madeo G, Schirinzi T, Puglisi F, **Ponterio G**, Pisani A. Centrality of striatal cholinergic transmission in Basal Ganglia function. *Front Neuroanat.* 2011; 5:6.
23. Sciamanna G, Tassone A, Martella G, Mandolesi G, Puglisi F, Cuomo D, Madeo G, **Ponterio G**, Standaert DG, Bonsi P, Pisani A. Developmental profile of the aberrant dopamine D2 receptor response in striatal cholinergic interneurons in DYT1 dystonia. *PLoS One.* 2011;6(9): e24261
24. Tassone A, Madeo G, Schirinzi T, Vita D, Puglisi F, **Ponterio G**, Borsini F, Pisani A, Bonsi P. Activation of 5-HT6 receptors inhibits corticostriatal glutamatergic transmission. *Neuropharmacology.* 2011;61(4):632-7
25. **Ponterio G**, Schirinzi T, Alemseged F, Maltese M, Pisani A. How relevant is the cholinergic system in DYT1 dystonia? *Basal Ganglia Book*; 2012, Vol 2: 227-230
26. Madeo G, Martella G, Schirinzi T, **Ponterio G**, Shen J, Bonsi P, Pisani A. Aberrant striatal synaptic plasticity in monogenic parkinsonisms. *Neuroscience.* 2012; 211:126-35
27. Sciamanna G, Tassone A, Mandolesi G, Puglisi F, **Ponterio G**, Martella G, Madeo G, Bernardi G, Standaert DG, Bonsi P, Pisani A. Cholinergic dysfunction alters synaptic

- integration between thalamostriatal and corticostriatal inputs in DYT1 dystonia. *J Neurosci.* 2012;32(35):11991-2004
28. Puglisi F, Vanni V, **Ponterio G**, Tassone A, Sciamanna G, Bonsi P, Pisani A, Mandolesi G. Torsin A Localization in the Mouse Cerebellar Synaptic Circuitry. *PLoS One.* 2013;8(6): e68063
29. **Ponterio G**, Tassone A, Sciamanna G, Riahi E, Vanni V, Bonsi P, Pisani A. Powerful inhibitory action of mu opioid receptors (MOR) on cholinergic interneuron excitability in the dorsal striatum. *Neuropharmacology.* 2013; 75:78-85

Additional Informations

- Certificate of attendance: “Science of Animal Laboratory ”accredited FELASA, “Access to the Use of Animal Facilities”, “Aliens in Animal Experimentation: Using Cephalopods in Experimentation”, Workshop “Zebrafish: a Promising Model in Neuroscience”, Training course for handling liquid nitrogen.

Personal skills and competences

Mother tongue: Italian

English language: Understanding reading C1, understanding listening C1, spoken production and interaction C1, Writing C1.

- Windows operating system, Microsoft Office (Word, Power Point, Excel), Corel Draw, Adobe Photoshop, Adobe Reader, Prism Graph Pad, Image J, Gpower
- Driving licence B
- Boat licence (12 miles)

In compliance with the Italian legislative Decree no. 196 dated 30/06/2003 and Regolamento UE 2016/679, I hereby authorize you to use and process my personal details contained in this document.

Rome, 30/09/2024

Giulio Pontorio