UNIVERSITA' DEGLI STUDI DI GENOVA

AREA RICERCA, TRASFERIMENTO TECNOLOGICO E TERZA MISSIONE
SERVIZIO RICERCA
SETTORE RICERCA NAZIONALE

IL RETTORE

- Visto il Decreto Rettorale n. 3618 del 16/09/2025, con il quale è stato indetto il concorso per titoli e colloquio, per il conferimento di 1 borsa di ricerca post-lauream, di tipo starting, della durata di 4mesi dell'importo lordo di € 5.416,00 (cinquemilaquattrocentosedici/00), eventualmente rinnovabile, per lo svolgimento di una ricerca sul tema: "Basi molecolari dei disordini del movimento", nell'ambito del progetto Telethon Cariplo GJC22066, presso il Dipartimento DIMES dell'Università degli Studi di Genova;

- Visto il Decreto Rettorale n. 4080 del 13/10/2025 con il quale è stata costituita la Commissione giudicatrice per il conferimento della suddetta borsa di ricerca;

- Visto il verbale della Commissione giudicatrice del concorso in parola, riunitasi in data 16/10/2025;

- Constatata la regolarità della procedura seguita;

DECRETA

Art. 1

Sono approvati gli atti del concorso di cui in premessa e la seguente graduatoria di merito:

1. Dott.ssa Lisastella Morinelli punti 89/100.

Sotto condizione dell'accertamento dei requisiti di cui al bando, è dichiarata vincitrice del concorso in parola la Dott.ssa Lisastella Morinelli.

Genova,

IL RETTORE
(firmato digitalmente)

Responsabile del procedimento: Paola Pelle
Area Ricerca, Trasferimento Tecnologico e Terza Missione
Servizio Ricerca
Settore Ricerca Nazionale

europass

Lisastella Morinelli

| | | |

WORK EXPERIENCE

UNIVERSITY OF GENOVA – GENOVA, ITALY

PHD STUDENT IN CLINICAL AND EXPERIMENTAL NEUROSCIENCE – 11/2022 – CURRENT

In 2022, I assumed the position of PhD student in Clinical and Experimental Neuroscience at the Laboratory of Neurophysiology, Department of Experimental Medicine, University of Genoa. Over the past three years, in collaboration with Prof. Anna Corradi I worked on neurodevelopmental movement disorders due to rare genetic mutations in neuronal genes, namely PRRT2, NaV1.2 and TMEM151A. In particular I worked with human immortalized cell lines, primary mouse neuronal cells and mostly with induced pluripotent stem cells (iPSC). I differentiated mutant and control iPSCs lines to get glutamatergic and gabaergic neurons aimed to model the neurodevelopmental disorders of interest using the optimized protocol from our lab (Servetti et al. 2025). I characterized these cultures through rtPCR, immunofluorescence and Multi-Electrode Array (MEA) recordings.

EDUCATION AND TRAINING

2017 – 2020

BACHELOR DEGREE IN BIOTECHNOLOGY University of Genoa

During my internship in the Neurophysiology laboratory of the Department of Experimental Medicine of the University of Genova, I studied the pathogenetic mechanisms underlying the PRRT2 (PRoline Rich Transmembrane protein 2) disorder. I mostly used biochemical assays on human immortalized cell lines and primary murine neuronal cultures.

Final grade 110L/110 | **Thesis** Study of PRRT2 protein mutations found in epilepsy and movement disorders.

2020 – 2022

MASTER DEGREE IN MEDICAL AND PHARMACEUTICAL BIOTECHNOLOGY University of Genoa

During the master thesis internship I performed in the Neurophysiology laboratory of the Department of Experimental Medicine of the Univerisity of Genova, I focused on the interaction between PRRT2 and the Voltage gated Sodium channels NaV1.2. PRRT2 regulates the functioning of these channels in a negative manner, therefore mutations of PRRT2 may lead to an hyperactivation of the channels resulting in the epileptic phenotype. I used primary murine neuronal cultures and human immortalized cell lines to investigate the role of PRRT2 mutations on the NaV1.2 function, in particular focusing on the membrane targeting of the channel itself (Morinelli, Sterlini et al. 2023)

Final grade 110L/110, medal, recommendation for publication |

Thesis Characterization of the molecular interaction of PRRT2 and NaV1.2 sodium channel to study the pathogenetic mechanisms underlying epilepsy and PRRT2 related disorders

2022 – CURRENT

PHD IN CLINICAL AND EXPERIMENTAL NEUROSCIENCE University of Genoa

During my PhD I continued working on PRRT2 and NaV1.2 proteins, but I also focused more on another gene involved in Paroxysmal Kinesing Dyskinesia, TMEM151A. At the beginning of my PhD, TMEM151A was a completely unknown gene, defined TDark by the Pharos database. I initially worked on the definition of its membrane topology (Morinelli et al. 2024) and then I mostly focused on the generation of a human model of the disease with the use of two KO cell lines for TMEM151A. I differentiated both control and KO lines in glutamatergic and gabargic neurons that I then characterized through rtPCR, immunofluorescence and MEA recordings. This model is a valuable tool to define the pathogenetic mechanism underlying the disease and to test therapies and drugs on a human model.

