

Laura Colagiorgio

Molecular Biotechnologist

Experience

Research fellow

Mar 2022-ongoing

Laboratorio NEST, Istituto Nanoscienze CNR, Pisa

Projects research activities:

- "Sviluppo di funzionalizzazioni chimiche di superficie per la rilevazione di polifenoli in vino basate su nanoparticelle polimeriche" nell'ambito del progetto PISR2019_03020 LS - Life Sciences VIOLoCFIAR - VIOLoC "Analisi VIno e OLio sviluppo di un Laboraotrio on-Chip a connettività remota" - GAE PUNFIR01

Supervisor: Dr. Marco Cecchini

Master Curricular Internship

Apr-Nov 2021

Laboratorio NEST, Istituto Nanoscienze CNR and Scuola Normale Superiore, Pisa

Research activity focused on the development of a therapy for Krabbe disease based on enzyme replacement therapy mediated by nanoparticles.

Advisor: Dr. Marco Cecchini

Project "Phage Hunters - Going Viral"

Sep-Nov 2020

University of Pisa

Construction of a bacteriophage collection for phage therapy against plant, human and animal diseases.

Supervisor: Dr. Mariagrazia Di Luca

Bachelor Curricular Internship

Dec 2018-Oct 2019

Department of Experimental Medicine, University of Perugia

Research activity focused on the study of the molecular mechanisms related to the clinical effects of dexamethasone on glioblastoma.

Advisor: Prof. Mauro Pessia

Academic History

Master's Degree in Molecular Biotechnology

Oct 2019-Jan 2022

University of Pisa joint with Sant'Anna School of Advanced Studies

Final degree score of 110/110

Course for teaching in secondary school (PF24)

Apr 2021-Jul 2021

University of Pisa

Bachelor's Degree in Biotechnological Science

2013-2019

University of Perugia

Conservatory graduate in piano performance

2002-2013

T. Schipa Conservatory of Music, Lecce

Language Skills

- Italian (mother tongue)
- English (B2)

Computer Skills

- GraphPad Prism
- Basics of the R statistical software
- Basics of tools for molecular modeling (VMD, Amber)
- Advanced in the use of Microsoft Office tools (Word, Excel and PowerPoint)

High school diploma in classical studies

2007-2012

Liceo Classico F. Capece, Maglie

Certificates and Training Schools

Training recognized by the "Ministero della Salute" to obtain credits necessary for the use of animals for scientific purposes:

- "Legislazione Nazionale ed Etica livello 1, moduli 1 e 2, dm 5 agosto 2021"
7,5 E.C.M. Jan 2022- Nov 2022
- "Biologia e Gestione degli animali da laboratorio, moduli 3.1, 4, 5, 6.1, 7. dm 5 agosto 2021 roditori e lagomorfi" 19,5 E.C.M. Jul 2022- Nov 2022
- "Elementi base per l'approccio dei ricercatori all'utilizzo degli animali ai fini scientifici" 13 E.C.M. Jan 2022- Nov 2022

I-GENE project -Training School

Nov 2020

University of Pisa

Focus on "How can nanomedicine be used for precise genome editing?", overview of the use of CRISPR/Cas9 as a powerful tool for gene editing.

Project funded by European Union's Horizon 2020

Technical skills

- Cell culture (primary and immortalized): extraction and set up of primary fibroblasts and neuronal cultures. Standard procedures to expand and grow cell lines: cell viability assays, cell biocompatibility assay, cell migration assay;
- Ability to work in BSL2 Plus laboratories;
- Techniques of molecular biology: nucleic acids extraction from cell cultures and tissues, gel electrophoresis, PCR, real-time PCR;
- Essential knowledge for phage sampling, extraction, purification, genome and lytic cycle analysis.
- Optical microscope, stereomicroscope and confocal microscope;
- Management and manipulation of mouse models: drugs administration, transcardiac perfusion and organs extraction, vibratome organs sectioning, blood extraction and serum isolation, extraction of primary fibroblast and neuronal cultures;
- Behavioral experiments in mice: grip strength test, rotarod test;
- Manipulation of *Xenopus laevis*: oocyte extraction and mRNA microinjection;
- Recombinant proteins purification: nickel affinity chromatography;
- Proteins quantification and enzymatic assays (4- μ and h μ - β Gal for Galc enzyme)
- Development, chemical synthesis and characterization physical chemistry of polymeric nanoparticles: evaluation of encapsulation efficiency, evaluation of enzymatic activity yield, stability tests, cargo-release tests, evaluation of hydrodynamic diameter and zeta potential by dynamic light scattering.

Other interest and activities

Bright: la notte dei ricercatori

Sept 2021

Largo Ciro Menotti, Pisa

Divulgative activity for the stand of the Istituto Nanoscienze CNR

Progetto Bio[Tecno]Logico

2019-2020

University of Pisa, Scuola Superiore Sant'Anna, Scuola Normale Superiore

Leading scientific dissemination activities in the field of genetic engineering and vaccines; this project took part to the European Biotech Week 2020.

Waitress and wine adviser

2017-2018

Bottega del Vino, Via del Sole 1, Perugia

Piano teacher and choral accompanist

2014-2016

Partnership culture "Coro Polifonico Canto Libero", Allerona Scalo (Orvieto)

Publications

- Carpi, S.; Del Grosso, A.; De Sarlo, M.; **Colagiorgio, L.**; Scaccini, L.; Tonazzini, I.; Parlanti, G.; Cecchini, M. Reliable and Fast Genotyping Protocol for Galactosylceramidase (Galc) in the Twitcher (Twi) Mouse. *Biomedicines* **2022**, 10, 3146. <https://doi.org/10.3390/biomedicines10123146>

Poster

- Carpi, S., Gagliardi, MC., **Colagiorgio L.**, De Sarlo, M., Scaccini, L., Mezzena, R., Del Grosso, A. & Cecchini, M. Nanoparticle-mediated enzyme replacement therapy for Krabbe disease. Federation of European Neuroscience Societies (FENS) Forum 2022. 9-13 July 2022 in Paris, France. Session 2700.