

CURRICULUM VITAE



PERSONAL INFORMATION

Name
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Nationality
Date of birth

DE SANCTIS, FRANCESCO
VIA Centro N.237, 37135, Verona (VR), Italy
+393284840987
francesco.desanctis82@gmail.com;
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9 October 1982

WORK EXPERIENCE EDUCATION AND TRAINING

• Dates

- Name and type of organisation providing education and training
 - Principal subjects covered
 - Main activities and responsibilities
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1 October 2023 – 30 September 2026

RTDB – Research fellow (Assistant Professor) working in the Immunology Section, Department of Medicine, University of Verona, G.B. Rossi Hospital
Cancer Immunology and immunotherapy
Leader of 3 research projects on cancer immunotherapy and biomarker identification. Supervisor of post-Doc, Ph.D students, technicians and bachelor students. Professor and member of the board of the Ph.D school in Inflammation, Immunity and Cancer (University of Verona). Professor in the school of Medicine (University of Verona).
<https://www.dm.univr.it/?ent=persona&id=20103&lang=en#tab-didattica>

1 February 2020 – 30 September 2023

RTDA – Research fellow (Assistant Professor) working in the Immunology Section, Department of Medicine, University of Verona, G.B. Rossi Hospital
Cancer Immunology and immunotherapy
Leader of 3 research projects on cancer immunotherapy and biomarker identification. Supervisor of post-Doc, Ph.D students, technicians and bachelor students. Professor and member of the board of the Ph.D school in Inflammation, Immunity and Cancer (University of Verona). Professor in the school of Medicine (University of Verona).
<https://www.dm.univr.it/?ent=persona&id=20103&lang=en#tab-didattica>

February 2013 – January 2020

Post-Doc working in the Immunology Section, Department of Pathology and Diagnostic, University of Verona, G.B. Rossi Hospital
Cancer Immunology and immunotherapy
Leader of 2 research projects on immunotherapy approaches of pancreatic cancer and biomarker discovery of immunotherapy efficacy. Supervisor of post-Doc, Ph.D students, technicians and bachelor students on this and other projects.
<https://www.dm.univr.it/?ent=persona&id=20103&lang=en#tab-didattica>

December 2008 – December 2012

Ph.D in Biology and Molecular Biotechnology – Università degli studi di Perugia, research activity performed at **UPENN (University of Pennsylvania)** - School of Medicine - OCRC Ovarian Cancer Research Center –Pennsylvania, USA
Cancer Immunology
Immunity studies and tumor immunotherapy approaches. Conducting research,

responsibilities	monitoring experiments, analyzing and expose data.
• Dates	
• Employer	
• Type of business or sector	
• Occupation	
• Main activities and responsibilities	
• Dates	
• Name and type of organisation providing education and training	
• Principal subjects covered	
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SCIENTIFIC ACTIVITY

19 years of research activity (2004-2023) performed in different laboratories. 3 years research experience in Merck Sharp & Dohme Pharma Company and 3 years of research studies performed in University of Pennsylvania, perfectly bridge the requirements for performing translational research at highest levels. From February 2013 to January 2020 I was post-doc researcher in the laboratory of Immunology section (University of Verona) with the following fellowship positions: 2013 one year of research fellowship, 2014-2017 3 years of AIRC fellowship, 2017-2020 research fellowship. Since February 2020 I am Assistant Professor in the same research unit.

During this long lasting working activity I developed great research experience in the onco-immunology field, technical and scientific know-how, scientific independence, tutoring and management skills in order to guide Ph.D students, young post-docs research, and to establish fruitful collaboration with biotech and pharma companies. Awesome team-work ability, goal-directed and problem-solving attitude, excellent communication skills, attention to detail and pragmatism, complete my profile.

My research activity aims to:

- Transcriptomic fingerprinting of myeloid derived suppressor cells (MDSCs), tumor microenvironment and tumor cells for the identification of new molecular insights of immune dysfunction and tumor induced immune editing.
- Silencing, knocking out and up-regulation of candidate genes directly or indirectly involved in metastatic and immune escape processes through many editing technologies: CRISPR, ShRNA, siRNA, lentiviral transductions, mRNA- and DNA-based transfections.
- Investigations on the role of MDSCs in metastatic spreading.
- Investigations on the molecular switches triggered by tumor on immune system to induce tumor spreading.
- Investigations on the molecular switches triggered by tumor to exclude cytotoxic T lymphocytes from tumor bed, thus limiting them on tumor borders to avoid immune attack.
- Investigations on the role of the complement activation in directing T cell recruitment in tumor mass.
- Active and passive immune therapy approaches by exploiting DNA- DCs- peptides-based vaccination strategies in preclinical models and evaluation of activated T cell immune response against tumor associated antigens.
- Investigations on the role of specific murine retrovirus in activating a protective T cell-based immune response against tumor challenge.
- Investigations of the immune suppressive strategies enrolled by MDSCs in the anti tumor immune response context
- Passive cancer immune therapy approaches based on the adoptive cell transfer of Telomerase specific CD8⁺ T lymphocytes
- Immunotherapy approaches designed to target tumor endothelium in ovarian cancer models
- Development of gene therapy protocols to disrupt MDSC immune suppressive properties.

