# *CURRICULUM VITAE ET STUDIORUM*
**FEDERICO BRANDALISE**

(aggiornato Dicembre 2024)

## ***INFORMAZIONI PERSONALI:***

**Nome**: Federico
**Brandalise:** Brandalise
**Sesso:** male
**Data di Nascita**: April 13th, 1986
**Luogo di Nascita**: Tregnago (VR - Italy)
**Cittadinanza**: Italian
**Indirizzo e-mail**: federico.brandalise@unica.it
**Indirizzo di Lavoro**: Department of Biomedical Sciences
Division of Neuroscience and Clinical Pharmacology
University of Cagliari,
Cittadella Universitaria di Monserrato
09042 Monserrato, Italy Italy
**Telefono di Lavoro:**
**Numero di Cellulare**:

## ***EDUCAZIONE:***

Agosto 29, 2016: Ph.D. in Neuroscience, University of Zurich (Switzerland).
Titolo della Tesi: "The Dendritic NMDA Spike as a Fundamental Mechanism Initiating Associative Plasticity in the CA3 Region of the Hippocampus."
Supervisorse: Fritjof Helmchen, PhD and Urs Gerber, MD.

Giugno 26, 2013: Master's Degree in Neurobiology, University of Pavia (Italy).
Titolo della Tesi: "Synaptic cross-talk between granule cells and Golgi cells through $GABA_B$ mediated modulation of $GABA_A$- dependent neurotransmission in the cerebellum." Marks 103/110.
Supervisore: Prof. Paola Rossi.

Settembre 22, 2008: Bachelor's Degree in Human Biology and Biomedical Science, University of Pavia (Italy).
Thesis title: "The NR2A subunit of the N-methyl D-aspartate receptor is required for potentiation at the cerebellar mossy fiber to granule cell synapse and vestibulo-cerebellar motor learning." Marks: 110/110 with honors.
Supervisore: Prof. Paola Rossi.

Lingue Straniere: Inglese (C2)

Francese (B2)
Tedesco (B1)

***CERTIFICATI E ABILITAZIONI:***

RESAL module 1 (FELASA B): Corso introduttivo in scienze degli animali da laboratorio. Formazione e istruzione per le Persone che Conducono Esperimenti sugli Animali (Ordinanza sulla Formazione per la Detenzione e la Gestione degli Animali in Svizzera (455.109.1), settembre 2008, 5ª edizione; rinnovata nel 2018).

***ESPERIENZE DI LAVORO:***

**Dic 2024-ad oggi:** RTT (Ricercatore a Tempo Determinato - Tenure Track), Dipartimento di Scienze Biomediche, Divisione di Neuroscienze e Farmacologia Clinica, Università di Cagliari (IT).

**Ott 2021-10/2024:** RTDB (Ricercatore a Tempo Determinato di tipo B - Tenure Track), Dipartimento di Bioscienze, Università di Milano (IT).

**Ott 2018 – Sett 2021**: Assegnista di ricerca post-dottorato, Dipartimento di Neuroscienze Fondamentali (NEUFO), Università di Ginevra (CH).Progetto: "Modulazione legata all'apprendimento del nucleo talamico posteromediale (POM) sui dendriti corticali attivi di S1 durante un compito di discriminazione tattile".
Supervisore: Prof. Anthony Holtmaat, PhD.

**Genn 2017 – Sett 2018:** Assegnista di ricerca post-dottorato, Center for Learning and Memory, Università del Texas ad Austin (TX, USA). Progetto: "Dinamiche e plasticità della segnalazione dendritica nella corteccia prefrontale di un modello murino della sindrome dell'X fragile".
Supervisore: Prof. Daniel Johnston, PhD.

**Giugno 2013 – Ago 2016:** Dottorando, Laboratorio di Elettrofisiologia, Brain Research Institute, Università di Zurigo (CH). Supervisori: Prof. Fritjof Helmchen, PhD, e Prof. Urs Gerber, MD, PhD.

**Feb 2013 – Giu 2013:** Assegnista pre-dottorato, Laboratorio di Elettrofisiologia, Università di Pavia; Collaborazione come esperto in elettrofisiologia e comportamento con Miconet srl (start-up), Università di Pavia. Supervisori: Prof.ssa Paola Rossi, PhD, e Prof. Egidio D'Angelo, MD.

