

Lorenzo Apolloni

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WORK EXPERIENCE

- **01.02.2024 – present: Assegnista di ricerca (Research fellow)**
CNR-Istituto di Scienza, tecnologia e Sostenibilità per lo sviluppo dei Materiali Ceramici (ISSMC), Faenza
Collaboration to the project “Fluorinated PLGA-PEO dendrimers as ¹⁹F MRI Nanotheranostics for osteosarcoma management (FINE)” at the Cell Material BioLAB. *In vitro* engineering of biomaterials as scaffolds in co-culture with different cell lines, in order to develop 3D models of tumoral tissues.
Main techniques: cell cultures, spheroids, 3D co-cultures, cytotoxicity assays, immunofluorescence, fluorescence microscopy, RT-qPCR
Supervisor: dr. Monica Montesi
- **01.10.2022 – 30.09.2023: Assegnista di ricerca (Research fellow)**
University of Padova – Department of Molecular Medicine (Via Gabelli 63, PD)
Main activities: modeling human cytomegalovirus (HCMV) infection in early brain development, using human brain organoids (established *in vitro* from pluripotent stem cells) and neural progenitor cells as models. Testing the neuroprotective effects of known and novel antiviral drugs on brain organoids and neural progenitors. Characterization of brain organoids by immunofluorescence, RT-qPCR and Western Blot.
In a parallel project, new antiviral compounds against human papillomavirus (HPV) were evaluated using cytotoxicity assays and ELISA.
Main techniques: 3D cultures, organoids, stem cells cultures, cytotoxicity assays, PCR, RT-qPCR, Western blot, classic virology techniques (infection of cell cultures, titrations, amplification of viral stocks), immunofluorescence, ELISA, work in BLS-2.
Supervisors: Prof.ssa Arianna Loregian, Prof.ssa Marta Trevisan.
- **01/12/2021 - 31/07/2022: Research fellow**
Max von Pettenkofer Institute & Ludwig-Maximilians University (Pettenkoferstr. 9, Munich)
Main activities: characterization of the different roles of restriction-modification systems in the gastric pathogen *Helicobacter pylori* and their diversity among bacterial populations.
Main techniques: PCR, cloning, nucleic acids extraction, agarose gel electrophoresis, PAGE, bacterial cultures, work in BLS-2.
Supervisor: Prof. Sebastian Suerbaum.

EDUCATION

- **01/10/2018 – 19/03/2021: Master’s degree in Pharmaceutical Biotechnology (LM-9)**
Obtained on 19/03/2021 at Alma Mater Studiorum-University of Bologna
Final grade: 110/110 con lode
Main subjects of study: cellular biochemistry, molecular biology, cellular physiology, microbiology and virology, immunology, biosensors, pharmacology, toxicology, functional genomics, proteomics, pharmaceutical nano- and micro-systems.
Title of experimental thesis: "The chemokine UL128 of human cytomegalovirus (HCMV): cloning and characterization of two HCMV mutants carrying mutations affecting UL128 function". The thesis work was performed at the Max von Pettenkofer Institute & Ludwig-Maximilians University

(Munich, Germany).

Supervisors: Prof. Giorgio Gallinella, Prof. Barbara Adler.

- **01/10/2015 – 20/07/2018: Bachelor degree in Biotechnology (L-2)**
Obtained on 20/07/2018 at Alma Mater Studiorum-University of Bologna
Final grade: 110/110 con lode
Main subjects of study: cell biology, molecular biology, genetics, biochemistry, microbiology, organic and inorganic chemistry, structural biology, pathology and immunology.
Title of experimental thesis: “Nanomechanical characterization of microglia cells by atomic force microscopy”.
Supervisor: Prof. Giampaolo Zuccheri.
- **01/09/2010 – 30/06/2015: High school diploma**
Obtained on 30/06/2015 at Liceo Scientifico “L. Da Vinci” di Jesi (AN)
Final grade: 94/100.

PARTECIPATION TO RESEARCH ACTIVITIES

- **01/07/2020 - 31/01/2021: Master’s thesis student**
Max von Pettenkofer Institute & Ludwig-Maximilians University (Munich, Germany)
Thesis work performed with a scholarship from Dipartimento di Farmacia e Biotecnologie of University of Bologna.
Main activities: cloning of 2 HCMV strains as BACs using traceless mutagenesis, reconstitution of viruses and characterization of infectivity, titer, tropism and replication in different cell types.
Evaluation of their chemoattractive function on THP1 monocytes.
Main techniques: molecular biology techniques, cell cultures, virology techniques, Western Blot, immunofluorescence, FACS, monocyte migration assays, work in BSL-2.
Supervisor: Prof. Giorgio Gallinella. Co-supervisor: Prof. Barbara Adler.
- **01/03/2018 - 01/07/2018: Bachelor thesis student**
Dipartimento di Farmacia e Biotecnologie - University of Bologna
Thesis work, title “ Nanomechanical characterization of microglia cells by atomic force microscopy”
Main activities: using AFM for nanomechanical measures on microglia cells, fixed or viable, in physiological conditions or upon LPS exposure. Data elaboration by dedicated software and Matlab.
Supervisor: Prof. Giampaolo Zuccheri.

OTHER ACTIVITIES

Extracurricular collaboration (150 hours) in the facilities of the Department of Pharmacy and Biotechnology of University of Bologna (2018 and 2019).

PUBLICATIONS

- Trevisan, M., Pianezzola, A., Onorati, M., **Apolloni, L.**, Pistello, M., Arav-Boger, R., Palù, G., Mercorelli, B., & Loregian, A. (2024). Human neural progenitor cell models to study the antiviral effects and neuroprotective potential of approved and investigational human cytomegalovirus inhibitors. *Antiviral Research*, 223. <https://doi.org/10.1016/j.antiviral.2024.105816>

LANGUAGES

Native language: Italian

Other languages: English (level 6,5 IELTS)

Level: Understanding (listening, writing) C1, Speaking B2, Writing B2

DIGITAL COMPETENCE

- Office: Word, Excel, Access, Power Point, Outlook.
- Bioinformatics software: BLAST, Snapgene, Rastop

CERTIFICATES

- IELTS Academic - level 6,5 - 05/03/2020
- ECDL Core (European Computer Driving Licence)

PRIZES

- Annual scholarships for bachelor and master's courses (by Regione Emilia Romagna)
- Scholarship to perform the master's thesis abroad (2020) awarded by the Department of Pharmacy and Biotechnology of the University of Bologna.

13/05/2024

Apolloni Lorenzo