TECHNICAL SKILLS AND COMPETENCES

***In vivo* experience:**

- Mice handling for tumor growth and immune response studies: IP (Intraperitoneal), SC (Subcutaneous), IM (Intramuscular), IV (Intravenous), orthotopic (pancreas and breast) Injections, surgeries, mice vaccination, administration of biologics (tumor specific CTLs, Immune checkpoint inhibitors, Chemo) tumor measurement, organ dissections, bleeding.
- Establishment of transgenic autochthonous mouse models developing spontaneous tumors
- Development of human immune reconstituted (HIR) mice for studying the functional interaction between tumors and immune system in human set up.
- *In vivo* imaging: IVIS (bioluminescence and fluorescence) and VEVO (ultra sound imaging)

***Ex vivo* experience:**

- Tumor and organs (spleen, lymphonodes, lungs etc) dissociation and preparation for flow cytometry, magnetic sorting, functional assays (ELISPOT, ICS, Proliferation, Killing assays, MLPC, MLTC, Suppression assays)
- Tumor and organs (spleen, lymphonodes, lungs etc) dissection and preparation for IHC, IF stainings

***In Vitro* experience:**

- Molecular Biology: Phage display technology for antibody selection, cloning, gene expression (RT-PCR, microarrays, RNAseq, sc-RNAseq, sc-ATACseq), Genetic editing (CRISPR, shRNA, siRNA technologies)
- Biochemistry: Electrophoresis, Western Blot, ELISA, Luminex technology; protein synthesis in prokaryotic and eukaryotic systems
- Cell Cultures: Transient and stable transfections (DNA plasmids, mRNA, siRNA, lentivirus, CRISPR), adhesion, migration and invasion assays, flow cytometry, 3D organoid cultures, confocal microscopy

Use of Scientific software:

- FlowJo
- SigmaPlot
- Vector NTI
- Aperio Image Scope
- LasX
- EndNote
- Corel Draw
- Office

Experience in mouse models handling, certified by the University of Pennsylvania (UPENN; 2010-2012), by the University of Verona (C.I.R.S.A.L. November 2012) and by the Charles River company (2023).

Participation in training courses:

- 2010-2012: laboratory safety, radiation use, animal use (and others): University of Pennsylvania
- 2013 University of Verona: "Training course for C.I.R.S.A.L."
- 2014 University of Verona: "OSH general training course for workers"
- 2014 Verona Integrated University Hospital: "Management of occupational safety in the Immunology Unit"
- 2016 University of Verona: "Management of safety in the use of radiogenic agents"
- 2016 University of Verona: "Researchers and the application of the 3Rs".
- 2016 University of Verona: "Role of collective protective devices in the biological laboratory and in the analysis laboratory"
- 2017 Provincial command of the Verona fire brigade: "Fire brigade course"
- 2019 University of Verona: Safety in the use of liquid nitrogen".
- 2020 ASSING: "Theoretical and practical course for personnel working in level 3 biological containment environments"
- 2023 Charles River: "Theoretical course for acquisition of function b".

GRANTS

Prin 2020 – MIUR. Project 20209Y5YFZ: coordinator of University of Verona Unit.

SUBMITTED GRANTS

2023: Associazione italiana ricerca sul cancro (AIRC) My first AIRC grant (MFAG): "Local ablation and HMGB1 release break immune tolerance and elicit response to immunotherapy in pancreatic cancer". Project has passed the first phase (LOI) and is currently under evaluation for funding judgment

2023: Worldwide Cancer Research (WCR) UK: "Biomimetic nanocarriers rewire host immunity to recognize and restrict breast cancer outgrowth". Project has passed the first phase and is currently under evaluation for funding judgment

2023: American Association of Cancer Research (AACR) Novocure: "Tumor treating field therapy breaches immune tolerance in pancreatic cancer". Project has passed the first phase (LOI) and is currently under evaluation for funding judgment

Activity on Funded Research Projects

- 2011-2017 Multiunit AIRC 5x1000: Participation as internal collaborator in the project entitled "Innovative tools for early diagnosis and risk assessment of pancreatic cancer"
- 2015 Basic Research (University of Verona): participation as an internal collaborator in the Immunology section with the project entitled "Impact of ablative techniques on pancreatic cancer: pre-clinical animal study on the effects of new ablative procedures on the immune system, irreversible electroporation and radiofrequency thermoablation", coordinated by Prof. Claudio Bassi (Pancreas Surgery) of the University of Verona.
- 2014-2017 AIRC IG. Participation as internal collaborator in the project entitled "Molecular control of the metastatic process by adaptive and innate immunity"
- 2017-2019 AIRC IG. Participation as internal collaborator in the project entitled "Exosome-driven antiviral response in the metastatic dissemination of pancreatic cancer".
- 2018-2019 Multiunit Extension AIRC 5x1000. Participation as internal collaborator in the project entitled "Clinically applicable biomarkers to early diagnosis, patient risk stratification and therapy response in pancreas cancer".
- 2018-2021 EU grant, EuroNanoMed III-2016. Participation as internal collaborator in the project entitled "RESOLVE - suppRESSion of immunopathology by nanOparticle deLiVEry of mRNA to monocytes".
- 2019-2023 AIRC IG. Participation as internal collaborator in the project entitled "TrainEd MonocytoPOiesis in cancer progression (TEMPO)"
- 2020-2022 CRI CLIP. Participation as internal collaborator in the project entitled: "CHARON: Claudins Help the ARrest of Cytotoxic T Lymphocytes in Tumors Improving ImmuNotherapy"
- 2020-2023 MIUR PRIN. Participation as head of the unit of the University of Verona entitled: In depth characterization of monocyte-B cell interactions in infection and cancer
- 2023-2025 MIUR PNRR. Participation as an internal collaborator in the project entitled: National Center for Gene Therapy and Drugs based on RNA Technology.

PARTICIPATION IN NATIONAL AND INTERNATIONAL RESEARCH GROUPS

- Researcher of the Immunology section - University of Verona.
- Collaborator with Dr. Giulia Pasqual (UNIPD) and Dr. Mirela Kuka (San Raffaele University) on the Prin 2020 project
- Collaborator with Dr. Pasquina Marzola on the funded project AIRC IG 2022
- Collaborator with Dr Claudio Bassi (Pancreas Surgery, University of Verona), within the 2015 Basic Research project: scientific coordinator of the project in collaboration with Dr Salvatore Paiella.
- Collaborator with Dr.ssa Manuela Iezzi (UNICH) in the context of Pancreas immunotherapy projects
- Collaborator with the companies Biontech and Tron (Mainz, Germany) on the projects "RESOLVE" and "Claudin" and scientific director of the Claudin project.
- Collaborator with Dr David Tuveson (Cold Spring Harbor), Dr Vincenzo Corbo and Dr Aldo Scarpa (University of Verona), Dr Lorenzo Piemonti (San Raffaele Milan), Dr Zea Borok (University of California), Dr Gabriela Constantin about the project "immunotherapy approaches in pancreatic cancer" of which I am the leader and scientific director.
- Collaborator with Dr Ido Amit (Weizmann Institute of Science) for the molecular characterization of leukocyte populations associated with the prognosis in COVID-19 patients.
- Collaborator with Codiak Biosciences (Cambridge Massachusetts) and iTeos Therapeutics (Charleroi, Belgium) for the characterization of exosomes of tumor origin and the identification of pathway inhibitors involved in the immunosuppressive activity of monocytes and MDSCs

