Curriculum Vitae - Francesca TALPO

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EDUCATION

- **February 11, 2013 - PhD degree in Physiology and Neuroscience**
  University of Pavia, Pavia, Italy. Supervisor: Prof. Toselli
  Thesis: *Electrophysiological analysis of the role of Rac1 and Rac3 in the development of the hippocampal circuit*
- **September 14, 2009 - M.Sc. degree in Neurobiology, with honors**
  University of Pavia, Pavia, Italy. Supervisor: Prof. Biella
  Thesis: *Effect of the muscarinic modulation on GABAergic interneurons of the mouse perirhinal cortex*
- **July 27, 2007 - B.Sc. degree in Biotechnology, with honors**
  University of Pavia, Pavia, Italy. Supervisor: Prof. Montagna
  Thesis: *Analysis of hematopoietic reconstitution in a pediatric patient undergoing allogeneic transplantation of stem cells obtained from two umbilical cord blood units, one of which propagated ex vivo*

CURRENT POSITION

- **October 2022 to date: Tenure-track Assistant Professor (RTD-B) in Physiology**
  (S.S.D. BIO/09 Fisiologia – S.C. 05/D1 Fisiologia)
  Dept. of Biology and Biotechnology "L. Spallanzani", University of Pavia (IT)

PREVIOUS POSITIONS

- **February 2022 to date: Non-tenure-track Assistant Professor (RTD-A) in Physiology**
  (S.S.D. BIO/09 Fisiologia – S.C. 05/D1 Fisiologia)
  Dept. of Biology and Biotechnology "L. Spallanzani", University of Pavia (IT)
- **April 2020 to January 2022: Postdoctoral Assistant**
  (granted by "Fondazione Umberto Veronesi" competitive fellowships)
  Dept. Biology and Biotechnology "L. Spallanzani", University of Pavia (IT)
- **October 2017 to March 2020: Postdoctoral Assistant**
  (granted by "Fondo Ricerca Giovani" competitive fellowship)
  Dept. Biology and Biotechnology "L. Spallanzani", University of Pavia (IT)
- **September 2016 – May 2017: Postdoctoral Assistant**
  School of Medicine – Dept. Neuroscience, Yale University (CT - USA)
  Principal Investigator: Nenad Sestan
- **May 2015 – August 2016: Postdoctoral Assistant**
  School of Medicine and Surgery, University of Milano-Bicocca (IT)
  Principal Investigator: Giulio Sancini

- **March 2013 – April 2015: Postdoctoral Assistant**
  Dept. Biology and Biotechnology "L. Spallanzani", University of Pavia (IT)
  Principal Investigator: Gerardo Biella
- **November 2009 – February 2013: PhD student**
  Dept. Biology and Biotechnology "L. Spallanzani", University of Pavia (IT)
  Principal Investigator: Mauro Toselli

HONORS, GRANTS, AND AWARDS

- **From April 2021 to January 2022 – Fondazione Umberto Veronesi Competitive Postdoctoral Fellowship**
  Coordination of the project "Selective effect of ADAM10 inhibition on different populations of striatal cells in Huntington's Disease transgenic mice".
- **From April 2020 to March 2021 – Fondazione Umberto Veronesi Competitive Postdoctoral Fellowship**
  Coordination of the project "Identifying interindividual impairments in the striatal cells of a mouse model of Huntington's Disease".
- **September 2017 to date – Science Crowdfunding and Outreach**
  Crowdfunding campaign "The cure within a cell" hosted by "Universitiamo", the University Crowdfunding Platform by UNIPV.
- **From January 2018 to March 2020 - Fondo Ricerca Giovani Competitive Postdoctoral Fellowship, University of Pavia**
  Coordination of the project "Dissecting the impairment of cortical inputs towards striatum in a mouse model of Huntington's Disease".

MEMBERSHIP IN SOCIETIES

2017 to date – The Italian Society of Physiology (SIF)

2021 to date – Italian Society for Neuroscience (SINS)

EDITORIAL ACTIVITIES

- **Guest Associate Editor** for Frontiers in Molecular Neuroscience(Edited Research Topics: "Oxytocin in brain health and disease: how can it exert such pleiotropic neuromodulatory effects?")
- **Reviewer** for Frontiers in Neuroscience (section Neurodegeneration); Brain Sciences; Archives Italiennes de Biologie (topic: neuroscience)

OUTREACH AND MEDIA COVERAGE

- **Disseminative seminars, events, and informative desks** for non-specialist public and college students as part of the initiatives *Sharper – European Researchers' Night* (editions: 2018, 2019, 2020, 2021, 2022), *Researchers in the classroom* by Fondazione Umberto Veronesi (editions: 2020 and 2021), *crowdfunding campaign "The cure within a cell"* (2017-2019)
- **Disseminative newspaper articles and interviews** for major Italian press agencies (ANSA, Adnkronos), newspapers (La Repubblica, Corriere della Sera, Il Sole 24 Ore, Il Messaggero, Il Mattino, Gazzetta di Parma, La Provincia Pavese), radios (Radio2, Radio3Scienza), and TVs (RAI Scuola) about papers I co-authored (Vrselja et al., 2019; Onorati et al., 2014) and the crowdfunding campaign "The cure within a cell".

