

Andrea Giglio, Ph.D.

Ph.D. level research scientist, with expertise in immunology, T cell immunotherapy, tumor-induced immune suppression, cancer vaccines, checkpoint inhibitors biology, and protein biochemistry. Extensive knowledge of immunological signaling pathways and antigen presentation pathways. Strong scientific background in molecular and cellular immunology with emphasis in solid tumor immunity (innate and adaptive), tumor-induced immune suppression and cancer immunotherapies. Excellent team player and strong builder of prolific collaborations with the ability to effectively communicate with experts from different fields, identify problems and implement creative solutions, maintain diligent laboratory records, and organize work tasks to meet deadlines. Critical interpretation and analysis of scientific literature.

SKILLS AND TECHNIQUES

Immunology • Strong experience (2019-2020) in T cell immunology, phenotyping and functional studies employing multi-colored flow cytometry techniques (BD FACS Canto II) and analysis (FlowJo and Prism). • Single-cell processing, immune cells isolation and culture proficiency from mouse and human tissue samples (tumor, lymphoid organs, blood, bone marrow). • Strong experience in antigen processing and presentation (MHC class-I and –II), functional immunoassays using primary cells and immortalized cell lines to dissect mechanisms of dysfunction in the context of cancer and immunomodulation • ELISPOT, viability, cytotoxicity, and proliferation assays, confocal microscopy, mouse syngeneic tumor, mouse strain genotyping, husbandry/colony management, mouse handling and dissection, • Mitochondria isolation and purification • DC-based vaccine preparation and immunization employing mitochondria-derived antigens.

Cellular and Molecular biology • Isolation and culture of mouse primary T cells and MDSC, T cell activation, T cell proliferation • Large-scale tissue culture, plasmid isolation from bacteria, transfection, lentiviral transduction, cell cloning, maintenance and banking • qRT-PCR, PCR, genotyping • RNA/DNA isolation, DNA sequencing • Protein extraction and purification, western blot

Nanotechnology biology • Use of Engineered Nano Materials (ENMs) on cell cultures • Study on Engineered Nano Materials (ENMs) interaction with immune system's cell populations

Other expertise: • Interpretation and critical analysis of scientific literature • Ability to effectively communicate with experts from different fields and conduct interdisciplinary research, • Ability to identify and implement creative solutions • Ability to prioritize and manage time efficiently.

Animal care • Handle and restrain • Weigh animals • Clean cages • Administer injections • Anesthetize • Maintain and evaluate animal records • Prepare for sterile surgical procedures • Perform simple surgical procedures • Implant tumors into small animals • Collect blood or other samples

Languages • Professional proficiency in English and Italian (native language).

TRAINING AND EDUCATION

- Postdoctoral senior scientist,** **September 2020 - present**
CNR NANOTEC - Istituto di Nanotecnologia,
c/o Campus Ecotekne, via Monteroni - 73100 Lecce (Italy)
Supervisor: Ilaria E. Palamà, Ph.D
Emphasis in Immune system and engineered nano materials interaction
- Postdoctoral Fellow,** **January 2019 - September 2020**
University of Pennsylvania, Philadelphia, PA, US
Supervisor: Andrea Facciabene, Ph.D.
Emphasis in cancer immunity, tumor evasion, immunotherapies and adaptive immunity
- Ph.D in Tissue and organ transplantation and cell therapies,** **November 2013 - March 2018**
Policlinico di Bari, DETO, U.O. Urologia I Universitaria, Bari, Italy
Supervisor: Prof. Michele Battaglia
Emphasis in cancer metabolism and cancer biology
Graduation date: March 8th, 2018
- Research Fellow,** **September 2012 - September 2013**
Weill Cornell Medical College, New York, NY, US
Supervisor: Dott. Giampiero D. Palermo
Emphasis in stem cell biology and gametogenesis
- M.S. in Medical biotechnology and molecular medicine,** **October 2010 - October 2013**
University of Bari "A.Moro", Bari, Italy
Mentor: Prof.ssa Maria Elena dell'Aquila
Emphasis in stem cell biology and gametogenesis
Final degree mark: 110/110