***PREMI E RICONOSCIMENTI:***

**2022:** The "3Brain - Massimo Grattarola Award 2022" for Excellence in Neurophysiology. Giving by 3Brain AG. Premio di €15k

**2018:** Advanced Post Doc Mobility Fellowship, finanziata dalla Swiss National Science Foundation.

**2017:** Zentrum für Neurowissenschaften (ZNZ) Premio Migliore Tesi di Dottorato 2017 (University of Zurich).

**2017:** SSN Travel grant 2017, finanziata dalla Swiss Society for Neuroscience.

**2016:** 3rd Prize "Best Poster Award" alla EMBO Conference "Dendritic Anatomy, Molecules and Function" (Crete, 06/2016).

**2016:** Early Post-Doc Mobility Fellowship, finanziata dalla Swiss National Science Foundation.
**2015:** 1st Prize at the Brain Research Institute PhD competition 2015 (University of Zurich).
**2014:** F1000 Prime Sponsorizzazione dell´articolo "Mossy fiber-evoked subthreshold responses induce timing-dependent plasticity at hippocampal CA3 recurrent synapses" https://facultyopinions.com/article/718281700
**2014:** SSN Travel grant 2014, finanziata Swiss Society for Neuroscience.

## ***INCARICHI ISTITUZIONALI***

**Jan 2022 – Apr 2024:** Membro della Commissione Spazi, Dipartimento di Bioscienze, Universita´ di Milano
**Jan 2022 – Apr 2024:** Membro della Commissione Scientifica, Dipartimento di Bioscienze, Universita´ di Milano
**2023– May 2024:** Membro della Commissione Pari Opportunita´, Dipartimento di Bioscienze, Universita´ di Milano

## ***ATTIVITA´ DI DIVULGAZIONE PUBBLICA:***

**Oct 2014:** Lezione su invito presso i "nanoTalks" (un gruppo di divulgazione scientifica con sede presso l'Università di Zurigo). Titolo: "Decifrare il senso del luogo nel cervello", in occasione della celebrazione del Premio Nobel Edvard Moser. Il link alla presentazione è disponibile qui:
https://www.youtube.com/watch?v=00_nsjv17Co&t=35s

**Oct 2013:** Lezione su invito nella serie di seminari "Evoluzione e cervello" – Università di Pavia.

## ***SPEAKER SU INVITO A CONFERENZE E TALK INTERNAZIONALI:***

**Oct 2024:** THE NEUROSCIENCE OF CANCER MEETING (BOLOGNA, IT). "Investigating the role of voltage-gated sodium channels in glioblastoma stem cells: implications for therapeutic targeting".

**Feb 2024:** " Incontro inaugurale per il "Programma di Eccellenza" del Dipartimento di Bioscienze, Università degli Studi di Milano.

**Sept 2021:** GIESSBACH NEUROSCIENCE MEETING (CH). "Cell type and input selective non-linear dendritic responses in layer 2/3 pyramidal cells of the somatosensory cortex".

**Jan 2020:** SWISSKERS MEETING (Bern – CH). "Dendritic integration of long-range inputs by barrel cortex pyramidal cells".

**May 2016:** EMBO Conference "Dendritic Anatomy, Molecules and Function" – Crete (EL). "Dendritic NMDA spikes are necessary for timing-dependent associative plasticity at recurrent synapses of CA3 hippocampal pyramidal cells".

**Mar 2015:** Gordon Research Conference "Dendrites: Molecules, Structure & Function" (Ventura – CA). "The NMDA-spike as a fundamental mechanism in timing-dependent plasticity at hippocampal CA3 recurrent synapses".

**Mar 2014:** GIESSBACH NEUROSCIENCE MEETING (CH). "The NMDA-spike as a fundamental mechanism in timing-dependent plasticity at hippocampal CA3 recurrent synapses".

## ***SPEAKER SU INVITO PER LEZIONI DIDATTICHE E DIVULGATIVE:***

**Jul 2024:** Università degli Studi di Milano, lezione su invito per la summer school: "Neuroni: come esplorare la complessità funzionale", nell'ambito del programma di dottorato in Biologia Molecolare e Cellulare.

**Jul 2024:** Università di Genova, lezione su invito per la summer school: "Svelare l'impatto dei canali del sodio voltaggio-dipendenti sulla progressione del glioma", nell'ambito del programma di dottorato in Neuroscienze.

