

CURRICULUM VITAE

SOFIA BONSIGNORE

Contact Information

Nationality: Italian | Date of Birth: 26/06/1999

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Location: Palermo, Italy

PROFESSIONAL SUMMARY

Dedicated and passionate PhD Candidate in Molecular and Biomolecular Sciences with a strong background in polymer chemistry, nanomedicine, and advanced drug delivery systems. Proven experience in designing novel polymer and lipid-polymer hybrid nanocarriers for pulmonary siRNA and small-molecule administration. Skilled in formulation design, inhalation delivery systems, and interdisciplinary academic research with international exposure.

EDUCATION & ACADEMIC TRAINING

PhD Candidate in Molecular and Biomolecular Sciences (Cycle XXXIX)

University of Palermo, Italy | [Nov 2023 – Present]

- Focus: Development of advanced nanostructured platforms and polymeric carriers for inhaled targeted gene delivery and pulmonary therapy.

Master's Degree in Pharmacy (Single-Cycle)

University of Palermo, Italy | [2018 – 2023]

- Final Grade: 110/110 cum laude (With Honors).

RESEARCH & ACADEMIC MOBILITY

Visiting PhD Researcher

Ludwig-Maximilians-Universität München (LMU Munich), Germany | [Feb 2025 – Aug 2025]

- Department of Pharmacy, Pharmaceutical Biotechnology.
- Supervisors: Prof. Dr. Olivia Merkel and Dr. Benjamin Winkeljann.
- Focus: Research on advanced siRNA delivery systems, nanocarrier characterization, and pulmonary administration platforms.

WORK EXPERIENCE

Pharmacist

Farmacia Ponte Oreto di Pietro Muratore – Palermo, Italy | [Aug 2023 – Oct 2023]

- Managed pharmaceutical care, patient counseling, and drug distribution.

PUBLICATIONS

1. **Bonsignore S**, Jiang M, Drago SE, Scialabba C, Deßloch L, Sturm S, Craparo EF, Müller-Caspary K, Merkel OM, Cavallaro G. Tailoring Zein-Based Lipid–Polymer Hybrid Vectors for Efficient Pulmonary siRNA Delivery by Nebulization. *European Polymer Journal* (**In press**)
2. **Bonsignore S**, Drago SE, Scialabba C, Licciardi M, Craparo EF, Cavallaro G. Modified pullulan unlocks efficient polyplex-mediated gene silencing following nebulization. *Int J Biol Macromol*. 2026 Jul 27;377:153787. doi: 10.1016/j.ijbiomac.2026.153787.
3. **Carbone A**, Soccio P, Craparo EF, Vitullo P, **Bonsignore S**, Tondo P, Scialabba C, Sajid N, Jahani S, Drago SE, Di Gioia S, Lacedonia D, Cavallaro G, Conese M. Iloprost-loaded inhalable Nano into Micro (NiM) formulations for treating hyper-inflammation in a pre-clinical model of cystic fibrosis airway epithelial cells. *Drug Deliv Transl Res*. 2026 Mar 21. doi: 10.1007/s13346-026-02101-0.
4. **Scialabba C**, Craparo EF, **Bonsignore S**, Cabibbo M, Cavallaro G. Lipid–Polymer Hybrid Nanoparticles in Microparticle-Based Powder: Evaluating the Potential of Methylprednisolone Delivery for Future Lung Disease Treatment via Inhalation. *Pharmaceutics*. 2024.

CONFERENCE PRESENTATIONS & TALKS

- **Oral Presentation:** “Zein-Based Lipid-Polymer Hybrid Nanocarriers for Inhaled siRNA Delivery by Nebulization.”

ETPN2026 - 21st Annual Event of the European Technology Platform on Nanomedicine, Jointly organized by ETPN and RCSI, Royal College of Surgeons in Ireland, Dublin [June 17–19, 2026].

- **Flash Presentation:** “Inhalable Pullulan-based nanocarriers for efficient pulmonary siRNA delivery and gene silencing.”

14th Galenus International Workshop, Supported by Università degli Studi di Napoli Federico II, Naples, Italy [May 18–19, 2026].

- **Oral Presentation:** “Comparative Insights into nanostructured formulations based on polyaspartamide-zein copolymer: Potential platforms for siRNA delivery by inhalation.”

2nd SITELF National PhD Summer School – XXIV ADRITELF National PhD School, Palermo, Italy [Sept 2–4, 2025].

- **Attendance:** *1st SITELF National PhD Summer School – XXIII ADRITELF National PhD School*, Pavia, Italy [Sept 2–4, 2024].

INSTITUTIONAL ROLES & STUDENT REPRESENTATION

- **Student Representative (PhD Candidates):** Academic Board of the PhD Course in "Molecular and Biomolecular Sciences" (Cycle XXXIX), University of Palermo.
- **Departmental Representative:** PhD Student Representative on the Board of the Department of Biological, Chemical and Pharmaceutical Sciences and Technologies (STeBiCeF), University of Palermo [Biennium 2025 – 2027].

HONORS, AWARDS & BADGES

- **Fondazione Crimi Award – #CasaFarmacia Project 2023 & 2022 (1st Place):** Awarded for academic excellence to deserving pharmacy students.
- **Digital Open Badges & Certifications:**
 - Open Badge for Language Proficiency / Advanced Linguistic Skills. *Verify Badge:*
<https://openbadges.bestr.it/public/assertions/ppCtnUbeQHSlMh8CT80qNw>
 - Open Badge for Academic & Student Representation. *Verify Badge:*
<https://openbadges.bestr.it/public/assertions/TRNsQ196S2Chk-Fxs35Bwg>

SKILLS & COMPETENCIES

- **Languages:** Italian (Native), English (B1 Independent / Professional Proficiency).
- **Technical & Software Skills:** Microsoft Office (Word, Excel, PowerPoint), ChemDraw, Adobe Illustrator, Adobe Photoshop, OriginPro.
- **Driving Licence:** EU Category B.