Roberta Verta

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PhD student in medical physiopathology, at the end of a journey, with a degree in medical biotechnology. I conducted the studies on extracellular vesicles (EVs) and regenerative medicine. My last years were focused on EV characterization and their potential effects, not only in clinical samples and in several disease, but also to create a safe and scalable model to study virus-host cell interaction and to find new possible therapeutic approaches to modulate the virus like particle entrance and to analyze the delivery of engineered EVs to the target site.

CURRENT POSITION(S)

- *Turin, Italy - Molecular Biotechnology Center (MBC)* **October 2020-on going**
  PhD Student Medical Physiopathology- EVs and regenerative medicine
  PhD title project: "Characterization and validation of extracellular vesicles expressing SARS-CoV-2 Spike protein as a model to study virus-host interaction" (Tutor: Prof. B. Bussolati).
- *Turin, Italy - Molecular Biotechnology Center (MBC)* **2020-on going**
  Coaching of trainees and undergraduates I took care of the tutoring of bachelor's and master's degree students for the development of their experimental thesis.
- *University of Turin, Italy* **2018- on going**
  Assistant teaching "Pharmacology I and II" nursing degree (Course instructor: Prof. A.C. Rosa).

PREVIOUS POSITIONS

- *University of Turin, Italy* **September 2019- March 2020**
  Department of Scienza e Tecnologia del Farmaco
  Research scholarship "Role of AGEs and inflammatory mediators as new biomarkers for the assessment of risk factors of diet-related diseases" (Tutor: Prof. M. Collino).
- *University of Turin, Italy* **February 2019-July 2019**
  Department of Scienza e Tecnologia del Farmaco
  Attending graduate Experiences of pharmacological research in cardiometabolic pathologies and histamine in diabetic nephropathy (Tutor: Prof. A.C. Rosa).
- *University of Turin* **October 2017**
  Department of Scienza e Tecnologia del Farmaco
  Internal student Development of master's Thesis "Effects of bilastine on the progression of diabetic nephropathy in male DBA2/J mice" (Tutor: Prof. A.C. Rosa).
- *Unical, Rende, Italy* **March 2016 -May 2016**
  Department of Biology, Ecology and Earth Sciences
  Internship Histological techniques in the laboratory of physiology of systems.

EDUCATION

- *University of Turin, Italy* **June 2022-July 2022**
  24 CFU for teaching
- *Unical, Rende, Italy* **November 2019**
  Department of Biology, Ecology and Earth Sciences
  Qualification to practice the profession of biologist.
- *Turin, Italy - Molecular Biotechnology Center (MBC)* **October 2016- December 2018**
  Master's degree in medical biotechnology "Effects of bilastine

on the progression of diabetic nephropathy in male DBA2/J mice" (Tutor: Prof. A.C. Rosa). Valuation 108/110 and right of publication

- *Unical, Rende, Italy* **October 2013-September 2016**
  Department of Biology, Ecology and Earth Sciences
  Bachelor's degree in Biotechnology "Mutazioni Germinali nel cancro pediatrico" (Prof. A. Montesanto), Valuation 103/110.
  Paola, Italy- Liceo Scientifico Statale "Galilei" **September 2008-June 2013**
  Scientific diploma Valuation 100/100.

RESEARCH PROJECTS AND PUBLICATIONS

- *In vitro and in vivo* evaluation of colchicine to inhibit the cancer stem cell-EV effect on angiogenesis and metastasis formation.
- Effect of SGLT2-I on ERG expression in mice with diabetic nephropathy.
- *In vivo* model of ERG-KO mice with diabetic nephropathy.
- Phenotypic and Functional Characterization of Aqueous Humor Derived Extracellular Vesicles (DOI: 10.1016/j.exer.2023.109393).
- Generation of Spike-Extracellular Vesicles (S-EVs) as a Tool to Mimic SARS-CoV-2 Interaction with Host Cells (DOI:10.3390/cells11010146).
- The Interplay between Histamine H4 Receptor and the Kidney Function: The Lesson from H4 Receptor Knockout Mice (DOI: 10.3390/biom11101517).
- Role of AGE and inflammation mediators as new biomarkers for the assessment of risk factors of diet-related diseases.
- Metabotropic glutamate receptor blockade reduces preservation damage in livers from donors after cardiac death (DOI: 10.3390/ijms22052234).
- Baricitinib counteracts metaflammation, thus protecting against diet-induced metabolic abnormalities in mice (DOI: 10.1016/j.molmet.2020.101009).
- Effects of exogenous dietary advanced glycation end products on the cross-talk mechanisms linking microbiota to metabolic inflammation (DOI: 10.3390/nu12092497).
- Transient expression of RECK under hepatic ischemia/reperfusion conditions is associated with MAPK signaling pathways (DOI: 10.3390/biom10050747).
- Inhibition of Bruton's tyrosine kinase regulates macrophage NF-kB and NLRP3 inflammasome activation in metabolic inflammation (DOI: 10.1111/bph.15182).
- Effect of bilastine on diabetic nephropathy in DBA2/J mice (DOI: 10.3390/ijms20102554).
- JNJ39758979 Preserves Renal Aquaporin Expression Balance in a Model of Diabetic Nephropathy
- The Interplay between Histamine H4 Receptor and the Kidney Function: The Lesson from H4 Receptor Knockout Mice (DOI: 10.3390/biom11101517).