**Mar 2024:** CNR Pisa, lezione su invito per gli IN Pisa Talks: "Aumentare la sensibilità alla chemioterapia nelle cellule staminali del glioblastoma attraverso la modulazione dei canali del sodio voltaggio-dipendenti per promuovere la differenziazione", nell'ambito dei seminari mensili organizzati dal Dipartimento di Neuroscienze del CNR di Pisa.

**Jan 2024:** Università San Raffaele, lezione su invito per il NeuroClub: "Risposte dendritiche non lineari selettive per tipo cellulare e input nei neuroni piramidali dello strato 2/3 della corteccia somatosensoriale."

**Nov 2019:** Università di Padova, lezione su invito ospitata dalla Prof.ssa Daniela Pietrobon: "La proteina di ritardo mentale dell'X fragile controlla bidirezionalmente l'Ih dendritico in modo specifico per tipo cellulare tra l'ippocampo e la corteccia prefrontale del topo".

- **May 2016:** Conferenza EMBO "Dendritic Anatomy, Molecules and Function" – Creta (EL). "Gli spike dendritici NMDA sono necessari per la plasticità associativa dipendente dal tempo nelle sinapsi ricorrenti delle cellule piramidali CA3 dell'ippocampo".

**Oct 2014:** University of Zurich. "Decoding the brain's sense of place".

**Oct 2013:** University of Pavia. "Evolution and the brain".

## ***POSTERS A CONFERENZE:***

**2024:** SIF (Societa´ Italiana di Farmacologia) Monothematic congress "Evolution of Cancer Pharmacology" – Salerno (IT). "Modulating Voltage-Gated Sodium Channels to Enhance Differentiation and Sensitize Glioblastoma Cells to Chemotherapy"

**2023:** European Association of Neuro-Oncology **(**EANO) Meeting – Rotterdam (NL). "Regulation of glioblastoma cancer stem cells and proliferation through voltage gated sodium channel".

**2023:** Cancer Neuroscience Meeting 2023 – Heidelberg (DE). "Voltage-gated-sodium channel as a gate for stemness in human glioblastoma cancer stem cells".

**2023:** European Association for Cancer Research **(**EACR) 2023 – Turin (IT). "Voltage-gated-sodium channel and its role in human glioblastoma cancer stem cells".

**2020:** Swiss Neuroscience annual meeting – Bern (CH). "Input specific dendritic integration by barrel cortex supragranular pyramidal cells".

**2019:** Synapse meeting – Lausanne (CH). "FMRP regulation of dendritic HCN channels between in mouse hippocampus and prefrontal cortex".

**2019:** Swiss Neuroscience annual meeting – Geneva (CH). "FMRP bidirectionally controls differentially regulates dendritic HCN in a cell-type specific manner between in mouse hippocampus and prefrontal cortex".

**2017:** Society for Neuroscience Meeting (SFN) – Washington (DC). "Cell-type specific regulation of ion channel function by fragile x mental retardation protein".

**2016:** Neuroscience meeting – San Diego (CA). "From full-blow spikes to graded boosting NMDA dendritic supralinearities: what causes the switch?".

**2016:** EMBO Conference "Dendritic Anatomy, Molecules and Function" – Crete (EL). "Dendritic NMDA spikes are necessary for timing-dependent associative plasticity at recurrent synapses of CA3 hippocampal pyramidal cells".

**2016:** Swiss Neuroscience annual meeting – Lausanne (CH). "Dendritic spike generation at CA3 pyramidal cells triggers LTP at recurrent synapses".

**2015:** Society for Neuroscience Meeting (SFN) – Chicago (IL). "The NMDA-spike as a fundamental mechanism in timing-dependent plasticity at hippocampal CA3 recurrent synapses".

**2015:** Gordon Research Conference "Dendrites: Molecules, Structure & Function" – Ventura (CA). "The NMDA-spike as a fundamental mechanism in timing-dependent plasticity at hippocampal CA3 recurrent synapses".

**2014:** Society for Neuroscience Meeting (SFN)–Washington (DC). "Distinct developmental expression of G-protein coupled inwardly rectifying potassium (GIRK) channels in cerebellar granule cells in the hemispheres as compared to the vermis".

**2014:** FENS Meeting – Milan (IT). "Cerebellar granule cells exhibit distinct developmental expression of voltage-dependent channels in the hemispheres as compared to the vermis".

