

CV

Lorenzo Apolloni

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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 cum laude
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) under the supervision of prof. Barbara Adler.
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 cum laude
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.

WORK EXPERIENCE

- **04/11/2024 – present: PhD student**
University of Chieti–Department of Neuroscience, Imaging and Clinical Science (Chieti, IT) & Institute of Science, Technology and Sustainability for Ceramic Materials (ISSMC-CNR) (Faenza, IT).
Design and development of biomimetic, scaffold-based 3D *in vitro* cellular models to recapitulate osteosarcoma complexity, with the aim to study the tumor microenvironment and facilitate the screening of therapeutic agents.
Main techniques: cell cultures, spheroids, 3D co-cultures, cytotoxicity assays, immunofluorescence, fluorescence microscopy, RT-qPCR, Western Blot, Scanning Electron Microscopy, Dynamic Mechanical Analyzer
Supervisors: dr. Monica Montesi, prof. Stefania Fulle
- **01/02/2024 – 31/10/2024: Research fellow (Assegnista di ricerca)**
Institute of Science, Technology and Sustainability for Ceramic Materials (ISSMC-CNR), Faenza (IT)
The activities that were carried out at the Cell Material BioLAB included: collaboration to the

project “Fluorinated PLGA-PEO dendrimers as ^{19}F MRI Nanotheranostics for osteosarcoma management (FINE-PRIN2022)”; *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: Research fellow (Assegnista di ricerca)**

University of Padova – Department of Molecular Medicine (IT)

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. Arianna Loregian, Prof. Marta Trevisan.

- **01/12/2021 - 31/07/2022: Research fellow**

Max von Pettenkofer Institute & Ludwig-Maximilians University (Germany)

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.

PARTECIPATION TO RESEARCH ACTIVITIES AS UNDERGRADUATE

- **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.

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 (IELTS Academic level 6,5 – 05/03/2020)

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

PARTICIPATION TO CONFERENCES

- 24-28/06/2024: Tissue engineering & regenerative medicine world congress (TERMIS) – Seattle, USA
- 8-10/07/2024: annual congress of the Italian Society for Biomaterials (SIB) – Faenza, Italy
- 9-11/10/2024: Doctoral school of nanomedicine – Firenze, Italy
- 18-20/12/2024: consortium meeting of the EU PREDICTOS project – Lisbon, Portugal
- 19-23/05/2025: JRC-EU summer school on non-animal approaches in science – Ispra, Italy

OTHER ACTIVITIES

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

DIGITAL COMPETENCES

- 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 AND AWARDS

- 2024: “Best poster presentation” award at the annual congress of the Italian Society of Biomaterials (SIB) – Faenza, Italy
- 2020: Scholarship to perform the master’s thesis abroad awarded by the Department of Pharmacy and Biotechnology of the University of Bologna.
- Annual scholarships for bachelor and master’s courses (by Regione Emilia Romagna)