

Valentina Silenzi

WORK EXPERIENCE AND
TRAINING

- From 12/2019 - present** Lab supervisor for Master's students
La Sapienza University of Rome, Piazzale Aldo Moro 5, 00185 Rome, Italy.
- From 10/2018 to 2/2019** Student aide and tutoring of students from the English curriculum of the Molecular Biology and Genetics Master's degree.
La Sapienza University of Rome, Piazzale Aldo Moro 5, 00185 Rome, Italy.
- From 1/2018 - present** Research project entitled 'Investigating the function of circDlc1 *in vitro* and *in vivo*.' – supervised by Prof. I. Bozzoni.
Center for Life Nano- & Neuro-Science, Istituto Italiano di Tecnologia, Viale Regina Elena, 291, 00161 Rome, Italy
La Sapienza University of Rome, Piazzale Aldo Moro 5, 00185 Rome, Italy.
- From 3/2017 to 12/2017** Research internship at the Department of Pediatric Onco-haematology: exosomes in organotropic metastasis and liquid biopsies – supervised by Dr. A. Di Giannatale.
Ospedale Pediatrico Bambino Gesù - IRCCS, Viale F. Baldelli, 41, 00146 Rome, Italy.
- From 2/2016 to 6/2016** Research project entitled 'Investigating the Combined Administration of Ranolazine with Caffeic Acid Phenyl Esther on Metastatic Breast Cancer Cells' – supervised by Dr S. Fraser & Prof. M. Djamgoz.
Imperial College London, Sir Alexander Fleming Building, South Kensington Campus, London SW7 2AZ, UK.
- From 10/2014 to 6/2016** Student aide for the orienteering and help of new groups of students with academic or university related issues.
Imperial College London, Sir Alexander Fleming Building, South Kensington Campus, London SW7 2AZ, UK.
- From 2011 to 2012** Tutoring in Mathematics, Biology, Physics and Chemistry at the International General Certificate of Secondary Education (IGCSE; UK) level.
St. George's British International School in Rome, Via Cassia km 16, La Storta, 00123 Rome, Italy.

EDUCATION

From 2/2023 – 1/2025	Post Doc in Molecular Biology and Genetics – Bozzoni Group <i>Department of Biology and Biotechnology 'Charles Darwin' - La Sapienza University of Rome, Piazzale Aldo Moro 5, 00185 Rome, Italy.</i>	
From 11/2019 to 1/2023	PhD in Molecular Biology and Genetics <i>Center for Life Nano- & Neuro-Science, Istituto Italiano di Tecnologia, Viale Regina Elena, 291, 00161 Rome, Italy</i> <i>Department of Biology and Biotechnology 'Charles Darwin' La Sapienza University of Rome, Piazzale Aldo Moro 5, 00185 Rome, Italy.</i>	QEQ Level 8
From 10/2017 to 7/2019	Master of Science (MSc) in Molecular Biology and Genetics <i>La Sapienza University of Rome, Piazzale Aldo Moro 5, 00185 Rome, Italy.</i> <ul style="list-style-type: none"> Main subjects covered: mechanisms of gene expression and regulation, gene therapy, advanced molecular methodologies including single molecule techniques and gene editing, structural and cell biology, stem cells and differentiation, statistics. 	110/110 cum laude – QEQ Level 7
From 10/2013 to 6/2016	Bachelor of Science (BSc) & Associate of the Royal College of Science (ARCS) in Biochemistry <i>Imperial College London, South Kensington, SW7 2AZ London, United Kingdom (UK).</i> <ul style="list-style-type: none"> Main subjects covered: molecular biology, biophysics, biochemistry, stem cells, regeneration and ageing, cancer, systems neuroscience. Title of research project/thesis: "Investigating the Combined Administration of Ranolazine with Caffeic Acid Phenyl Esther on Metastatic Breast Cancer Cells (2016)". 	Second Class Honours (Upper Division) – QEQ Level 6
From 9/2011 to 6/2013	International Baccalaureate (IB) Bilingual diploma <i>St. George's British International School in Rome, Via Cassia km 16, La Storta, 00123 Rome, Italy.</i> <ul style="list-style-type: none"> Subjects: Biology Higher Level (HL), Chemistry HL, Italian A Language and Literature (First language) HL, Mathematics Standard Level (SL), English A Literature SL, Geography SL. 	39 points; 7 in Chemistry, Biology and Maths – QEQ Level 4
From 9/2009 to 6/2011	IGCSE in 10 subjects with seven A* in subjects including Mathematics, Biology, Physics and Chemistry <i>St. George's British International School in Rome, Via Cassia km 16, La Storta, 00123 Rome, Italy.</i>	7A*, 1A, 2B – QEQ Level 3

