Curriculum Vitae et Studiorum – Luigi Musciacchio

Education and trainings

☐ **Ph. D in Reproduction and Developmental Sciences | 11.2020 – Current | University of Trieste, Italy**

Experimental thesis: "*Development and characterization of polymeric electrospun membranes with antimicrobial properties for ureter regeneration*", performed at the Maxillofacial Surgery and Odontostomatology Clinic Research Laboratory, Maggiore Hospital, Trieste

- Development of **antibacterial nanofibrous electrospun membranes** based on synthetic polymers
- ***In situ* synthesis** of nanoparticle-based systems
- **Morphological and physicochemical characterization:** Scanning Electron Microscopy (SEM), Energy Dispersive Spectroscopy (EDS), degradation studies, wettability, release kinetics of antimicrobial compounds
- **Mechanical characterization:** tensile and compressive analysis
- ***In vitro* biological characterization**: proliferation and cytotoxicity tests on murine fibroblasts (NIH-3T3), osteosarcoma-derived cells (MG-63), human urothelial bladder carcinoma cells (UCs - line 647-V), and human dental pulp stem cells from adult donor; antibacterial assays (inhibitory and bactericidal activity)
- **Planning**, **executing**, and periodically **reporting** the experimental workflow
- **Writing of scientific documentation**: scientific publications, laboratory protocols, and posters (**TERMIS-EU conference**, Krakow, 28.06.2022 – 01.07.2022; **TERMIS-UE conference**, Manchester, UK, 28.03.2022 – 31.03.2023).

☐ **Secondment period as Visiting Research Student** | Friedrich-Alexander-Universität Erlangen-Nürnberg University | **01/11/2022 – 23/02/2023**

☐ **National qualification to practice the biologist profession (SEZ.A) | 12.2020 | – University of Salento (UniSalento)**

☐ **Master's Degree in Medical Biotechnologies, curriculum *Medical and Pharmaceutical Biotechnologies* (LM-9) | 10.2017 – 03.2020 | University of Trieste, Italy**

05/01/2024

Experimental thesis: "Development and characterization of electrospun membranes for biological tissue regeneration", performed at the Maxillofacial Surgery and Odontostomatology Clinic Research Laboratory, Maggiore Hospital, Trieste

Final Grade: 108/110

☐ Bachelor's Degree in Biological Sciences (L-13) | 10.2014 – 10.2017 | University of Ancona, Italy

Final Grade: 102/110

Work experience

☐ Tutoring activity for the teaching "Biomaterials and tissue engineering" (MED-50) | 2021-2022 | University of Trieste, Italy

Teaching and student support in the experimental sections as well as in the drafting of the laboratory reports

Digital skills

- Microsoft Office package (Word, Excel, Power Point, Teams)
- GraphPad Prism
- Origin Pro
- ImageJ/Fiji
- ChemDraw
- Outlook
- Zoom | Skype | Google Meet
- LinkedIn

Language skills

Italian: native | **English**: Fluent

Experimental Techniques

Fabrication:

- Polymeric solutions| Electrospinning| *In situ* synthesis of nanoparticles

Characterization:

- Microscopy (Scanning Electron Microscope with EDS analysis, bright-field, epifluorescence, and fluorescence microscopes) | UV-Vis and fluorescence spectroscopy| ATR-FTIR| Mechanical tests (tensile and compressive) | Indentation tests| Roughness analysis| Contact Angle measurements

Biological tests:

- Cell culture| Proliferation| Cytotoxicity| Biochemical assays| Antibacterial tests (inhibitory and bactericidal activity

List of publications

- Gruppuso, Martina; Guagnini, Benedetta; **Musciacchio, Luigi**; Bellemo, Francesca; Turco, Gianluca; Porrelli, Davide. 'Tuning the Drug Release from Antibacterial Polycaprolactone/Rifampicin-Based Core–Shell Electrospun

Membranes: A Proof of Concept'. ACS Applied Materials & Interfaces, 2022 14 (24), 27599–27612. https://doi.org/10.1021/acsami.2c04849.

- **Musciacchio, Luigi**; Mardirossian, Mario; Guagnini, Benedetta; Raffini, Alessandra; Rizzo, Michele; Trombetta, Carlo; Liguori, Giovanni; Turco, Gianluca; Porrelli, Davide. 'Rifampicin-loaded electrospun polycaprolactone membranes: Characterization of stability, antibacterial effects and urotheliocytes proliferation' Materials & Design, 2022 224 111286 https://doi.org/10.1016/j.matdes.2022.111286

- Porrelli, Davide; Mario Mardirossian; **Musciacchio, Luigi**; Pacor, Micol; Berton, Federico; Crosera, Matteo; and Turco, Gianluca. 'Antibacterial Electrospun Polycaprolactone Membranes Coated with Polysaccharides and Silver Nanoparticles for Guided Bone and Tissue Regeneration'. ACS Applied Materials & Interfaces, 2021 13 (15): 17255– 67. https://doi.org/10.1021/acsami.1c01016.

I LUIGI MUSCIACCHIO, aware that false declarations imply the application of the penal sanctions as required by art.76 of D.P.R. 445/2000, declare that the information in the Curriculum Vitae is true. I also authorize the processing of my personal data pursuant to Legislative Decree 196 of 06/30/2003.

05/01/2024