

WORK EXPERIENCE

(mm/yy)

- 02/2025 – on going **Postdoctoral Researcher**
 Dept of Biochemical Sciences "A. Rossi Fanelli". Sapienza University, Rome, Italy
 Project Title: "*Development and characterization of ferritin-based nanoparticles for targeted drug delivery*". Scientific director Prof. Alberto Boffi
- 03/2023 – 12/2023 **Academic Tutoring Activities – Collaboration Grant**
 Dept of Biochemical Sciences "A. Rossi Fanelli". Sapienza University, Rome, Italy
- 09/2022 – 01/2023 **Academic Tutoring Activities – Collaboration Grant**
 Dept of Biochemical Sciences "A. Rossi Fanelli". Sapienza University, Rome, Italy
- 08/2020 – 11/2020 **Biomedical Laboratory Technician - Full time**
 Sant'Anna Hospital, Castelnovo né Monti (RE), Italy
- 01/2019 – 08/2019 **Academic Tutoring Activities – Collaboration Grant**
 Dept of Medical-surgical Sciences and Biotechnologies. Sapienza University, Latina, Italy

EDUCATION AND TRAINING

(mm/yy)

- 11/2021 – 1/2025 **Life Science, Ph.D. (XXXVII cycle)**
 Dept of Biochemical Sciences "A. Rossi Fanelli". Sapienza University, Rome, Italy
 Thesis title: "*Redesigning Human Ferritin Nanocages for Therapeutic Applications: From Cancer Treatment to Hypercholesterolemia Management*". Supervisor: Prof. Alessandra Bonamore
- 08/2024 – 2/2025 **Visiting PhD Student**
 Randall Centre for Cell & Molecular Biophysics, King's College, London
 Research projects on "*Investigation of the RNA binding mechanism of La-related binding proteins*" under the supervision of Prof. Sasi Conte
- 1/06/2023 – 30/06/2023 **Visiting PhD Student**
 Dept of Biochemical Sciences. Charles University, Hradec Králové, Czech Republic
 Collaborative research projects under the supervision of Prof. Tomáš Šimůnek
- 11/2019 – 10/2021 **Pharmaceutical Biotechnology, Master's Degree**
 Sapienza University, Rome, Italy
 Experimental thesis at the Dept of Biochemical Sciences "A. Rossi Fanelli".
 Title: "*Development and characterization of a ferritin-dendrimer hybrid nanoparticle for biomedical applications*". Supervisor Prof. Alessandra Bonamore
 Vote: 110/110 cum Laude
- 10/2016 – 11/2019 **Biomedical Laboratory Techniques, Bachelor's degree**
 Sapienza University, Rome, Italy
 Experimental thesis at the Dept of Biochemical Sciences "A. Rossi Fanelli".
 Title: "*Development of a purification protocol for recombinant ferritins intended for biomedical applications*". Supervisor Prof. Alessandra Bonamore
 Vote: 110/110 cum Laude

RESEARCH ACTIVITY

Protein engineering for drug delivery

This research centres on the development of innovative ferritin-based nanocarriers tailored for the targeted delivery of imaging agents and therapeutics to tumor cells. Particular attention is devoted to facilitating the targeted delivery of unconventional drugs, including therapeutic proteins, peptides, and small RNA molecules.

Metabolomics The research focuses on developing and validating chromatographic and mass spectrometric methods to analyse metabolic profiles in various physiological and pathological conditions. It emphasizes targeted and untargeted metabolomics applied to cancer, inflammatory diseases, lipid storage disorders. Additionally, a segment of the research is dedicated to the application of metabolomics to plant/host interactions and the assurance of food quality and safety.

ABROAD RESEARCH ACTIVITY

Investigation of the RNA binding mechanism of La-related proteins (King's College, London)

This research investigates the RNA binding mechanisms of LaRP4A and LaRP6, focusing on how they discriminate distinct RNA target despite their similarity. Structural, biophysical, and biochemical approaches have been employed to elucidate the molecular basis of this specificity, with particular attention to the role of the protein's intrinsically disordered regions in RNA recognition and binding.

CONGRESS

- **Poster presentation** South Coast RNA UK Meeting, London, January 10, 2025. *"Unveiling the role of intrinsic disorder in RNA binding and structural dynamics of LaRP4B"*
- **Poster presentation** National Ph.D. Meeting, Bologna, Italy, March 25–27, 2024 *"Tailoring hydrophobicity in human H ferritin for targeted delivery of ellipticine and doxorubicin to tumor cells"*
- **Oral presentation** NanoInnovation, Rome, September 22, 2023 *"Engineered ferritin nanoparticles for biomedical applications: tailoring the external and internal surfaces for enhanced functionality"*
- **Poster presentation** Highlighting the Research Activity of the Sapienza Faculty of Pharmacy and Medicine, Sapienza University of Rome, January 2023 *"Biotechnology: From Diagnosis to Therapy"*

AWARDS

- *"Laureato Eccellente"* Faculty of Pharmacy and Medicine Academic Year 20-21. Fondazione Roma Sapienza

PERSONAL SKILLS

Technical skills

- Cloning, expression, and purification of recombinant proteins from bacterial systems, including the production of isotopically labelled proteins (^{15}N , ^{13}C) for NMR studies, as well as extraction and purification of plant proteins. Techniques: PCR, electrophoresis, chromatography using the ÄKTA Pure system, tangential ultrafiltration.
- Protein characterization and protein-protein interaction studies using UV-vis, fluorescence, circular dichroism spectroscopy, bio-layer interferometry, ELISA assays, and analytical HPLC with UV-vis and fluorescence detection.
- Structural and biophysical analysis of proteins through SEC-MALS, SEC-SAXS, MicroScale Thermophoresis (MST), Differential Scanning Calorimetry (DSC), and Mass Photometry.
- Development and validation of analytical methods for metabolome studies using GC-MS and HPLC.
- Use and maintenance of eukaryotic cell cultures (HeLa and HL-60 cell lines), including MTT assay, basic knowledge and use of flow cytometry (Sony Spectra SA380 cell analyzer), and fluorescence microscopy (Nikon Eclipse Ti).

Informatic skills

- Basic knowledge and use of bioinformatic tools (MarvinSketch, ChemSketch, Autodock, LigandScout, Chimera, PyMOL).

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