PERSONAL SKILLS

Mother tongue	Italian
Other languages(s)	English (C2) French (B1) Japanese (A2)

Research experience:

For part of my BSc thesis I investigated metastatic activity of different breast cancer cell lines upon treatment with different compounds known to block voltage-gated sodium channels by performing colorimetric assays as well as cell motility assays. I also assessed the expression of the voltage-gated sodium channel protein via immunocytochemistry.

During my internship in Bambino Gesù Children's hospital I became accustomed to working with primary cells from patients and exosomes, retrieving them from both the patients' blood and tissue samples. Exosomes were isolated in order to study them as potential markers for disease in liquid biopsies as well as gain further insight regarding their role in organotropic metastasis.

My MSc thesis work was centred on the role of a molecule called circ-Dlc1, belonging to a newly re-discovered class of RNAs, called circular RNAs that are known to be highly enriched in the mammalian brain. I continued to work on this molecule for my PhD: trying to identify and examine the phenotypes upon circ-Dlc1 KO *in vivo* and *in vitro*, as well as characterising this molecule by determining its RNA and protein interactors in specific districts of the murine brain via RNA pulldown experiments and immunoprecipitations.

Technical skills and competences:

BSc: cell culture; cell-based assays; immunocytochemistry.

Internship at Bambino Gesù Hospital: handling of primary cells from patients; isolation of PBMCs from patients' blood; isolation and analysis of exosomes.

MSc and PhD: handling of mESCs and neuronal differentiation; cloning and plasmid engineering; genome editing; biochemistry (western blot, immunoprecipitation, RNA pulldown, nucleus/cytoplasm fractionation); immunohistochemistry; RNA/protein extraction from mouse tissues; preparation of cryosections (murine whole-brain, muscle, heart).

Digital competences:

- Basic coding with Python.
- Good command of programs for image processing, for the analysis of data derived from biological experiments (ImageJ).
- Use of statistics programs (originPro, Excel, Graphpad Prism) for the evaluation of experimental data.
- Browsing databases including: Ensemble, UCSC, PDB and Uniprot.
- Use of bioinformatic tools such as Clustal Omega, BLAST, ESPript, PsiPred and TMHMM.
- Co-founder/designer of a web site about the protein interactions between Wnt ligand and Frizzled receptor for a university project, which includes images and animations created with Pymol. (<http://wnt-signalling.blogspot.it/p/home.html>).
- Good command of office suite (Microsoft Word, Powerpoint and Excel) – for both Windows and Mac

Courses:

EMBL Technology Day: Technologies for Extracellular Vesicles Research: Q&A
24th of November 2020, EMBL Heidelberg, Germany

Preparing artwork for scientific papers: getting started in scientific illustration
6th and 13th of May 2022, Rome

Conferences:

Presentation - CSHL "Regulatory & Non-Coding RNAs"
Cold Spring Harbor, NY, USA, 14-18th May 2024

NeuroRNA Conference: RNA regulation in brain function and disease
Online, 28-30th September 2022

SIBBM "Frontiers in Molecular Biology" Seminar
The RNA World 3.0
Rome, Italy, 20-22nd June 2022

Publications:

Silenzi et al., (2024).

A tripartite circRNA/mRNA/miRNA interaction regulates glutamatergic signaling in the mouse brain.

Cell Reports. Available from: doi.org/10.1016/j.celrep.2024.114766

Pellegrini et al., (2022).

A KO mouse model for the lncRNA Lhx1os produces motor neuron alterations and locomotor impairment.

iScience. Available from: [doi:10.1016/J.ISCI.2022.105891](https://doi.org/10.1016/J.ISCI.2022.105891)

D'Ambra et al., (2021).

Circ-Hdgrp3 shuttles along neurites and is trapped in aggregates formed by ALS-associated mutant FUS.

iScience. Available from: doi.org/10.1016/J.ISCI.2021.103504