AWARDS

- December 2004: Winner of the Corradino Motti prize, organized by the University of Teramo for the best experimental thesis of the academic year.
- November 2012: Winner of the award as author of the best oral presentation during the international congress Inspire Athens 2012, Athens (Greece).
- November 2013: Winner of an AIRC fellowship for Italy, Ref. 14921, lasting 3 years for the project entitled "Targeting Arg-1 in MDSCs to improve innovative immunotherapeutic approach in pancreatic cancer".
- August 2018: Winner of the first selection of the Start-Up Veneto 2018 competition "La notte degli angeli" with the scientific group "AVATAR" of the University of Verona for the development of a humanized mouse model for the development of cancer immunotherapy. Padua (Italy).
- 2021: PRIN under 40 awarded, call 2020
- May 2021: National scientific qualification as associate professor, competition sector 06/A2, scientific disciplinary sector MED/04.

PATENTS

31 March 2023. International Patent Application No. PCT/EP2023/058504: "METHODS FOR PREDICTING AND IMPROVING THERAPEUTIC EFFICACY OF CANCER TREATMENTS AND METHODS FOR CANCER PROGNOSIS"

BOOK CHAPTERS

De Sanctis F., Bronte V, Ugel S. Tumor-induced Myeloid-derived Suppressor Cells. In: Myeloid Cells in Health and Disease: A Synthesis, 2015, ASM Press.

PUBLICATIONS: 48 (FIRST AUTHOR: 14, LAST NAMES OR CORRESPONDING: 4)

- 1) Harnessing the reverse cholesterol transport pathway to favor differentiation of monocyte-derived APCs and antitumor responses. Raccosta L., Marrazzo M., Costantini S., Maggioni D., Ferreira LM, Corna G, Zordan P., Sorice A., Farinello D., Bianchessi S., Riba M, Lazarevic D, Provero P., Mack M., Bondanza A., Nalvarte I., Gustafsson JA., Ranzani V., **De Sanctis F.**, Ugel S., Baron S., Lobaccaro JMA, Pontini L., Pacciarini M., Traversari C., Pagani M., Bronte V., Sitia G., Antonson P., Brendolan A., Budillon A, and Russo V. *Cell Death Disease*. Accepted for publication
- 2) Neutralization of NET-associated human ARG1 enhances 1 cancer immunotherapy. Canè S., Barouni RM., Fabbi M., Cuozzo J., Fracasso G., Adamo A., Ugel S., Trovato R., **De Sanctis F.**, Giacca M., Lawlor R., Scarpa A., Rusev B., Lionetto G., Paiella S., Salvia R., Bassi C., Mandruzzato S., Ferrini S. and Bronte V. *Science Translational Medicine*. Accepted for publication
- 3) p140Cap inhibition of β -Catenin restrains the stem cell compartment and instructs a protective anti-tumor immune response in breast cancer. Salemme V., Vedelago M., Sarcinella A., Moietta F., Piccolantonio A., Moiso E., Centonze G., Manco M., Guala A., Lamolinara A., Angelini C., Morellato A., Natalini D., Calogero R., Incarnato D., Oliviero S., Conti L., Iezzi M., Tosoni D., Bertalot G., Freddi S., Tucci F., **De Sanctis F.**, Frusteri C., Ugel S., Bronte V., Cavallo F., Provero P., Gai M., Taverna D., Turco E., Pece S. *Nature Communications*. Accepted for publication
- 4) Open sesames to the PRR complexity of MDSCs in cancer. Wang T., Hu Y., Dusi S., Qi F., Ugel S., **De Sanctis F.** *Frontiers in Immunology*. Accepted for publication
- 5) Neutrophils inhibit $\gamma\delta$ T cell functions in the imiquimod-induced mouse model of psoriasis. Costa S., Bevilacqua D., Caveggion E., Gasperini S., Zenaro E., Pettinella F., Donini M., Dusi S., Constantin G., Lonardi S., Vermi W., **De Sanctis F.**, Ugel S., Cestari T., Abram CL, Lowell CA, Rodegher P., Tagliaro F., Girolomoni G., Cassatella MA, Scapini P. *Front Immunol.* 2022
- 6) CXCR1/2 dual-inhibitor ladarixin reduces tumour burden and promotes immunotherapy response in pancreatic cancer. Piro G., Carbone C., Agostini A., Esposito A., De Pizzol M., Novelli R., Allegretti M., Aramini A., Caggiano A., Granitto A., **De Sanctis F.**, Ugel S., Corbo V., Martini M., Lawlor RT, Scarpa A., Tortora G. *Br J Cancer*. 2023 Jan
- 7) Targeting tumour-reprogrammed myeloid cells: the new battleground in cancer immunotherapy. **De Sanctis F.**, Adamo A., Canè S., Ugel S. *Semin Immunopathol*. 2022 Sep
- 8) Targeting Inhibition of Accumulation and Function of Myeloid-Derived Suppressor Cells by Artemisinin via PI3K/AKT, mTOR, and MAPK Pathways Enhances Anti-PD-L1 Immunotherapy in Melanoma and Liver Tumors. Zhang M., Wang L., Liu W., Wang T., **De Sanctis F.**, Zhu L., Zhang G., Cheng J., Cao Q., Zhou J., Tagliabue A., Bronte V., Yan D., Wan X., Yu G. *J Immunol Res.* 2022.
- 9) Breaking the Immune Complexity of the Tumor Microenvironment Using Single-Cell Technologies. Caligola S., **De Sanctis F.**, Canè S., Ugel S. *Front Genet*. 2022
- 10) Interrupting the nitrosative stress fuels tumor-specific cytotoxic T lymphocytes in pancreatic cancer. **De Sanctis F.**, Lamolinara A., Boschi F., Musiu C., Caligola S., Trovato R., Fiore A., Frusteri C., Anselmi C., Poffe O., Cestari T., Canè S., Sartoris S., Giugno R., Del Rosario G., Zappacosta B., Del Pizzo F., Fassan M., Dugnani E., Piemonti L., Bottani E., Decimo I., Paiella S., Salvia R., Lawlor RT, Corbo V., Park Y., Tuveson DA, Bassi C., Scarpa A., Iezzi M., Ugel S., Bronte V. *J Immunother Cancer*. 2022
- 11) A Complex Metabolic Network Confers Immunosuppressive Functions to Myeloid-Derived Suppressor Cells (MDSCs) within the Tumour Microenvironment. Hofer F., Di Sario G., Musiu C., Sartoris S., **De Sanctis F***, Ugel S*. *Cells*. 2021
- 12) Fatal cytokine release syndrome by an aberrant FLIP/STAT3 axis. Musiu C., Caligola S., Fiore A., Lamolinara A., Frusteri C., Del Pizzo FD, **De Sanctis F.**, Canè S., Adamo A., Hofer F., Barouni RM, Grilli A., Zilio S., Serafini P., Tacconelli E., Donadello K., Gottin L., Polati E., Girelli D., Polidoro I., Iezzi PA, Angelucci D., Capece A., Chen Y., Shi ZL, Murray PJ, Chilosi M, Amit I., Bicciato S., Iezzi M., Bronte V., Ugel S. *Cell Death Differ*. 2021
- 13) Arginase 1-Based Immune Modulatory Vaccines Induce Anticancer Immunity and Synergize with Anti-PD-1 Checkpoint Blockade. Aaboe Jørgensen M., Ugel S., Linder Hübbecke M., Carretta M., Perez-Penco M., Weis-Banke SE, Martinenaite E., Kopp K., Chapellier M., Adamo A., **De Sanctis F.**, Frusteri C., Iezzi M., Zocca MB, Hargbøll Madsen D., Wakatsuki Pedersen A., Bronte V., Andersen MH. *Cancer Immunol Res*. 2021
- 14) Intratumoral injection of TLR9 agonist promotes an immunopermissive microenvironment transition and causes cooperative antitumor activity in combination with anti-PD1 in pancreatic cancer. Carbone C., Piro G., Agostini A., Delfino P., **De Sanctis F.**, Nasca V., Spallotta F., Sette C., Martini M., Ugel S., Corbo V., Cappello P., Bria E., Scarpa A., Tortora G. *J Immunother Cancer*. 2021
- 15) Dynamics of SARS-CoV2 Infection and Multi-Drug Resistant Bacteria Superinfection in Patients with Assisted Mechanical Ventilation. Mazzariol A., Benini A., Unali I., Nocini R., Smania M., Bertoncelli A., **De Sanctis F.**, Ugel S., Donadello K., Polati E., Gibellini D. *Front Cell Infect Microbiol*. 2021
- 16) Maternal Phylogenetic Relationships and Genetic Variation among Rare, Phenotypically Similar Donkey Breeds. Mazzatorta A., Vignoli M., Caputo M., Vignola G., Tamburro R., **De Sanctis F.**, Roig JM, Bucci R., Robbe D., Carluccio A. *Genes (Basel)*. 2021