INTERNATIONAL CONFERENCES

- *3rd EVIta Symposium, Urbino*, Italy, 13th-15th September 2023 (Oral presentation).
- *Second workshop EVIta* (Italian Society of Extracellular Vesicles) connect: Fostering collaboration, *Turin*, Italy, 29th-30th September 2022 (Organizing committee).
- *NanoView User Meeting, Lyon*, *France* 25th May 2022 (Oral presentation).
- *ISEV* (International Society for Extracellular Vesicles) *2022 Annual Meeting, Lyon, France* "Technologies and methods: Characterization of EV-molecules" 25th -29th May 2022 (Poster presentation).
- EVIta 2°Symposium, Lucca, Italy "COVID-19 and extracellular vesicles" 20th-22nd September 2021 (Oral presentation).
- *ISEV virtual meeting New York, United States* "Infectious Diseases and Extracellular Vesicles"

25th-28th January 2021 (Oral presentation).

- 5*3rd Annual Meeting of the Italian Association for the Study of the* Liver (A.I.S.F.), *Rome, Italy,* 27th-28th February 2020 (Poster presentation).
- *39° National Congress of Italian Pharmacology Society SIF, Florence, Italy,* 20th-23rd November 2019 (Poster presentation).
- *International Congress of European Histamine Research Society (EHRS), Krakow, Poland,* 15th-20th May 2019 (Oral presentation).
- *International Congress of European Histamine Research Society (EHRS), Dublin, Ireland,* 30th May-2nd June 2018 (Oral presentation).

PERSONAL SKILLS AND COMPETENCES

- Technical expertise gained in the extracellular vesicle sector.
- Extensive knowledge of research tools and techniques.
- Ability to plan and conduct studies, research and related experiments.
- Capacity to apply techniques of laboratory analysis and statistical analysis.
- Ability to document research results.
- Strong oral and written communication skills
- Proactive to learn new competences.
- Capacity to work in autonomy or in team, to share information and resources with colleagues.
- Ability to work with precision and be able to understand and analyze each situation in order to highlight cause-effect relationships.
- Determined and hardworking
- Well-developed presentation skills both one on one and in front of a large audience

Software: GraphPad Prism, ImageJ, Microsoft Windows, Microsoft Office (Word, Excel, Power Point)

First language: Italian
Second language: English
Driving licence: B

TECHNICAL SKILLS

- **Animal Manipulation and drug administration:** I have the know out to perform both intraperitoneal and oral gavage administration; moreover, I learnt to evaluate glycaemic measurements in mice and to perform urine collection by metabolic cages for renal function analysis.
- **Cell Culture:** extensive experience in HEK-293T cell line (Human embryonic kidney 293 cells) transfected and not transfected, in HMEC (human microvascular endothelial cells) HK-2 (immortalized proximal tubule epithelial cell line), GEC (Glomerular endothelial cells), 16HBE14o- (human bronchial epithelial cells), SKOV3 (human ovarian adenocarcinoma), HT29 (human colon rectal cancer carcinoma), Podocytes, Caco2 (Continuous adenocarcinoma cell line) and ECK (endothelial cells of renal carcinoma) culturing in both monodimensional and bi-dimensional (transwell) system.
- **Permeability assay** in static and dynamic systems
- **MTT, Wound Healing, Migration and Invasion assays**
- **Extracellular Vesicle (EV) isolation, characterization, engineering and functional analyses:** Ultracentrifuge, Nanosight, Super Resolution Microscope, MACSPlex, ExoView, labelling EVs, EV uptake evaluation and modulation, analysis of EV effects and EV engineered from human transfected cells.

- **Molecular Biology:** proteins, DNA, RNA extraction and quantification; immunoblotting, PCR, FACS.
- **Biochemical and analytical analysis:** ELISA; HPLC.
- **Histology:** tissue and cell fixation and processing, Hematoxylin-Eosin staining, PAS staining, cytoimmunofluorescence, Immunofluorescence, Immunohistochemistry.

I authorise the processing of the personal data contained in this CV for the purposes of recruitment and selection.

Turin 28/12/2023