

## PERSONAL INFORMATION

Giulia Ponterio, PhD



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## Work Experience

- Current position: Researcher collaborator at Laboratory of Neurophysiology and plasticity, Fondazione Santa Lucia IRCCS, Rome  
Field and Object of Research: Neurophysiology of basal ganglia; Study of the pathophysiological alterations underlie movement disorders, particularly Parkinson's disease and dystonia
- 2018-2020-2014-2016: Post-doc fellowship University of Rome TorVergata  
Department of Systems Medicine, Rome.
- Feb 2013- Mar 2013 Institut des Maladies Neurodegeneratives, Université Bordeaux 2, Bordeaux, Francia. European Project *GRANT COST Short Scientific Missions*.
- Sep 2008 – Apr 2010 Dep of Neuroscience, Faculty of Medicine and Surgery, University of Rome “Tor Vergata”, Lab of Immunotechnology. Training for Master Degree in Medical Biotechnology.
- 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.

## Education

- 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.

## Publications

1. Tassone A, Martella G, Meringolo M, Vanni V, Sciamanna G, **Ponterio G** et al (2021) Vesicular Acetylcholine Transporter Alters Cholinergic Tone and Synaptic Plasticity in DYT1 Dystonia *Mov disord.* doi: 10.1002/mds.28698. Online ahead of print.
2. Maltese M, Martella G, Imbriani P, Schuermans J, Billion K, Sciamanna G, Farook F, **Ponterio G** et al. (2017). Abnormal striatal plasticity in a DYT11/SGCE myoclonus dystonia mouse model is reversed by adenosine A2A receptor inhibition. *Neurobiol Dis.*
3. Imbriani P, **Ponterio G** et al (2020) Models of dystonia: an update *J Neurosci Methods* 339:108728
4. Meringolo M, Tassone A, Imbriani P, **Ponterio G**, Pisani A (2018) Dystonia: Are animal models relevant in therapeutics? *Rev Neurol (Paris)*;174(9)
5. Sciamanna G, **Ponterio G** et al (2020). Optogenetic Activation of Striatopallidal Neurons Reveals Altered HCN Gating in DYT1 Dystonia *Cell Rep* 31(7):107644.
6. Bonsi P, **Ponterio G** et al. (2019) RGS9-2 rescues dopamine D2 receptor levels and signaling in DYT1 dystonia mouse models. *EMBO Mol Med.*;11(1):e9283
7. Yu-Taeger L, Ott T, Bonsi P, Tomczak C, Wassouf Z, Martella G, Sciamanna G, Imbriani P, **Ponterio G**, et al (2019) Impaired dopamine- and adenosine-mediated signaling and plasticity in a novel rodent model for DYT25 dystonia. *Neurobiol Dis.*;134:104634
8. Imbriani P, Tassone A, Meringolo M, **Ponterio G**, et al (2019). Loss of Non-Apoptotic Role of Caspase-3 in the PINK1 Mouse Model of Parkinson's Disease. *Int J Mol Sci.*;20(14):3407.
9. Imbriani P, **Ponterio G**, et al (2020) Models of dystonia: an update. *J Neurosci Methods.*;339:108728.
10. Maltese M, Stanic J, Tassone A, Sciamanna G, **Ponterio G**, et al (2018) Early structural and functional plasticity alterations in a susceptibility period of DYT1 dystonia mouse striatum. *Elife* 7:e33331
11. **Ponterio G**. et al (2017) Enhanced MOR-dependent opioidergic modulation of striatal cholinergic transmission in DYT1 dystonia. *Mov Disord.* doi: 10.1002/mds.27212.
12. Sciamanna G, **Ponterio G**, et al (2015) Optogenetic stimulation reveals distinct

