

BIOGRAPHICAL SKETCH

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NAME: Viviana Vallacchi

eRA COMMONS USER NAME (credential, e.g., agency login): not applicable

POSITION TITLE: PhD, Senior Staff Researcher

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
University of Milan, Italy	Master Degree	07/2003	Medical Biotechnologies
Open University, Milton Keynes, UK	Ph.D.	04/2009	Life and Biomolecular Sciences
University of Pavia, Italy	Professional Qualification in Biology	12/2020	Biology

A. Personal Statement

My research experience includes studies aimed at identifying and characterizing genes and microRNA involved in progression and metastatization of cutaneous melanoma, and in studying their potential as markers of progression and as therapeutic targets. During my postDoc, my research activity has been focused on the characterization of molecular networks associated with dysfunctional immune response and leading to melanoma progression, and on the analysis of circulating molecular markers, including microRNA and tumor mutations in circulating free DNA, for their association with disease progression and response to therapy. I am currently working in the Translational Immunology Unit, a research group with long-standing expertise in cancer immunology, dedicated to dissecting molecular pathways of immunogenicity and immunosuppression in cancer patients. I am involved in projects investigating immune-related mechanisms underlying disease progression and therapy resistance across different tumor types, including uveal melanoma..

B. Positions, Scientific Appointments, and Honors**Positions and Employment**

2001-2003	Research Student, Melanoma Genetics Laboratory, Immunotherapy of Human Tumors Unit, Fondazione IRCCS Istituto Nazionale dei Tumori, Milan
2003-2009	Fellow Researcher, Melanoma Genetics Laboratory, Immunotherapy of Human Tumors Unit, Fondazione IRCCS Istituto Nazionale dei Tumori, Milan
2009-2019	Post-Doc Researcher, Immunotherapy of Human Tumors Unit, Fondazione IRCCS Istituto Nazionale dei Tumori, Milan
2020-present	Senior Researcher, Immunotherapy of Human Tumors Unit, Fondazione IRCCS Istituto Nazionale dei Tumori, Milan

Honors

- 2009 Annual fellowship “Nicola Celano” sponsored by the Italian Association for Cancer Research (AIRC). Project title: “Role of CCN3 in melanoma cell interaction with the ECM for metastatic progression and chemoresistance”.
- 2016-2019 PI of the Cariplo Foundation GRANT “Biomedical research conducted by young researchers 2015” with the project entitled “MicroRNAs in the regulation of melanoma cell apoptosis and their application for therapeutic strategies”.
- 2018-2023 co-PI of the Young Researcher Italian Ministry of Health GRANT 2016 with the project entitled “Immunological profiling of patients with desmoid-type fibromatosis under wait and see approach”.
- 2021-2024 Collaborator of the Italian Ministry of Health GRANT 2019 with the project entitled “T cell immunity in soft tissue sarcoma of the extremities with complex karyotype: a prognostic marker and a therapeutic target”.
- 2022-2025 Collaborator of the 5x1000 Funds, Italian Ministry of Health–Institutional GRANT BRI2021 with the project entitled “Genomic analysis and personalized preclinical model development to identify novel therapeutic targets and determinants of drug response in soft-tissue sarcomas characterized by chromatin regulator-associated abnormalities”.
- 2024-2025 PI of the Institutional GRANT Linee di Ricerca 2023 with the project entitled “Dissecting translational correlates of response to anti-PD1 and anti-EGFR in patients with advanced Cutaneous Squamous Cell Cancer enrolled in the prospective phase II INT-sponsored trial I-Tackle (NCT03666325) by an ex-vivo 3D culture platform of patient derived tumor explants”.
- 2025-present Collaborator of the Institutional GRANT Linee di Ricerca 2024 with the project entitled “Dissecting the Immunological Paradox of Desmoid Fibromatosis to Improve Prognostic Strategies and Personalized Patient Management”.
- 2025-present Collaborator of the Italian Ministry of Health PNRR GRANT 2023 with the project entitled “Development of liquid biopsy based approaches for precision medicine in uveal melanoma patients”.
- 2025-present Collaborator of the Desmoid Tumor Research Foundation GRANT 2025 with the project entitled “Investigating immune mechanisms mediating tumor regression in patients with desmoid fibromatosis”.

C. Contributions to Science

My early publications reported results of the studies about the role of genes and immune-related transcriptional signature involved in metastatic progression and dysfunctional immune response in melanoma.