WORK EXPERIENCE

University of Pennsylvania School of Medicine

- Performed in vivo study on the effect of tumor radiation (SAARP) over DC cross-presentation, and the immunological interplay between the microbiota and tumor microenvironment
- Performed in-vivo study to test and follow the Immunological memory and how antibiotics affects its development
- Performed in vivo study on the interplay between antibiotics and the effector phase in the immune response in tumor bearing mice
- Performed single-cell isolation techniques to collect immune cells from tissues (tumor and lymphoid)
- Performed in vivo PD1 or IFNAR1 blockade
- Performed multiparameter flow cytometry (BD Canto II) to characterize immune cell populations and functionality
- Performed DNA-based immunization using in vivo electroporation to effectively deliver the construct in the muscle of treated mice
- Performed dendritic cell-based immunization using pure mitochondria lysates containing tumor-associated mitochondria antigens (TAMA) as a strategy to control tumor growth
- Performed immune staining (immunofluorescence, IF; immunohistochemistry, IHC) on mouse normal and tumor tissues
- Processed and analyzed mouse tumor (renal cancer) vs healthy samples using qRT-PCR

- Performed assays (ELISPOT) to detect different expression of IFN γ production after immunization and/or after different in vivo treatment in mice
- Managed and negotiated ordering for lab consumables, equipment, and services. Assisted in lab maintenance, organization, and sample transfer and receipt from/to different organizations

University of Bari, Policlinico di Bari

- Study on the activation of the kynurenine pathway and how this pathway can predicts the outcome in patients with clear cell renal cell carcinoma (ccRCC)
- Processed and analyzed human tumors (ccRCC, prostate, bladder) vs healthy samples
- Performed immune staining (immunofluorescence, IF; immunohistochemistry, IHC) on human normal and tumor tissues
- Performed analytical technique of molecular biology to detect specific proteins in a sample of tissue homogenate or extract (Western-blot)

MENTORING EXPERIENCE

During my Ph.D. at Policlinico di Bari I mentored 1 M.S. students

PEER-REVIEWED PUBLICATIONS

- **Journal Article:** Combination of Radiation with Heterologous TEM1 Vaccination Increases Efficacy of anti-PD-L1 Therapy [Manuscript Submitted for Publication]
- **Journal Article:** Integrated multi-omics characterization reveals a distinctive metabolic signature and the role of NDUFA4L2 in promoting angiogenesis, chemoresistance, and mitochondrial dysfunction in clear cell renal cell carcinoma. *Aging (Albany NY)*. 2018 Dec; 10(12): 3957–3985.
- **Journal Article:** Activation of the kynurenine pathway predicts poor outcome in patients with clear cell renal cell carcinoma *Urol Oncol*. 2017 Jul;35(7):461.e15-461.e27. doi: 10.1016/j.urolonc.2017.02.011. Epub 2017 Mar 28.
- **Journal Article:** Increased Expression of the Autocrine Motility Factor is Associated With Poor Prognosis in Patients With Clear Cell-Renal Cell Carcinoma *Medicine (Baltimore)*. 2015 Nov;94(46):e2117. doi: 10.1097/MD.0000000000002117.
- **Journal Article:** Metabolomic profiling for the identification of novel diagnostic markers in prostate cancer. *Expert Rev Mol Diagn*. 2015;15(9):1211-24. doi: 10.1586/14737159.2015.1069711. Epub 2015 Jul 15.
- **Journal Article:** Metabolomic profile of glycolysis and the pentose phosphate pathway identifies the central role of glucose-6-phosphate dehydrogenase in clear cell-renal cell carcinoma *Oncotarget*. 2015 May 30;6(15):13371-86.

POSTER AND ORAL PRESENTATION

- **Oral Presentation:** Combination of Radiation with Heterologous Prime/Boost TEM1 Vaccination Increases Anti-Tumor Efficacy of anti-PD-L1 Therapy; Translational Research Cancer Centers Consortium (TRCCC); March 5, 2020
- **Poster presentation:** Combination of Radiation with Heterologous Prime/Boost TEM1 Vaccination Increases Anti-Tumor Efficacy of anti-PD-L1 Therapy; Translational Research Cancer Centers Consortium (TRCCC); March 5-6, 2020
- **Poster presentation:** Blocking Type I interferons signaling deplete the effect of the combination of radiotherapy and Vancomycin

Lecce, 07-09-2021

A handwritten signature in black ink, appearing to be 'S. G. G.' or similar, written in a cursive style.