# ILARIA OTTONELLI

Lab Nanotech, Te.Far.T.I. Lab
Department of Life Sciences
University of Modena and Reggio Emilia
ORCID: 0000-0002-2135-2422

DOB 05.02.1994
Via Mons. L. Boni 15, 41122 Modena
Mobile: +39 3293479800
ilaria.ottonelli@unimore.it

## PROFESSIONAL EXPERIENCE

*Feb 2025:* National Scientific Abilitation (**ASN**)
Associate Professor, Sector CHEM-08/a, Technology, Socioeconomics and Regulation of Medicinal and Health and Wellbeing Products

*Starting Oct 2023*: **Researcher (RUTD-A)**, Te.Far.T.I. / Nanotech Lab, University of Modena and Reggio Emilia (Italy)
PNRR project CN_3 – National Center for Gene Therapy and Drugs based on RNA Technology – Spoke 1 "Genetic Diseases"

*Nov 2022 – Sep 2023*: **Post-doctoral Research fellow**, University of Modena and Reggio Emilia (Italy)
Investigating Mechanisms and Models Predictive of Accessibility of Therapeutics: development of novel nanomedicines (NMeds) for the delivery of therapeutic molecules to the brain against difficult to treat diseases.

*2019 – 2022*: **PhD in Nanomedicine**, Clinical and Experimental Medicine PhD School, University of Modena and Reggio Emilia
Co-tutored with the University of Angers, France
*Thesis Title*: Advanced Nanotechnologies for the Central Nervous System: Design, Optimization, Application, and Scale-up

## EDUCATION

*2019 – 2022*: **PhD** in Clinical and Experimental Medicine - Nanomedicine, University of Modena and Reggio Emilia / double degree w/ University of Angers, FR

*2013 – 2018:* **Master's degree** in Medicinal
Chemistry, University of Modena and Reggio Emilia: mark: 110/110 with honors

## AWARDS AND GRANTS

Travel award (1500 USD) to attend CRS Global 2023 Meeting (Las Vegas, USA)

Grant 2025-1-RD Nanobiotech by Joint Research Center – European Commission – CHANGE: CHolesterol Advanced Nanomedicines for targeted GEne Therapy

## RESEARCH FOCUS

Expertise in design and production of lipid and cholesterol-based nanocarriers for central nervous system delivery, with specific focus on blood–brain barrier crossing systems. Extensive experience in cholesterol-mediated brain targeting, relevant to neurodegenerative disorders including Huntington's disease and mitochondrial pathologies. Strong translational orientation toward scalable nanomedicine platforms for neurological diseases.

## RECENT RELEVANT PUBLICATIONS

1. Anderlini, A.; Sabelli, M.; et al., **Ottonelli, I.*** Lipidic Nanomedicines Enhance Hinokitiol Activity on Human Primary Macrophages from Ferroportin Disease Patients. International Journal of Pharmaceutics 2026, 689, 126487, doi:10.1016/j.ijpharm.2025.126487.
2. **Ottonelli, I.**; et al. Advantages and Challenges of Polymer-Lipid Hybrid Nanoparticles for the Delivery of Biotech Drugs. Nanomedicine 2025, doi:10.1080/17435889.2025.2457930.
3. **Ottonelli, I.**; et al. Strategies for Improved pDNA Loading and Protection Using Cationic and Neutral LNPs with Industrial Scalability Potential Using Microfluidic Technology. IJN 2024, 19, 4235–4251, doi:10.2147/IJN.S457302.
4. **Ottonelli, I.**; et al. Optimization of an Injectable Hydrogel Depot System for the Controlled Release of Retinal-Targeted Hybrid Nanoparticles. Pharmaceutics 2023, 15, 25, doi:10.3390/pharmaceutics15010025.
5. Birolini, G.; Valenza, M.; **Ottonelli, I.**; et al. Chronic Cholesterol Administration to the Brain Supports Complete and Long-Lasting Cognitive and Motor Amelioration in Huntington's Disease. Pharmacological Research 2023, 194, doi:10.1016/j.phrs.2023.106823.
6. **Ottonelli, I.**; et al. Microfluidic Technology for the Production of Hybrid Nanomedicines. Pharmaceutics 2021, 13, 1495, doi: 10.3390/pharmaceutics13091495
7. Birolini, G.; Valenza, M.; **Ottonelli, I.;** et al. Insights into Kinetics, Release, and Behavioral Effects of Brain-Targeted Hybrid Nanoparticles for Cholesterol Delivery in Huntington's Disease. Journal of Controlled Release 2021, 330, 587–598, doi:10.1016/j.jconrel.2020.12.051.

## TEACHING AND TUTORING

2025/26 *Preformulation* – Master's Degree in Pharmaceutical Chemistry and Technology

2024/25, 2025/26 Pharmaceutical Nanotechnology – Master's Degree in Bioengineering for Innovation in Medicine

2023/24, 2025/26 *Lab of Targeting and Delivery Systems* – Master's Degree in Pharmaceutical Chemistry and Technology

Supervisor for > 10 master's students (thesis)

## RESEARCH PRODUCTS

*H-Index: 15*
*Publications:* 28
*Citations:* > 550

>10 Conference talks
> 15 posters
6 first author, 2 corresp.

## LANGUAGES

Native Italian, English C1