

## Roberta Piacentini

## EDUCATION AND TRAINING

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- 2020 July 22<sup>nd</sup> • Master degree in Physics (LM-17), "Sapienza" University of Rome (curriculum in Biophysics)  
Thesis title: Brillouin microscopy for all optical microglial cells biophysical characterization.
  - 2020 Nov 1<sup>st</sup> – 2023 Oct 31<sup>st</sup> • PhD in Biochemistry, "Sapienza" University of Rome  
In collaboration with the Italian Institute of Technology in Rome  
Thesis title: Macromolecular interactions in solution - Interferometric and turbidimetric studies
  - 2024 Jan 1<sup>st</sup> – present • Grant for collaboration in research activities, "Sapienza University of Rome" (FIS/03)

## PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s)

English Certificate in Advanced English (Council of Europe Level C1) in Cambridge ESOL Examinations

**Research field** Proteins purification and characterization, molecular kinetics, molecular binding analysis, fluorescence and bioluminescence analysis, confocal and Brillouin microscopy

**Computer skills** MATLAB, C, Python (beginner level), LaTeX typesetting and publishing, good command of Microsoft Office tools

**Other skills** Tutoring students: since 2015 I have been tutoring high school students in scientific subjects.

**Driving licence** B

## Publications

- Macone, A., Cappelletti, C., Incocciati, A., **Piacentini, R.**, Botta, S., Boffi, A., & Bonamore, A. (2024). Challenges in Exploiting Ferritin Nanoparticles for Drug Delivery: Navigating Physiological Constraints. SUBMITTED TO *WIREs Nanomedicine and Nanobiotechnology*, UNDER REVISION.
- Incocciati, A., Cappelletti, C., Masciarelli, S., Liccardo, F., **Piacentini, R.**, Giorgi, A., Bertuccini, L., De Berardis, B., Fazi, F., Boffi, A., Bonamore, A., & Macone, A. (2024). Ferritin-based disruptor nanoparticles: a novel strategy to enhance LDL cholesterol clearance via multivalent inhibition of PCSK9/LDL receptor interaction. *Protein Science*. 33(9):e5111. <https://doi.org/10.1002/pro.5111>.
- **Piacentini, R.**, Boffi, A., & Milanetti, E. (2024). Lactoferrins in Their Interactions with Molecular Targets: A Structure-Based Overview. *Pharmaceuticals*, 17(3), 398. <https://doi.org/10.3390/ph17030398>
- Incocciati, A., Kubeš, J., **Piacentini, R.**, Cappelletti, C., Botta, S., Bertuccini, L., Šimůnek, T., Boffi, A., Macone, A., & Bonamore, A. (2023). Hydrophobicity-enhanced ferritin nanoparticles for efficient encapsulation and targeted delivery of hydrophobic drugs to tumor cells. *Protein Science*, e4819. <https://doi.org/10.1002/pro.4819>
- Kubiak, M., Krol, M., Gorczak, M., Krzemiński, Ł., Marszałek, I., Kurpiel, D., Białasek, M., Gorka, E., Guzek, J., Skórzyński, M., Rygiel, T. P., Kutner, J., Kisiala, M., Wozniak, K., Parisi, G., **Piacentini, R.**, Boffi, A., & Kucharzewska, P. (2023). Investigating the mechanisms of heavy-chain ferritin uptake by macrophages: Implications for drug delivery and immunotherapy. SUBMITTED TO *Nature Communications*, UNDER REVISION.
- Parisi, G.\*, **Piacentini, R.\***, Incocciati, A., Bonamore, A., Macone, A., Rupert, J., Zacco, E., Miotto, M., Milanetti, E., Tartaglia, G. G., Ruocco, G., Boffi, A., & Di Rienzo, L. (2023). Design of protein-binding peptides with controlled binding affinity: The case of SARS-CoV-2 receptor binding domain and ACE2-derived peptides. *Frontiers in Molecular Biosciences*, 10, p.1332359. <https://doi.org/10.3389/fmolb.2023.1332359>
- Affatigato, L., Sciortino, A., Sancataldo, G., Incocciati, A., **Piacentini, R.**, Bonamore, A., Cannas, M., Messina, F., Licciardi, M., & Militello, V. (2022). Engineered ferritin with Eu<sup>3+</sup> as a bright nanovector: A photoluminescence study. *Photochemistry and Photobiology*, 99(5), pp.1218-1224. <https://doi.org/10.1111/php.13759>
- Miotto, M., Di Rienzo, L., Gosti, G., Bo, L., Parisi, G., **Piacentini, R.**, Boffi, A., Ruocco, G., & Milanetti, E. (2022). Inferring the stabilization effects of SARS-CoV-2 variants on the binding with ACE2 receptor. *Communications biology*, 5(1), 1–13. <https://doi.org/10.1038/s42003-021-02946-w>
- **Piacentini, R.**, Centi, L., Miotto, M., Milanetti, E., Di Rienzo, L., Pitea, M., Piazza, P., Ruocco, G., Boffi, A., & Parisi, G. (2022). Lactoferrin inhibition of the complex formation between ACE2 receptor and SARS-CoV-2 recognition binding domain. *International Journal of Molecular Sciences*, 23(10), 5436. <https://doi.org/10.3390/ijms23105436>
- Spizzichino, S., Boi, D., Boumis, G., Lucchi, R., Liberati, F. R., Capelli, D., Montanari, R., Pochetti, G., **Piacentini, R.**, Parisi, G. Et al. (2022). Cytosolic localization and in vitro assembly of human de novo thymidylate synthesis complex. *The FEBS Journal*, 289(6), 1625–1649. <https://doi.org/10.1111/febs.16248>

\* The authors contributed equally to the present work

- Conferences**
- **June 6<sup>th</sup> – 9<sup>th</sup> 2022** XXXIII National meeting “**A. Castellani**” of PhD students in biochemical sciences, Brallo di Pregola (PV), Italy, *Invited speaker*
  - **November 6<sup>th</sup> – 10<sup>th</sup> 2023** **XVI International Conference on Lactoferrin - Structure, Function and Applications**, Rome (RM), Italy, *Invited speaker*
  - **December 6<sup>th</sup> – 7<sup>th</sup> 2023** **Prometeus internal workshops on knowledge acquired and knowledge return phase**, online event, *Invited speaker*
- Training course**
- **February 29<sup>th</sup> – March 1<sup>st</sup> 2024** **Co.In.Fo. (Consorzio Interuniversitario sulla Formazione) School of Management in Research** training course (certificate of attendance and positive final evaluation)
- Projects**
- **May 1<sup>st</sup> – July 31<sup>st</sup> 2023** Participation to PROMETEUS project. The Protein and Membrane Technology Consortium (ProMeTeus) promotes the integration of Academia and SME in combining excellent science with entrepreneurial approach and high-throughput methodologies. This project has received funding from the European Union's H2020-MSCA-RISE-2018 Research and Innovation program under the Marie Skłodowska-Curie (Grant Agreement No.823780)
- References**
- **Prof. Alberto Boffi**  
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  - **Prof. Giancarlo Ruocco**  
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Viale Regina Elena 291, 00161, Rome  
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*Date*

Rome,  
October 22<sup>nd</sup> 2024