**2012:** 8th IBRO World congress of Neuroscience – Florence. "Synaptic activation of GABAB receptors in granule cells reduces GABAA receptor-mediated responses at the Golgi cell–granule cell synapse in rat cerebellum".

**2011:** Society for Neuroscience Meeting (SFN) – Washington (DC). "Subthreshold mossy fiber input can trigger synaptic plasticity between CA3 pyramidal cells".

## ***PROGETTI DI RICERCA:***

**2023-2025:** Cancer cells go neuronal: role of Voltage-Gated Sodium Cannels in mediating Glioblastoma-to-Neuron communication and Tumor Proliferation. PRIN: PROGETTI DI RICERCA DI RILEVANTE INTERESSE NAZIONALE – Bando 2022 (**Co-PI**).

**2023-2024:** Voltage-gated-sodium channel and its role in stemness regulation in human glioblastoma cells – Linea 2 Grant 2023, University of Milan (**PI**).

**2018 (Jul-Sept):** Fragile X Mental Retardation Protein (FMRP) modulates the functional membrane expression of HCN channel via protein-protein interaction: characterization of a novel regulatory mechanism – Swiss National Science Foundation (**PI**).

**Jan 2017- Jun 2018:** Dynamics and Plasticity of Dendritic Signaling in the Prefrontal Cortex of a Fragile X Syndrome Mouse Model – Swiss National Science Foundation (**PI**).

**2015-2017:** Dynamics and Plasticity of Dendritic Signaling in Hippocampal CA3 Pyramidal Cells (**team member**).

**2012-2015:** Dynamics and Plasticity of Synaptic Signaling at Identified Synapses in Hippocampus – Swiss National Science Foundation (**team member**).

## ***AFFILIAZIONI A SOCIETA´ SCIENTIFICHE:***

European Association of NeuroOncology (EANO)
European Association for Cancer Research (EACR)
Italian Society of Pharmacology (SIF)

## ***REVISORE AD-HOC:***

Revisore ad hoc per i seguenti Riviste Scientifiche Internazionali:

- Frontiers in Physiology
- Current Biology
- Plos One
- Cell Communication and Signaling
- Biomedicines
- International Journal of Molecular Sciences
- Cancers

## ***COMPITI E IMPEGNI EDITORIALI***

**Sept 2022 – ad oggi** Editor di revisione per Frontiers in Oncology (sezione di Molecular and Cellular Oncology).
https://www.frontiersin.org/search/journal/oncology/section/molecular-and-cellular-oncology?query=brandalise&tab=topresults&origin=https%3A%2F%2Fwww.frontiersin.org%2Fjournals%2Foncology%2Fsections%2Fmolecular-and-cellular-oncology

## ***CITAZIONI:***

**Scopus:** 479**; h- index** 13
**Google Scholar:** 764; **h-index** 15; **i10-index** 18

## ***PUBBLICAZIONI PEER REVIEWED (all in English):***

1. Giammello, F., Biella, C., Priori, E. C., Filippo, M. A. D. S., Leone, R., D'Ambrosio, F., ... & **Brandalise, F.** (2024). Modulating voltage-gated sodium channels to enhance differentiation and sensitize glioblastoma cells to chemotherapy. Cell Communication and Signaling, 22(1), 434.

2. Porro, A., Armano, E., **Brandalise, F**., Appiani, R., Beltrame, M., Saponaro, A., Dallanoce, C., Nakajo, K., Ryu, K., Leone, R. and Thiel, G., 2024. A Photoactivatable Version of Ivabradine Enables Light-Induced Block of HCN Current In Vivo. Journal of Medicinal Chemistry, 67(18), pp.16209-16221.

3. Doldi V, Tortoreto M, Colecchia M, Maffezzini M, Percio S, Giammello F, **Brandalise F**, Gandellini P, Zaffaroni N (2024). Repositioning of antiarrhythmics for prostate cancer treatment: a novel strategy to reprogram cancer-associated fibroblasts towards a tumor-suppressive phenotype. *J Exp Clin Cancer Res*, 43(1):161. doi: 10.1186/s13046-024-03081-0. IF: 12.6.

4. Gazzola A, Ratto D, Perrucci F, Occhinegro A, Leone R, Giammello F, Balestrieri A, Pellitteri-Rosa D, Rossi P, **Brandalise F** (2024). Predation cues induce predator specific changes in olfactory neurons encoding defensive responses in agile frog tadpoles. *Plos one*, 19(5):e0302728. DOI: 10.1371/journal.pone.0302728. IF: 3.7.