17) The immune modulatory effects of umbilical cord-derived mesenchymal stromal cells in severe COVID-19 pneumonia. Ciccocioppo R, Gibellini D, Astori G, Bernardi M, Bozza A, Chieregato K, Elice F, Ugel S, Caligola S, **De Sanctis F**, Canè S, Fiore A, Trovato R, Vella A, Petrova V, Amodeo G, Santimaria M, Mazzariol A, Frulloni L, Ruggeri M, Polati E, Bronte V. *Stem Cell Res Ther*. 2021

18) Deciphering the state of immune silence in fatal COVID-19 patients. Bost P*, **De Sanctis F***, Canè S*, Ugel S, Donadello K, Castellucci M, Eyal D, Fiore A, Anselmi C, Barouni RM, Trovato R, Caligola S, Lamolinara A, Iezzi M, Facciotti F, Mazzariol A, Gibellini D, De Nardo P, Tacconelli E, Gottin L, Polati E, Schwikowski B, Amit I, Bronte V. *Nat Commun*. 2021 Mar 5;12(1):1428.

19) How to Reprogram Myeloma-Associated Macrophages: Target IKZF1. **De Sanctis F**, Bronte V. *Cancer Immunol Res*. 2021 Mar;9(3):254.

20) Monocytes in the Tumor Microenvironment. Ugel S, Canè S, **De Sanctis F**, Bronte V. *Annu Rev Pathol*. 2021 Jan 24

21) Baricitinib restrains the immune dysregulation in severe COVID-19 patients. Bronte V, Ugel S, Tinazzi E, Vella A, **De Sanctis F**, Canè S, Batani V, Trovato R, Fiore A, Petrova V, Hofer F, Barouni RM, Musiu C, Caligola S, Pinton L, Torroni L, Polati E, Donadello K, Friso S, Pizzolo F, Iezzi M, Facciotti F, Pelicci PG, Righetti D, Bazzoni P, Rampudda M, Comel AC, Mosaner W, Lunardi C, Olivieri O. *J Clin Invest*. 2020 Aug 18

22) The Disabled homolog 2 controls pro-metastatic activity of tumor-associated macrophages. Marigo I, Trovato R, Hofer F, Ingangi V, **DE Sanctis F**, Ugel S, Cane S, Simonelli A, Lamolinara A, Iezzi M, Fassan M, Rugge M, Boschi F, Borile G, Eisenhaure T, Sarkizova S, Lieb D, Hacohen N, Azzolin L, Piccolo S, Lawlor R, Scarpa A, Carbognin L, Bria E, Bicciato S, Murray PJ, Bronte V. *Cancer Discov*. 2020 Jul 10

23) Organoid-Transplant Model Systems to Study the Effects of Obesity on the Pancreatic Carcinogenesis in vivo. Lupo F, Piro G, Torroni L, Delfino P, Trovato R, Rusev B, Fiore A, Filippini D, **De Sanctis F**, Manfredi M, Marengo E, Lawlor RT, Martini M, Tortora G, Ugel S, Corbo V, Melisi D, Carbone C. *Front Cell Dev Biol*. 2020 Apr 28;8:308.