Thesis Molecular and functional study of genes associated with epilepsy and movement disorders using human derived models

SKILLS

Molecular Biology

Construction of plasmid vectors (cloning by PCR and restriction enzyme etc.) | in-situ mutagenesis | Real Time-PCR | CRISPR genome editing basics

Cellular Biology

Cell culture manipulation (propagated and primary cell cultures: neurons and glial cells) | Knock down by short hairpin | Transient cell transfection

iPSCs technology

iPSC differentiation into glutamatergic and gabaergic neurons

MEA Electrophysiological recordings of neural networks of human 2D models

2D Neural network recordings conducted with the Axion Maestro system (Axion) using 48-well plate

Analysis software

Graph Pad Prism 8 | R basics | ImageJ Fiji | Image Lab

Imaging techniques

Immunofluorescence | Epifluorescence Microscopy | Confocal Microscopy (Leica and Nikon)

Biochemistry techniques

western blot analysis | co-immunoprecipitation | pull-down assay | biotinylation assay

CONFERENCES & SEMINARS

2023 Torino
Italian Society Neurosciences SINS

Poster presentation “SCN2A A1659V loss-of-function variant causes early infantile onset encephalopathy”

2023 Bertinoro
SIF Young Researchers in Physiology

Oral presentation “Investigation of the PRRT2/Nav1.2 interaction as a pathogenic mechanism underlying PRRT2 related disorders”

2024 Anacapri
XXVII SIF School of Physiology and Biophysics

Best Letter of Intent prize

2024 Wien
FENS Forum

Poster presentation “TMEM151A, a new causative gene in Paroxysmal Kinesigenic Diskinesia"

2024 Roma
Italian Society of Physiology congress 2024

Poster presentation “TMEM151A, a new causative gene in Paroxysmal Kinesigenic Diskinesia"

2025 Rimini
Telethon Foundation Convention 2025

Poster presentation "TMEM151A, a new causative gene in Paroxysmal Kinesigenic Diskinesia"

2025 Milano
Neurogenomics conference - HT 2025

Poster presentation "TMEM151A, a new causative gene in Paroxysmal Kinesigenic DIskinesia"

PUBLICATIONS

2023

Missense mutations in the membrane domain of PRRT2 affect its interaction with Nav1.2 voltage-gated sodium channels

Sterlini B, Franchi F, Morinelli L, Corradi B, Parodi C, Albini M, Bianchi A, Marte A, Baldelli P, Alberini G, Maragliano L, Valente P, Benfenati F, Corradi A. Neurobiol Dis. 2023 Jul;183:106177. doi: 10.1016/j.nbd.2023.106177

Authors: Sterlini B, Franchi F, Morinelli L, Corradi B, Parodi C, Albini M, Bianchi A, Marte A, Baldelli P, Alberini G, Maragliano L, Valente P, Benfenati F, Corradi A. | **Journal Name**: Neurobiology of Disease | **Volume, Issue and Pages**: 2023 Jul;183:106177

2024

Unraveling the Membrane Topology of TMEM151A: A Step Towards Understanding its Cellular Role

Morinelli L, Corradi B, Arnaldi P, Cortese K, Muià M, Zara F, Maragliano L, Sterlini B, Corradi A. J Mol Biol. 2024 Dec 1;436(23):168834. doi: 10.1016/j.jmb. 2024.168834.

Authors: Morinelli L, Corradi B, Arnaldi P, Cortese K, Muià M, Zara F, Maragliano L, Sterlini B, Corradi A. | **Journal Name**: Journal of Molecular Biology | **Volume, Issue and Pages**: J Mol Biol. 2024 Dec 1;436(23):168834.

2025

Optimization of Transcription Factor-Driven Neuronal Differentiation from Human Induced Pluripotent Stem Cells for Disease Modelling and Drug Screening

Servetti M, et al. 2025 Apr;21(3):816-833. doi: 10.1007/s12015-025-10845-4.

Authors: Servetti M, Caramia M, Parodi G, Loiacono F, Nano E, Biddau G, Ferrando L, Morinelli L, Valente P, Martinoia S, Escelsior A, Serafini G, Tamburro S, Baldassari S, Fassio A, Benfenati F, Corradi A, Sterlini B. | **Journal Name**: Stem cell Reviews and Reports | **Volume, Issue and Pages**: Stem Cell Rev Rep. 2025 Apr;21(3):816-833

LANGUAGE SKILLS

Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C1	C1	C1	C1

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user

NETWORKS & MEMBERSHIPS

2024 – CURRENT Genova

Alumni Biotech Ge

I'm one of the founding members of the non-profit association of Alumni of the Biotechnology degree course of the University of Genoa

Link https://alumnibiotechge.org/

2023 – CURRENT

SIF - Società Italiana di Fisiologia

VOLUNTEERING

2017 – CURRENT

Associazione Padre Umile

I volounteer in the Padre Umile association aimed to prepare and distribute food and essential goods to homeless people