5. Priori EC, Ratto D, De Luca F, Sandionigi A, Savino E, Giammello F, Romeo M, **Brandalise F**, Roda E, Rossi P (2023). Hericium erinaceus Extract Exerts Beneficial Effects on Gut–Neuroinflammaging–Cognitive Axis in Elderly Mice. *Biology*, 13(1):18. DOI: 10.3390/biology13010018. IF: 4.4.

6. **Brandalise F**, Ramieri M, Pastorelli E, Priori EC, Ratto D, Venuti MT, Roda E, Talpo F, Rossi P (2023). Role of Na+/Ca2+ Exchanger (NCX) in Glioblastoma Cell Migration (In Vitro). *Int J Mol Sci* 24(16):12673. DOI: 10.3390/ijms241612673. IF: 5.6.

7. **Brandalise F**, Roda E, Ratto D, Goppa L, Gargano ML, Cirlincione F, Priori EC, Venuti MT, Pastorelli E, Savino E, Rossi P (2023). Hericium erinaceus in Neurodegenerative Diseases: From Bench to Bedside and Beyond, How Far from the Shoreline? *J Fungi* 9(5):551. DOI: 10.3390/jof9050551. IF: 5.2.

8. **Brandalise F**, Kalmbach BE, Cook EP, Brager DH (2023). Impaired dendritic spike generation in the Fragile X prefrontal cortex is due to loss of dendritic sodium channels. *J Physiol* 601(4):831-845. DOI: 10.1113/JP283311. IF 5.5.

9. Georgiou C, Kehayas V, Lee KS, **Brandalise F**, Sahlender DA, Blanc J, Knott G, Holtmaat A (2022). A subpopulation of cortical VIP-expressing interneurons with highly dynamic spines. *Commun Biol* 5, 352. DOI: 10.1038/s42003-022-03278-z. IF: 5.9.

10. **Brandalise F**, Carta S, Leone R, Helmchen F, Holtmaat A, Gerber U (2022). Dendritic branch-constrained NMDA spikes drive synaptic plasticity in hippocampal CA3 pyramidal cells. *Neuroscience* 489:57-68. DOI: 10.1016/j.neuroscience.2021.10.002. IF: 3.3.

11. Ferrari B, Roda E, Priori EC, De Luca F, Facoetti A, Ravera M, **Brandalise F**, Locatelli CA, Rossi P, Bottone MG (2021). A New Platinum-Based Prodrug Candidate for Chemotherapy and Its Synergistic Effect with Hadrontherapy: Novel Strategy to Treat Glioblastoma. *Front Neurosci* 15:589906. DOI: 10.3389/fnins.2021.589906. IF: 4.3.

12. **Brandalise F**, Ratto D, Leone R, Olivero F, Roda E, Locatelli CA, Bottone MG, Rossi P (2020). Deeper and Deeper on the Role of BK and Kir4. 1 Channels in Glioblastoma Invasiveness: A Novel Summative Mechanism? *Front Neurosci* 14:595664. DOI: 10.3389/fnins.2020.595664. IF: 4.3.

13. **Brandalise F*,** Kalmbach BE*, Mehta P, Thornton O, Johnston D, Zemelman BV, Brager DH (2020). Fragile X Mental Retardation Protein Bidirectionally Controls Dendritic Ih in a Cell Type-Specific Manner between Mouse Hippocampus and Prefrontal Cortex. *J Neurosci* 40(27):5327-5340. DOI: 10.1523/JNEUROSCI.1670-19.2020. IF: 5.3.

14. Ratto D, Ferrari B, Roda E, **Brandalise F**, Siciliani S, De Luca F, Priori EC, Di Iorio C, Cobelli F, Veneroni P, Bottone MG, Rossi P (2019). Squaring the Circle: A New Study of Inward and Outward-Rectifying Potassium Currents in U251 GBM Cells. *Cell Mol Neurobiol* 40(5):813-828. DOI: 10.1007/s10571-019-00776-3. IF: 4.3.

15. Soldado-Magraner S*, **Brandalise F***, Honnuraiah S, Pfeiffer M, Moulinier M, Gerber U, Douglas R (2019). Conditioning by subthreshold synaptic input changes the intrinsic firing pattern of CA3 hippocampal neurons. *J Neurophysiol* 123(1):90-106. DOI: 10.1152/jn.00506.2019. IF: 2.7.