24) The engagement between MDSCs and metastases: partners in crime. Ugel S.; Trovato R.; Canè S.; Petrova V.; Sartoris S.; **De Sanctis F**. *Frontiers in Oncology Molecular and Cellular Oncology* 2020

25) Tandem Dye Doped Nanoparticles for NIR Imaging via Cerenkov Resonance Energy Transfer. Zaccheroni N.; Genovese D.; Petrizza L.; Prodi L.; Rampazzo E.; **De Sanctis F**; Spinelli A.E.; Boschi F. *Frontiers in Chemistry Nanoscience* 2020

26) Immunosuppression by monocytic myeloid-derived suppressor cells in patients with pancreatic ductal carcinoma is orchestrated by STAT3. Trovato R.; Fiore A.; Sartori S.; Cané S.; Giugno R; Cascione L.; Paiella S; Salvia R.; **De Sanctis F**; Poffe O.; Anselmi C.; Hofer F.; Sartoris S.; Piro G.; Carbone C.; Corbo V.; Lawlor R.; Solito S.; Pinton L.; Mandruzzato S.; Bassi C.; Scarpa A.; Bronte V.; Ugel S. *Journal for ImmunoTherapy of Cancer* 2019

27) The Endless Saga of Monocyte Diversity. Canè S., Ugel S., Trovato R., Marigo I., **De Sanctis F.**, Sartoris S. and Bronte V. *Front Immunol*. 2019

28) Immunoevolution of mouse pancreatic organoid isografts from preinvasive to metastatic disease. Filippini D, Agosto S, Delfino P, Simbolo M, Piro G, Rusev B, Vaghini L, Cantù C, Lupo F, Ugel S, **De Sanctis F**, Bronte V, Milella M, Tortora G, Scarpa A, Carbone C, Corbo V. *Scientific Reports* 2019

29) Induction of immunosuppressive functions and NF- κ B by FLIP in monocytes. Fiore A, Ugel S, **De Sanctis F**, Sandri S, Fracasso G, Trovato R, Sartoris S, Solito S, Mandruzzato S, Vascotto F, Hippen KL, Mondanelli G, Grohmann U, Piro G, Carbone C, Melisi D, Lawlor RT, Scarpa A, Lamolinara A, Iezzi M, Fassan M, Bicciato S, Blazar BR, Sahin U, Murray PJ, Bronte V. *Nature Comunication* 2018

30) Methods to Measure MDSC Immune Suppressive Activity In Vitro and In Vivo. Solito S, Pinton L, **De Sanctis F**, Ugel S, Bronte V, Mandruzzato S, Marigo I. *Curr Protoc Immunol*. 2018

31) Four-class tumor staging for early diagnosis and monitoring of murine pancreatic cancer using magnetic resonance and ultrasound. Dugnani E, Pasquale V, Marra P, Liberati D, Canu T, Perani L, **De Sanctis F**, Ugel S, Invernizzi F, Citro A, Venturini M, Doglioni C, Esposito A, Piemonti L. *Carcinogenesis* 2018

32) T-cell tracking using Cerenkov and Radioluminescence imaging. Boschi F*, **De Sanctis F***, Ugel S, Spinelli AE. *J Biophotonics*. 2018

33) Hyperthermic treatment at 56 °C induces tumour-specific immune protection in a mouse model of prostate cancer in both prophylactic and therapeutic immunization regimens. **De Sanctis F**, Sandri S, Martini M, Mazzocco M, Fiore A, Trovato R, Garetto S, Brusa D, Ugel S, Sartoris S. *Vaccine*. 2018

34) The dark side of tumor-associated endothelial cells. **De Sanctis F**, Ugel S, Facciponte J, Facciabene A. *Semin Immunol*. 2018

35) Anti-telomerase T cells adoptive transfer. **De Sanctis F**, Trovato R, Ugel S. *Aging*. 2017

36) Optical emission of 223Radium: in vitro and in vivo preclinical applications Boschi F, **De Sanctis F**, Spinelli AE. *J Biophotonics*. 2017

37) Overview of the optical properties of fluorescent nanoparticles for optical imaging. Boschi F, **De Sanctis F**. *Eur J Histochem*. 2017 Aug 29;61(3):2830

38) Effective control of acute myeloid leukaemia and acute lymphoblastic leukaemia progression by telomerase specific adoptive T-cell therapy. Sandri S*, **De Sanctis F***, Lamolinara A, Boschi F, Poffe O, Trovato R, Fiore A, Sartori S, Sbarbati A, Bondanza A, Cesaro S, Krampera M, Scupoli MT, Nishimura MI, Iezzi M, Sartoris S, Bronte V, Ugel S. *Oncotarget*. 2017

39) Local Endothelial Complement Activation Reverses Endothelial Quiescence, Enabling T-cell Homing and Tumor Control during T-cell Immunotherapy. Facciabene A.*, **De Sanctis F.***, Pierini S.* Reis E.S.* Balint K., Magotti P., Lanitis E., DeAngelis R.A., Yian J., Buckanovich R., Song W.C., Lambris J.D.**, Coukos G.** *Oncoimmunology* 2017 (accepted)

40) Tumor-Induced Myeloid-Derived Suppressor Cells. **De Sanctis F**, Bronte V, Ugel S. *Microbiol Spectr*. 2016

41) Feasibility of Telomerase-Specific Adoptive T-cell Therapy for B-cell Chronic Lymphocytic Leukemia and Solid Malignancies. Sandri S, Bobisse S, Moxley K, Lamolinara A, **De Sanctis F**, Boschi F, Sbarbati A, Fracasso G, Ferrarini G, Hendriks RW, Cavallini C, Scupoli MT, Sartoris S, Iezzi M, Nishimura MI, Bronte V, Ugel S. *Cancer Res.* 2016