- modulatory properties of thalamostriatal vs corticostriatal glutamatergic inputs to fast-spiking interneurons” *Sci. Reports.* 5:16742.
13. Vanni V, Puglisi F, Bonsi P, **Ponterio G**, et al (2015). Cerebellar synaptogenesis is compromised in mouse models of DYT1. *Exp. Neurol.* 271: 457-467.
  14. Sciamanna G, Napolitano F, Pelosi B, Bonsi P, Vitucci D, Buono P, Nuzzo T, Punzo D, Ghiglieri V, **Ponterio G**, et al (2015). Rhes regulates dopamine D2 receptor transmission in striatal cholinergic interneurons. *Neurobiol Dis.*; 78:146-61
  15. Maltese M, Martella G, Madeo G, Fagiolo I, Tassone A, **Ponterio G**, et al (2014). Anticholinergic drugs rescue synaptic plasticity in DYT1 dystonia: Role of M1 muscarinic receptors. *Mov Disord.*; 29(13): 1655-65
  16. Sciamanna G\*, **Ponterio G\*** et al (2014) Negative allosteric modulation of mGlu5 receptor rescues striatal D2 dopamine receptor dysfunction in rodent models of DYT1 dystonia. *Neuropharmacology*; 85:440-50
  17. Martella G, Maltese M, Nisticò R, Schirinzi T, Madeo G, Sciamanna G, **Ponterio G** et al (2014). Regional specificity of synaptic plasticity deficits in a knock-in mouse model of DYT1 dystonia. *Neurobiol Dis.*; 65:124-32
  18. **Ponterio G**, et al (2013). Powerful inhibitory action of mu opioid receptors (MOR) on cholinergic interneuron excitability in the dorsal striatum. *Neuropharmacology*; 75:78-85
  19. Puglisi F, Vanni V, **Ponterio G** et al (2013). “TorsinA localization in the mouse cerebellar synaptic circuitry” *PloS One*; 8(6):e68063.
  20. Sciamanna G, Tassone A, Mandolesi G, Puglisi F, **Ponterio G**, et al (2012). Cholinergic dysfunction alters synaptic integration between thalamostriatal and corticostriatal inputs in DYT1 dystonia. *J Neurosci.*; 32(35):11991-2004.
  21. Madeo G, Martella G, Schirinzi T, **Ponterio G**, et al (2012). Aberrant striatal synaptic plasticità in monogenic parkinsonism. *Neuroscience*; 211:126-35.
  22. **Ponterio G**, et al (2012). How relevant is the role of cholinergic system in DYT1 dystonia? *Basal Ganglia*; 2:227-230
  23. Sciamanna G, Tassone A, Martella G, Mandolesi G, Puglisi F, Cuomo D, Madeo G, **Ponterio G**, et al (2011). Developmental profile of the aberrant dopamine D2 receptor response in striatal cholinergic interneurons in DYT1 dystonia. *Plos One*, 6(9):e24261.
  24. Tassone A, Madeo G, Schirinzi T, Vita D, Puglisi F, **Ponterio G**, et al (2011) Activation of 5-HT6 receptor inhibits spontaneous glutamatergic transmission. *Neuropharmacology*, 61(4):632-7
  25. Bonsi P, Cuomo D, Martella G, Madeo G, Schirinzi T, Puglisi G, **Ponterio G** and Pisani A (2011). Centrality of striatal cholinergic transmission in basal ganglia

function. *Frontiers in Neuroanatomy*, Vol. 5 Article 6.

### Additional Informations

- Communication to congress: “Characterization of TorsinA in cerebellar synaptic circuitry in a mouse model of DYT1 dystonia” *VIII IBRO World Congress of Neuroscience* (Florence, 2011). “Alterations of the functional interplay between striatal dopamine D2 receptor and RGS9-2 in movement disorders” *Neuroscience* (Washington, 2014) “Cerebellar synaptogenesis is compromised in mouse models of DYT1 Dystonia” *FENS* (Milan 2014). Participation to congress: *Dystonia Meeting* (Rome, 2011, 2013, 2015, 2017, 2019), *Dystonia Training School* (Bol, 2012). Poster presenter: “Powerful inhibitory action of mu opioid receptor (MOR) on cholinergic interneuron excitability in the dorsal striatum” *SINS* (Rome, 2013) and *Neuroscience* (SanDiego 2013); “Negative allosteric modulation of metabotropic glutamate receptor 5 rescues abnormal D2 dopamine receptor responses in a mouse models of DYT1 dystonia” *FENS* (Milan 2014), poster and oral presentation *FENS Summer School* (Bertinoro, 2015). Poster presenter: “Enhancement of mu opioid receptor-mediated transmission in a mouse model of DYT1 dystonia” *FENS* (Travel Grant SINS, Copenaghen 2016); *Workshop on Dystonia*, Rome 2017, Travel Grant *SINS Perugia* 2019).
- Certificate of attendance: “Science of Animal Laboratory "accredited FELASA, “Access to the Use of Animal Facilities”, “Aliens in Animal Experimentation: Using Cephalopods in Experimentation”, “Zebrafish: a Promising Model in Neuroscience”, Training course for handling liquid nitrogen.
- Member of the Italian Society of Neurosciences (SINS); Review Editor for *Frontiers In Molecular Neuroscience*

### Personal skills and competences

Mother tongue: Italian; English language: excellent knowledge oral and written; 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)

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