RESEARCH FOCUS IN BIOMEDICAL SCIENTIFIC RESEARCH

Electrophysiological patch-clamp recordings on brain slices of mice/rats and on cell cultures aimed to investigate:
1. Abnormal function of striatal cells in mouse models of Huntington's disease;
2. Stem and fetal cells functional differentiation into mature neurons;
3. Role of the Rac proteins in the brain: epilepsy and anomalies caused by the absence of Rac proteins in the hippocampus and neocortex;
4. Muscarinic modulation of the perirhinal cortex (PRC) and resonance properties of the PRC neurons;
5. Oxytocinergic modulation of the hippocampal cells;
6. Recordings on cortical cells in vitro and ex vivo on different animal models (mice, pigs, monkeys) for evolutionary and neurodevelopmental studies.

SCIENTIFIC PUBLICATIONS

Author (https://orcid.org/0000-0003-3393-4451) of **14 peer-reviewed publications** on international scientific journals and of **3 peer-reviewed conference papers** and **48 communications** at national and international congresses/schools (11 Invited Presentations; 5 Oral Communications; 32 Posters).

h-index Scopus: 9 (October 2022)
Total citations Scopus: 432 (October 2022)

Selected papers:

1) Binini N*, Talpo F*+, Spaiardi P, Maniezzi C, Pedrazzoli M, Raffin F, Mattiello N, Castagno AN, Masetto S, Yanagawa Y, Dickson CT, Ramat S, Toselli M, Biella GR+ (2021). Membrane Resonance in Pyramidal and GABAergic Neurons of the Mouse Perirhinal Cortex. Front Cell Neurosci, 15:703407.
*** co-first authors**
+ co-corresponding authors

2) Birolini G, Verlengia G, Talpo F, Maniezzi C, Zentilin L, Giacca M, Conforti P, Cordiglieri C, Caccia C, Leoni V, Taroni F, Biella G, Simonato M, Cattaneo E, Valenza M. (2021). SREBP2 gene therapy targeting striatal astrocytes ameliorates Huntington's disease phenotypes. Brain, 144 (10): 3175–90.

3) Maniezzi C*, Talpo F*, Spaiardi P, Toselli M, Biella G (2019). Oxytocin Increases Phasic and Tonic GABAergic Transmission in CA1 Region of Mouse Hippocampus. Front Cell Neurosci, 13:178.
***co-first authors**

4) Vezzoli E, Caron I, Talpo F, Besusso D, Conforti P, Battaglia E, Sogne E, Falqui A, Petricca L, Verani M, Martufi P, Caricasole A, Bresciani A, Cecchetti O, Rivetti di Val Cervo P, Sancini G, Riess O, Nguyen H, Seipold L, Saftig P, Biella G, Cattaneo E, Zuccato C (2019). Inhibiting pathologically active ADAM10 rescues synaptic and cognitive decline in Huntington's disease. J Clin Invest, 130:2390-403.

5) Vrselja Z, Daniele SG, Silbereis J, Talpo F, Morozov YM, Sousa AMM, Tanaka BS, Skarica M, Pletikos M, Kaur N, Zhuang ZW, Liu Z, Alkawadri R, Sinusas AJ, Latham SR, Waxman SG, Sestan N (2019). Restoration of brain circulation and cellular functions hours post-mortem. Nature, 568(7752):336-43.

6) Dell'Anno MT, Wang X, Onorati M, Li M, Talpo F, Sekine Y, Ma S, Liu F, Cafferty WBJ, Sestan N, Strittmatter SM (2018). Human neuroepithelial stem cell regional specificity enables spinal cord repair through a relay circuit. Nat Commun, 9(1):3419.

7) Pennucci R*, Talpo F*, Astro V, Montinaro V, Morè L, Cursi M, Castoldi V, Chiaretti S, Bianchi V, Marenna S, Cambiaghi M, Tonoli D, Leocani L, Biella G, D'Adamo P, de Curtis I (2016). Loss of Either Rac1 or Rac3 GTPase Differentially Affects the Behavior of Mutant Mice and the Development of Functional GABAergic Networks. Cereb Cortex, 26:873-90.
***co-first authors**

8) Onorati M, Castiglioni V, Biasci D, Cesana E, Menon R, Vuono R, Talpo F, Goya RL, Lyons PA, Bulfamante GP, Muzio L, Martino G, Toselli M, Farina C, Barker RA, Biella G, Cattaneo E (2014). Molecular and Functional Definition of the Developing Human Striatum. Nat Neurosci, 17(12):1804-15.

9) Vaghi V, Pennucci R, Talpo F, Corbetta S, Montinaro V, Barone C, Croci L, Spaiardi P, Consalez GG, Biella G, de Curtis I (2014). Rac1 and Rac3 GTPases Control Synergistically the Development of Cortical and Hippocampal GABAergic Interneurons. Cereb Cortex, 24(5):1247-58.

10) Delli Carri A, Onorati M, Lelos J, Castiglioni V, Faedo A, Menon R, Camnasio S, Vuono R, Spaiardi P, Talpo F, Toselli M, Martino G, Barker RA, Dunnett SB, Biella G, Cattaneo E (2013). Developmentally coordinated extrinsic signals drive human pluripotent stem cell differentiation toward authentic DARPP-32+ medium-sized spiny neurons. Development, 140(2):301-12.