42) A Tumor Mitochondria Vaccine Protects against Experimental Renal Cell Carcinoma. Pierini S, Fang C, Rafail S, Facciponte JG, Huang J, **De Sanctis F**, Morgan MA, Uribe-Herranz M, Tanyi JL, Facciabene A. *J Immunol.* 2015 Oct

43) Tumor-induced myeloid deviation: when myeloid-derived suppressor cells meet tumor-associated macrophages. Ugel S, **De Sanctis F**, Mandruzzato S, Bronte V. *J Clin Invest.* 2015 Sep

44) Targeting tumor vasculature: expanding the potential of DNA cancer vaccines. Ugel S, Facciponte JG, **De Sanctis F**, Facciabene A. *Cancer Immunol Immunother.* 2015 Oct

45) Autologous cellular vaccine overcomes cancer immunoediting in a mouse model of myeloma. Mazzocco M, Martini M, Rosato A, Stefani E, Matucci A, Dalla Santa S, **De Sanctis F**, Ugel S, Sandri S, Ferrarini G, Cestari T, Ferrari S, Zanovello P, Bronte V, Sartoris S. *Immunology.* 2015 Sep

46) MDSCs in cancer: Conceiving new prognostic and therapeutic targets. **De Sanctis F**, Solito S, Ugel S, Molon B, Bronte V, Marigo I. *Biochim Biophys Acta.* 2015 Aug 6

47) Tumor endothelial marker 1-specific DNA vaccination targets tumor vasculature. Facciponte JG, Ugel S, **De Sanctis F**, Li C, Wang L, Nair G, Sehgal S, Raj A, Matthaiou E, Coukos G, Facciabene A. *J Clin Invest.* 2014 Apr

48) The emerging immunological role of post-translational modifications by reactive nitrogen species in cancer microenvironment. **De Sanctis F**, Sandri S, Ferrarini G, Pagliarello I, Sartoris S, Ugel S, Marigo I, Molon B, Bronte V. *Front Immunol.* 2014 Feb

The research activity of Dr. Francesco De Sanctis is confirmed by the following bibliographic database.

SCOPUS:

Hirsch h index: 20

Citations: 1613

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CONFERENCE POSTERS

- Ugel S., Rueter J., **De Sanctis F**., Scarselli E., Mennuni C., La Monica N., Coukos G. And Facciabene A. *mTERT genetic vaccine combined with chemotherapy augments antigen-specific immune response and confers tumor protection in time depended fashion.* Gene Vaccination in Cancer, Ascoli Piceno (Italia), 2011
- Sandri S., Bobisse S., Moxley K., Lamolinara A., **De Sanctis F**., Boschi F., Sbarbati A., Fracasso G., Ferrarini G., Hendriks R.W., Cavallini C., Scupoli M.T., Sartoris S., Iezzi M., Nishimura M.I., Bronte V.* and Ugel S.* *Anti-telomerase adoptive cell therapy to target B-cell lymphocytic leukemia.* CIMT, Mainz (Germania), 2013.
- **De Sanctis F**., Ugel S., Fassan M., Iezzi M., Boschi F., Youngkyu P., Stramucci L., Lamolinara A., Sandri S., Ferrarini G., Cristovao Borges L., Sartoris S., Sbarbati A., Tuveson D., Scarpa A. e Bronte V. *Targeting telomerase in pancreatic cancer.* NIBIT, Siena (Italia), 2014.
- Ugel S., Facciponte J.G., **De Sanctis F**., Li C, Wang L., Nair G., Sehgal S., Raj A., Matthaiou E., Coukos G. and Facciabene A. *Tumor endothelial marker 1-specific DNA vaccination targets tumor vasculature.* NIBIT, Siena (Italia), 2014.
- Sandri S., Bobisse S., Moxley K., Lamolinara A., **De Sanctis F**., Boschi F., Sbarbati A., Fracasso G., Ferrarini G., Hendriks R.W., Cavallini C., Scupoli M.T., Sartoris S., Iezzi M., Nishimura M.I., Bronte V.* and Ugel S.* *Targeting B-cell lymphocytic leukemia by adoptive transfer of telomerase specific T cells.* PIVAC, Roma (Italia), 2014. **Poster award:** Signori E, Cavallo F. *The Fourteenth International Conference on Progress in Vaccination Against Cancer (PIVAC-14), September 24-26, 2014, Rome, Italy: rethinking anti-tumor vaccines in a new era of cancer immunotherapy.* Cancer Immunol Immunother. 2015
- Sandri S., Bobisse S., Moxley K., Lamolinara A., **De Sanctis F**., Boschi F., Sbarbati A., Fracasso G., Ferrarini G., Hendriks R.W., Cavallini C., Scupoli M.T., Sartoris S., Iezzi M., Nishimura M.I., Bronte V.* and Ugel S.* *Feasibility of Telomerase-Specific Adoptive T-cell Therapy for B-cell Chronic Lymphocytic Leukemia and Solid Malignancies.* CIMT, Mainz (Germania), 2016
- **De Sanctis F**., Fassan M, Lamolinara A., Iezzi M., Boschi F., Sbarbati A., Youngkyu P., Sandri S., Trovato R., Fiore A., Sartori S., Poffe O., Fracasso G., Anselmi C., Tuveson D, Lawlor R.T., Scarpa A., Sartoris S., Ugel S. and Bronte V. *Telomerase specific adoptive cell therapy in pancreatic cancer.* CIMT, Mainz (Germania), 2016
- Trovato R., **De Sanctis F**., Fiore A., Sandri S., Sartori S., Poffe O., Anselmi C., Fracasso G, Iezzi M., Lamolinara A., Fassan M., Rusev B., Scarpa A., Boschi F., Ruggeri L., Tuveson D., Sartoris S., Ugel S. and Bronte V. *Tumor-infiltrating myeloid cells in pancreatic ductal adenocarcinoma.* Regulatory Myeloid-Suppressor Cell Conference, Philadelphia (USA), 2016.
- Sandri S., **De Sanctis F**., Bobisse S., Moxley K., Lamolinara A., Boschi F., Sbarbati A., Fracasso G., Ferrarini G., Hendriks R.W., Cavallini C., Scupoli M.T., Sartoris S., Iezzi M., Nishimura M.I., Bronte V., Ugel S. *Feasibility of telomerase-specific adoptive T-cell therapy for hematologic and solid malignancies.* SIC, Verona (Italia), 2016. **Poster award**
- **De Sanctis F**., Fassan M, Lamolinara A., Iezzi M., Boschi F., Sbarbati A., Youngkyu P., Sandri S., Trovato R., Fiore A., Sartori S., Poffe O., Fracasso G., Anselmi C., Tuveson D, Lawlor R.T., Scarpa A., Sartoris S., Ugel S. and Bronte V. *Telomerase specific adoptive cell therapy in pancreatic cancer.* NIBIT, Siena (Italia), 2016.

