

FRANCESCA TADDEI

Contacts

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Date of birth: 11/11/1998

EDUCATION

Master's Degree in Molecular and Medical Biotechnology (LM-9), University of Verona – Conferred on 11 October 2023 (Final Grade: 104/110)

Thesis Title: *In Vitro and In Vivo Characterization of Radiofrequency Ablation in Pancreatic Cancer;*

Supervisors: Dr. F. De Sanctis and Prof. V. Corbo

This thesis focused on evaluating the biological and therapeutic effects of radiofrequency ablation (RFA) in pancreatic ductal adenocarcinoma (PDAC), utilizing both established in vitro PDAC cell lines and in vivo murine models. The study examined the capacity of RFA to induce targeted tumor necrosis and to generate an immediate, robust inflammatory response, thereby offering potential avenues for enhanced oncological treatment strategies.

Throughout the course of this intensive research, I acquired and refined several sophisticated technical skills, including:

- Proficient handling and care of mouse models, with a particular emphasis on conducting immunosuppression assays and evaluating cancer-associated alterations in myelopoiesis. Additionally, I gained comprehensive experience with microbead-based protocols for cell selection and depletion.
- Skilled in the careful processing of human peripheral blood samples using Ficoll density gradient centrifugation for the effective isolation and purification of neutrophils and monocytes.
- Conducted highly precise ELISA assays, quantitative real-time PCR, and chromatin immunoprecipitation (ChIP) experiments, along with meticulous DNA and RNA extraction procedures.
- Executed the isolation of bone marrow-derived cells and their controlled differentiation into macrophages and myeloid-derived suppressor cells (MDSCs) using specific cytokine cocktails.
- Selected and optimized antibody panels for accurate cytofluorimetric labeling using the BD FACS Canto II system, followed by detailed flow cytometric analysis with FLOWJO software.

This academically rigorous and methodologically rich experience significantly enhanced my expertise in translational oncology, immunobiology, and advanced molecular techniques, fostering a deeper, more critical understanding of cancer immunotherapy and experimental pathology.

Bachelor's Degree in Biotechnology (L-2), University of Verona – Conferred on 6 December 2021 (Final Grade: 102/110)

Thesis Title: *Regulation of ER Shaping Proteins via Ubiquitination;* **Supervisors:** Doc. J. Haydee Enrique Steinberg and Prof. D. Guardavaccaro.

The thesis project focused on the characterization of endoplasmic reticulum (ER) shaping proteins that play a critical role in motor neuron development and are implicated in hereditary spastic paraplegia. The study involved identifying and analyzing protein interactors, with particular emphasis on enzymes involved in the ubiquitination pathway, to elucidate mechanisms underlying protein regulation. Throughout the course of this intensive research, I acquired and refined several sophisticated technical skills, including:

- Applied a range of molecular biology techniques, including PCR, Western blotting, immunofluorescence, immunoprecipitation, transfection, and electrophoresis.
- Gained experience in plasmid design and cloning.
- Cultured and maintained multiple cell lines, including HeLa, HEK293T, and U2OS.
- Utilized bioinformatics databases and tools for sequence and protein analysis, including UniProt, NCBI, GenBank, Ensembl, and CLUSTALW.
- Engaged in ongoing collaborative discussions with supervisors to critically assess research progress and refine technical and analytical skills.

FELLOWSHIPS

- **Fellowship: “Progetto Pot Sistema Integrato di Supporto agli Studenti di Agraria (Pot10sissa) -1 esigenza (Matematica)”**, *San Floriano Villa Lebrecht* - April 2022 to June 2022. **Supervisor:** Prof. L. Meneghini.

This project involved providing academic support to enology students preparing for their mathematics examination. My responsibilities included the preparation and delivery of lessons covering key mathematical topics such as functions, matrices, and integrals.

- **Fellowship: PNRR-MAD-2022-12375871** *UO Medicina d’Urgenza, Azienda Ospedaliera Universitaria Integrata di Verona*- January 2024 to September 2025. **Supervisor:** Prof. D. Girelli.

This fellowship supports the continuation of the research project entitled “*Persistent, Aberrant Myelopoiesis as an Etiological Factor for Chronic and Metastatic Diseases.*” The study focuses on investigating the immunological profile of patients with sepsis, emphasizing the composition and functional dynamics of circulating myeloid cell populations. My role centers on characterizing these cells’ phenotypic and functional properties through flow cytometry, cytokine profiling, and transcriptomic analyses. Our results identified a distinct subset of myeloid cells in the peripheral blood exhibiting immunosuppressive and pro-inflammatory traits. This aberrant activation is implicated in fostering a pro-tumorigenic microenvironment, potentially facilitating metastatic progression.

During this time I accompanied students of the degree’s programmes in Biotechnology and Molecular and Medical Biotechnology during experiments; and trained Evelina Martinenaite (ioBiotech) on how to isolate normal density neutrophils (NDN) from peripheral blood.

CERTIFICATIONS

- Certificate of Participation in the Fire Safety Training Course: “*Formazione Antincendio*”

Rischio Incendio Elevato, Livello 3 (16 hours)”, Azienda Ospedaliera Integrata di Verona, 26 March 2024.

- Certificate of Participation in the Safety Training Course on the Use of Liquid Nitrogen: *“Corso di Formazione per l’Utilizzo in Sicurezza dell’Azoto Liquido”*, Azienda Ospedaliera Integrata di Verona, 15 October 2024.

MEETINGS

- 35th Pezcoller Symposium “Cancer as a systemic disease interactions between tumor and host” at the University of Trento on June 24th and 25th, 2024.
- XXI NIBIT meeting, Palermo on 17-19 October 2024. **Poster presentation** “Persistent, aberrant myelopoiesis as an etiological factor for chronic and metastatic diseases”.
- 3rd edition Artificial Intelligence for oncology in Milan on 8-9 May 2025.

LANGUAGES

- ENGLISH: B2-Intermediate
- ITALIAN: Native speaker