16. Vigna L, Morelli F, Agnelli GM, Napolitano F, Ratto D, Occhinegro A, Di Iorio C, Savino E, Girometta C, **Brandalise F**, Rossi P (2019). Hericium erinaceus Improves Mood and Sleep Disorders in Patients Affected by Overweight or Obesity: Could Circulating Pro-BDNF and BDNF Be Potential Biomarkers? *Evid Based Complement Alternat Med* 2019:7861297. DOI: 10.1155/2019/7861297. IF: 2.1.

17. Rossi P, Cesaroni V, **Brandalise F**, Occhinegro A, Ratto D, Perrucci F, Lanaia V, Girometta C, Orrù G, Savino E (2018). Dietary Supplementation of Lion's Mane Medicinal Mushroom, Hericium erinaceus (Agaricomycetes), and Spatial Memory in Wild-Type Mice. *Int J Med Mushrooms* 20(5):485-494. DOI: 10.1615/IntJMedMushrooms.2018026241. IF: 1.2.

18. **Brandalise F**, Carta S, Helmchen F, Lisman J, Gerber U (2016). Dendritic NMDA spikes are necessary for timing-dependent associative plasticity at synapses between hippocampal pyramidal cells. *Nat Commun* 7:13480. DOI: 10.1038/ncomms13480. IF: 16.6.

19. **Brandalise F**, Cesaroni V, Gregori A, Repetti M, Romano C, Orrù G, Botta L, Girometta C, Guglielminetti ML, Savino E, Rossi P (2017). Dietary supplementation of Hericium erinaceus increases mossy fiber-CA3 hippocampal neurotransmission and recognition memory in wild-type mice. *Evid Based Complement Alternat Med*. 2017:3864340. DOI: 10.1155/2017/3864340. IF: 2.1.

20. **Brandalise F**, Lujan R, Leone R, Lodola F, Cesaroni V, Romano C, Gerber U, Rossi P (2016). Distinct expression patterns of inwardly rectifying potassium currents in developing cerebellar granule cells of the hemispheres and the vermis. *Eur J Neurosci* 43(11):1460-73. DOI: 10.1111/ejn.13219. IF: 3.4.

21. Gazzola A*, **Brandalise F***, Rubolini D, Rossi P, Galeotti P (2015). Fear is the mother of invention: anuran embryos exposed to predator cues alter life-history traits, post-hatching behaviour and neuronal activity patterns. *J Exp Biol* 218(Pt 24):3919-30. DOI: 10.1242/jeb.126334. IF: 2.8.

22. Mirante O, **Brandalise F**, Bohacek J, Mansuy I (2014). Distinct molecular components for thalamic-and cortical-dependent plasticity in the lateral amygdala. *Front Mol Neurosci* 3;7:62. DOI: 10.3389/fnmol.2014.00062. IF: 4.8.

23. Rossi P, Buonocore D, Altobelli E, **Brandalise F**, Cesaroni V, Iozzi D, Savino E, Marzatico F (2014). Improving training condition assessment in endurance cyclists: effects of Ganoderma lucidum and ophiocordyceps sinensis dietary supplementation. *Evid Based Complement Alternat Med* 2014:979613. DOI: 10.1155/2014/979613. IF: 2.1.

24. **Brandalise F**, Gerber U (2014). Mossy fiber-evoked subthreshold responses induce timing-dependent plasticity at hippocampal CA3 recurrent synapses. *Proc Natl Acad Sci U S A* 111(11):4303-8. DOI: 10.1073/pnas.1317667111. IF: 11.1.

25. **Brandalise F**, Gerber U, and Rossi P (2012). Golgi cell-mediated activation of postsynaptic GABAB receptors induces disinhibition of the Golgi cell– granule cell synapse in rat cerebellum. *PLoS One* 7(8):e43417.
DOI: 10.1371/journal.pone.0043417. IF: 3.7.

26. Corno D, Pala M, Cominelli M, Cipelletti B, Leto K, Croci L, Barili V, **Brandalise F**, Melzi R, Di Gregorio A, Sergi LS, Politi LS, Piemonti L, Bulfone A, Rossi P, Rossi F, Consalez GG, Poliani PL, Galli R (2012). Gene signatures associated with mouse postnatal hindbrain neural stem cells and medulloblastoma cancer stem cells identify novel molecular mediators and predict human medulloblastoma molecular classification. *Cancer Discov.* 2(6):554-68. DOI: 10.1158/2159-8290.CD-11-0199. IF: 29.1.