- Trovato R, De Sanctis F, Fiore A, Sandri S, Sartori S, Poffe O, Anselmi C, Fracasso G, Ruggeri L, Iezzi M, Lamolinara A, Fassan M, Rusev B, Lawlor RT, Scarpa A, Boschi F, Tuveson D, Sartoris S, Ugel S and Bronte V. "Tumor-infiltrating myeloid cells in pancreatic ductal adenocarcinoma" Cancer Bio-immunootherapy XIV NIBIT meeting, Siena, Italia, 13-15 October 2016
- De Sanctis F., Fassan M, Lamolinara A., Iezzi M., Boschi F., Sbarbati A., Youngkyu P., Sandri S., Trovato R., Fiore A., Sartori S., Poffe O., Fracasso G., Anselmi C., Tuveson D, Lawlor R.T., Scarpa A., Sartoris S., Ugel S. and Bronte V. *Telomerase specific adoptive cell therapy in pancreatic cancer.* 58th annual meeting of the Italian cancer society (SIC 2016), Verona, Italia, 5-8 September 2016.
- Trovato R, De Sanctis F, Fiore A, Sandri S, Sartori S, Poffe O, Anselmi C, Fracasso G, Ruggeri L, Iezzi M, Lamolinara A, Fassan M, Rusev B, Lawlor RT, Scarpa A, Boschi F, Tuveson D, Sartoris S, Ugel S and Bronte V. "Tumor-infiltrating myeloid cells in pancreatic ductal adenocarcinoma" 58th annual meeting of the Italian cancer society (SIC 2016), Verona, Italia, 5-8 September 2016.
- De Sanctis F, Sandri S, Martini M, Mazzocco M, Fiore A, Trovato R, Garetto S, Brusa D, Ugel S, Sartoris S. Hyperthermic treatment at 56°C induces tumour-specific immune protection in a mouse model of prostate cancer in both prophylactic and therapeutic immunization regimens. EMDS, Verona, September 2018
- Trovato R, Fiore A, Sartori S, Canè S, Giugno R, Cascione L, Paiella S, Salvia R, De Sanctis F, Poffe O, Anselmi C, Hofer F, Sartoris S, Piro G; Carbone C; Corbo V, Lawlor R, Solito S, Pinton L, Mandruzzato S, Bassi C, Scarpa A, Bronte V and Ugel S. Immunosuppression by monocytic myeloid-derived suppressor cells in patients with pancreatic ductal carcinoma is orchestrated by STAT3. Cimt2019, Mainz, May 2019
- Trovato R, Fiore A, Sartori S, Canè S, Giugno R, Cascione L, Paiella S, Salvia R, De Sanctis F, Poffe O, Anselmi C, Hofer F, Sartoris S, Piro G; Carbone C; Corbo V, Lawlor R, Solito S, Pinton L, Mandruzzato S, Bassi C, Scarpa A, Bronte V and Ugel S. Immunosuppression by monocytic myeloid-derived suppressor cells in patients with pancreatic ductal carcinoma is orchestrated by STAT3. Nibit 2019, Verona, October 2019

CONFERENCE ORAL COMMUNICATIONS

- De Sanctis F., Facciabene A.*, Balint K., Magotti P., Facciponte J., Hagemann I.S., Rueter J., De Angelis R.A., Yian J., Buckanovich R., Song W.C., Lambris J.D., Coukos G. *Local Complement Activation Abrogates the Tumor-Endothelial Barrier and Mediates T Cell Homing and Tumor Immune Attack.* TRCCC, Seven Springs (USA), 2012. **Selected abstract**
- De Sanctis F., Facciabene A.*, Balint K., Magotti P., Facciponte J., Hagemann I.S., Rueter J., De Angelis R.A., Yian J., Buckanovich R., Song W.C., Lambris J.D., Coukos G. *Local Complement Activation Abrogates the Tumor-Endothelial Barrier and Mediates T Cell Homing and Tumor Immune Attack.* Inspire Athens 2012 Atene (Grecia), 2012. **Selected abstract and Best presentation award**
- De Sanctis F, Ugel S, La Molinara A, Boschi F, Trovato R, Fiore A, Canè S, Musiu C, Anselmi C, Poffe O, Cestari T, Sartoris S, Fassan M, Dugnani E, Piemonti L, Youngkyu P, Tuveson D, Paiella S, Bassi C, Corbo V, Lawlor R, Scarpa A, Iezzi M and Bronte V. The nitrosative stress modulation of pancreatic tumor microenvironment favors the immune attack of TERT specific cytotoxic T lymphocytes. Nibit 2019 Verona, October 2019 **Selected abstract**
- De Sanctis F. 10x Virtual User Group Meeting – Italy – “COVID-19 at the intersection between cancer immunity and immunotherapy” – 20 November 2020, **Invited speaker**
- De Sanctis F. Vaccines, Infection and (Presymptomatic) Transmission of SARS-CoV-2 virtual conference – “Deciphering the state of immune silence in fatal COVID-19 patient” – 4 December 2020 **Invited speaker**
- De Sanctis F. Profile the Biology of the Immune System with Single Cell multiomics – “Characterization of immune silence in fatal COVID-19 patients” – 10 March 2021 **Invited speaker**
- De Sanctis F. Decifrare lo stato di silenzio immunitario in pazienti critici COVID-19 - GIC XXXIX - 14-18 Giugno 2021, **Invited speaker**
- De Sanctis F. 21st International Conference on Progress in Vaccination against Cancer” (PIVAC-22) – “Interrupting the nitrosative stress fuels tumour-specific cytotoxic T lymphocytes in pancreatic cancer” 26-28 September 2022, **Selected abstract**
- De Sanctis F. XX NIBIT meeting “Translating knowledge into the clinic” (NIBIT-22) – “Interrupting the nitrosative stress fuels tumour-specific cytotoxic T lymphocytes in pancreatic cancer 13-15 October 2022, **Selected abstract**
- De Sanctis F. IOV retreat – “Fallimenti e speranze nell’immunoterapia del tumore del pancreas” 24-25 Febbraio 2023, **Invited speaker**