27. Andreescu CE, Prestori F, **Brandalise F**, D'Errico A, De Jeu MT, Rossi P, Botta L, Kohr G, Perin P, D'Angelo E, De Zeeuw CI (2011). NR2A subunit of the N-methyl D-aspartate receptors are required for potentiation at the mossy fiber to granule cell synapse and vestibulo-cerebellar motor learning. *Neuroscience*. 176:274-83. DOI: 10.1016/j.neuroscience.2010.12.024. IF: 3.3.

## ***EXPERTIES TECNICHE:***

**Elettrofisiologia**: *Ex vivo* patch clamp recording techniques from rat and mouse brain acute slices and organotypic cultures: whole-cell, inside out, outside out, configurations; multiple cells simultaneous recording; dendritic recording; double soma-dendritic recording; extracellular evoked field potentials recordings from rat and mouse brain slices. *Ex vivo* optogenetics. *Ex vivo* two photon (2P) calcium imaging.
*In vitro* patch clamp recording in neuronal cultures, stem cells, glioblastoma 2D and 3D cultures (organoids).

**Chirurgia Animale:** Stereotaxic intracranial injections of viral constructs; cranial windows implant for *in-vivo* 2P-calcium imaging on mice and rats' brain.

**Test Comportamentali:** Delayed eye-blink conditioning; Y maze; radial maze; water maze; emerging test; open field. *In-vivo* 2P-calcium imaging on mice and rats' brain.

**Biologia Molecolare:** Basic techniques for DNA manipulation (isolation of cDNA clones, southern blotting, colony hybridization, electrophoresis gel, real time PCR, end-point PCR).

**Biologia Cellulare:** Cell culture techniques and glioblastoma organoids production; SDS-PAGE, immunoprecipitation, western blot.

**Microscopia:** Brightfield and fluorescence microscopy, *in vivo*, *in vitro* and *ex vivo* 2-photon calcium imaging, confocal acquisition, time lapse acquisition on living cell cultures.

**Competenze Informatiche:** Office, Corel Draw, Illustrator, Igor Pro, Prism, Clampfit, Clampex, Origin, ImageJ, HelioScan software, Matlab, BioRender.

## ***IMPEGNI DIDATTICI***

**A.Y. 2023/24:** "Cell Biophysics" (3CFU), Corso Magistrale in Quantitative Biology;
"Membrane biophysics and signal transduction" (3CFU), Corso Magistrale in Applied Biology to Biomedical Research, University of Milan.

**A.Y. 2022/23:** "Cell Biophysics" (3CFU), within the master's degree in Quantitative Biology;
"Membrane biophysics and signal transduction" (3CFU), within the master's degree in Applied Biology to Biomedical Research, University of Milan.
Thesis supervisor degli student magistrali: Matilde Amat Di San Filippo, nel corso di Applied Biology to Biomedical Research; Francesca Giammello, Tesi Magistrale nel Corso di Molecular Biology of the Cell; Martina Tranchina, tesi magistrale nel corso di Applied Biology to Biomedical Research.

**A.Y. 2021/22:** "Cellular and molecular physiology" (3CFU), "Membrane biophysics and signal transduction" (3CFU), within the master's degree in Applied Biology to Biomedical Research, University of Milan.
Thesis supervisor for the master students: Chiara Biella, master's degree in Molecular Biotechnology and Bioinformatics; Emanuela Pastorelli, master's degree in Applied Biology to Biomedical Research.

**A.Y. 2020/21:** "The application of non-stationary fluctuation analysis to determine single channel's properties", seminar lesson as part of the course "Cell Biophysics", within the master's degree in Quantitative Biology, University of Milan.

**2013-2015:** "BIO 434: Electrophysiological Recording Techniques", practical course for the ZNZ Neuroscience PhD program, University of Zurich.

In conformità al Regolamento Generale sulla Protezione dei Dati dell'UE n. 2016/679 e al Decreto Legislativo Italiano n. 196 del 30/06/2003, autorizzo con la presente l'utilizzo e il trattamento dei miei dati personali contenuti in questo documento.

Firmato e sottoscritto Il Dichiarante

Selargius (CA), li 5/12/24 _____