EDUCATIONAL ACTIVITY

- Since 2019 Teacher of the international PhD course in Inflammation, Immunity and Cancer.
- 2020-2021 Teacher of the course of Diagnostic methodologies of clinical pathology module Methods and techniques of Immunohaematology, Degree in Biomedical laboratory techniques.
- 2020-2022: Teacher of the elective course of the Medicine and Surgery degree course: The use of basic immunology in clinical practice
- 2021-2023 Teacher of the course of Diagnostic methodologies of clinical pathology module Immunohematology and Hemostasis, Degree in Biomedical laboratory techniques
- 2021-2023 Professor of the Immunology course of the Medicine and Surgery degree course
- 2020-2021 Internship in preparatory sciences for the medical profession degree course in Medicine and Surgery

- 2023 Professor of Molecular and cellular basis of disease Module of Cell pathology, inflammation and immunology, degree in Biology for Translational Research and Precision Medicine

The teaching activities of Dr Francesco De Sanctis since 2019 are summarized in more than 200 hours of frontal teaching and are witnessed and available for consultation on the following website: <https://www.dm.univr.it/?ent=persona&id=20103&lang=it#tab-teaching>

The quality of the teaching carried out by Dr. Francesco De Sanctis is testified by the excellent judgments received from his students through evaluation questionnaires.

COLLEGIALE BOARDS AND INSTITUTIONAL POSITIONS

- 1) Since 2020: Member of the Board of the Department of Medicine; University of Verona
- 2) Since 2020: Member of the Teaching Board of the Degree Course in Biomedical Laboratory Techniques - Medicine and Surgery; University of Verona
- 3) Since 2022: Member of the Teaching Board of the Degree Course in Medicine and Surgery; University of Verona
- 4) Since 2023: Member of the teaching board and reference professor of the new course in Biology for Translational Research and Precision Medicine, University of Verona

SUPERVISOR ACTIVITY

1. 2015: Bachelor thesis tutor of Dr Lorena Cristovao Borges at University of Verona
2. 2016: Bachelor thesis tutor of Dr Lorenzo Bombarda at University of Verona
3. 2017: Bachelor thesis tutor of Dr Sebastiano Dalla Gassa at University of Verona
4. 2020: Master Degree tutor of Dr Ottavia Salvi at University of Verona
5. 2022: Bachelor thesis tutor of Dr Francesca Corbioli at University of Verona
6. 2022: Medicine and Surgery thesis co-tutor of Dr Edoardo Cordioli at University of Verona
7. 2022: Bachelor thesis co-tutor of Dr Valeria Facchinelli at University of Verona
8. 2022: Bachelor thesis tutor of Dr Tommaso Fellin at University of Verona
9. 2022: Bachelor thesis tutor of Dr Chiara Iunco at University of Verona
10. 2023: Bachelor thesis tutor of Dr Isabella Vaccari at University of Verona
11. 2023: Bachelor thesis tutor of Dr Francesco Conati at University of Verona
12. 2023: Bachelor thesis tutor of Dr Matteo Farinazzo at University of Verona
13. Ph.D co- tutor of Dr Tian Wang at University of Verona
14. Ph.D co- tutor of Dr Amalia Montini at University of Verona
15. Ph.D co- tutor of Dr Nicolas Binetti at University of Verona

THESIS COMMITTEE MEMBER

- Final degree exam for the Single-cycle Master's Degree Course in Medicine and Surgery - autumn session a.y. 2020-21 22 (22 October 2021)
- Final degree exam for the single-cycle master's degree course in Medicine and Surgery - extraordinary session a.y. 2020-21 (March 15, 2022)
- Final degree exam for the three-year degree course in biomedical laboratory techniques - 1st session AA 2020/2021 (13 October 2021: practical test, 27 October: discussion paper)
- Final degree exam for the three-year degree course in biomedical laboratory techniques - 2nd session AA 2020/2021 (April 21, 2022 practical test and discussion paper)
- Final degree exam for the three-year degree course in biomedical laboratory techniques - 1st session AA 2021/2022 (19 October 2022: practical test, 25 October: discussion paper)
- Final degree exam for the three-year degree course in biomedical laboratory techniques - 2nd session AA 2021/2022 (April 14, 2023 practical test and paper discussion)
- Final degree for the single-cycle master's degree course in Medicine and Surgery - summer session a.y. 2022-23 (June 26, 2023)

EDITORIAL ACTIVITY

- Associate editor in *Frontiers in Immunology*
- Reviewer of *JITC*
- Reviewer of *Vaccines* and ad hoc reviewer of other MDPI journals
- Reviewer of *Cellular Immunology*
- Ad hoc reviewer of *Oncotarget*

THIRD MISSION

08 December 2019. Verona Vicenza Brescia for life - marathon of good, TV interview on cancer research with AIRC
23 July 2018. "Cinema under the stars", Intervention on cancer research with AIRC
July 27, 2017. "Cinema under the stars", Intervention on cancer research with AIRC
21 April 2017. Grezzana (VR), Meeting with Researchers at the SS Redentore nursery school in Grezzana (VR),
Presentation entitled: Knowing cancer to prevent it

DIAGNOSTIC ACTIVITY

- 2016: Biologist national certification achieved at University of Parma.

Verona, 13/07/2023

Firma