- Vallacchi V**, Daniotti M, Ratti F, Di Stasi D, Deho P, De Filippo A, Tragni G, Balsari A, Carbone A, Rivoltini L, Parmiani G, Lazar N, Perbal B, Rodolfo M. CCN3/nephroblastoma overexpressed matricellular protein regulates integrin expression, adhesion, and dissemination in melanoma. *Cancer Res.* 2008 Feb 1;68(3):715-23. doi: 10.1158/0008-5472.CAN-07-2103. PubMed PMID: 18245471.
- Vallacchi V**, Rodolfo M. Regulatory role of CCN3 in melanoma cell interaction with the extracellular matrix. *Cell Adh Migr.* 2009 Jan-Mar;3(1):7-10. doi: 10.4161/cam.3.1.6836. Epub 2009 Jan 21. PubMed PMID: 19372759; PubMed Central PMCID: PMC2675140.
- Vallacchi V**, Vergani E, Camisaschi C, Deho P, Cabras AD, Sensi M, De Cecco L, Bassani N, Ambrogi F, Carbone A, Crippa F, Vergani B, Frati P, Arienti F, Patuzzo R, Villa A, Biganzoli E, Canevari S, Santinami M, Castelli C, Rivoltini L, Rodolfo M. Transcriptional profiling of melanoma sentinel nodes identify patients with poor outcome and reveal an association of CD30(+) T lymphocytes with progression. *Cancer Res.* 2014 Jan 1;74(1):130-40. doi: 10.1158/0008-5472.CAN-13-1672. PubMed PMID: 24395820.
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- Vallacchi V**, Camisaschi C, Dugo M, Vergani E, Deho P, Gualeni A, Huber V, Gloghini A, Maurichi A, Santinami M, Sensi M, Castelli C, Rivoltini L, Rodolfo M. microRNA Expression in Sentinel Nodes from Progressing Melanoma Patients Identifies Networks Associated with Dysfunctional Immune Response. *Genes (Basel).* 2016 Dec 14;7(12). doi: 10.3390/genes7120124. PubMed PMID: 27983661; PubMed Central PMCID: PMC5192500.

In the last years, my publications reported results of studies aimed at identifying molecular pathways and mechanisms that, by impairing immune response both at tumor and systemic level in cancer patients, associate to drug resistance and poor outcome. They also reported results about mutated circulating tumor DNA detection as a tool to monitor disease progression in melanoma patients.

- Huber V*, **Vallacchi V***, Fleming V, Hu X, Cova A, Dugo M, Shahaj E, Sulsenti R, Vergani E, Filipazzi P, De Laurentiis A, Lalli L, Di Guardo L, Patuzzo R, Vergani B, Casiraghi E, Cossa M, Gualeni A, Bollati V, Arienti F, De Braud F, Mariani L, Villa A, Altevoigt P, Umansky V, Rodolfo M, Rivoltini L. Tumor-derived microRNAs induce myeloid suppressor cells and predict immunotherapy resistance in melanoma. *J Clin Invest.* 2018 Dec 3;128(12):5505-5516. doi: 10.1172/JCI98060. Epub 2018 Nov 5. PubMed PMID: 30260323; PubMed Central PMCID: PMC6264733. *equally contributing authors

-Tuccitto A, Shahaj E, Vergani E, Ferro S, Huber V, Rodolfo M, Castelli C, Rivoltini L, **Vallacchi V**. Immunosuppressive circuits in tumor microenvironment and their influence on cancer treatment efficacy. *Virchows Arch*. 2019 Apr;474(4):407-420. doi: 10.1007/s00428-018-2477-z. Epub 2018 Oct 29. Review. PubMed PMID: 30374798

-Daveri E, Vergani E, Shahaj E, Bergamaschi L, La Magra S, Dosi M, Castelli C, Rodolfo M, Rivoltini L, **Vallacchi V***, Huber V*. microRNAs Shape Myeloid Cell-Mediated Resistance to Cancer Immunotherapy. *Front Immunol*. 2020;11:1214. doi: 10.3389/fimmu.2020.01214. eCollection 2020. Review. PubMed PMID: 32793185; PubMed Central PMCID: PMC7387687. *equally contributing authors

-Vergani E, Dugo M, Cossa M, Frigerio S, Di Guardo L, Gallino G, Mattavelli I, Vergani B, Lalli L, Tamborini E, Valeri B, Gargiuli C, Shahaj E, Ferrarini M, Ferrero E, Gomez Lira M, Huber V, Vecchio MD, Sensi M, Leone BE, Santinami M, Rivoltini L, Rodolfo M, **Vallacchi V**. miR-146a-5p impairs melanoma resistance to kinase inhibitors by targeting COX2 and regulating NFkB-mediated inflammatory mediators. *Cell Commun Signal*. 2020 Sep 23;18(1):156. doi: 10.1186/s12964-020-00601-1. PubMed PMID: 32967672; PubMed Central PMCID: PMC7510138.

-Daniotti M, **Vallacchi V**, Rivoltini L, Patuzzo R, Santinami M, Arienti F, Cutolo G, Pierotti MA, Parmiani G, Rodolfo M. Detection of mutated BRAFV600E variant in circulating DNA of stage III-IV melanoma patients. *Int J Cancer*. 2007 Jun 1;120(11):2439-44. doi: 10.1002/ijc.22598. PubMed PMID: 17315191.

-Di Guardo L, Randon G, Corti F, **Vallacchi V**, Raimondi A, Fucà G, Bini M, Maurichi A, Patuzzo R, Gallino G, Mattavelli I, Ruggeri R, Angi M, Cossa M, Valeri B, Cimminiello C, Santinami M, Rivoltini L, de Braud F, Rodolfo M, Vecchio MD. Liquid Biopsy and Radiological Response Predict Outcomes Following Discontinuation of Targeted Therapy in Patients with BRAF Mutated Melanoma. *Oncologist*. 2021 Dec;26(12):1079-1084. doi: 10.1002/onco.13926. Epub 2021 Sep 21. PubMed PMID: 34355463; PubMed Central PMCID: PMC8649022.

-Vergani E, Daveri E, **Vallacchi V**, Bergamaschi L, Lalli L, Castelli C, Rodolfo M, Rivoltini L, Huber V. Extracellular vesicles in anti-tumor immunity. *Semin Cancer Biol*. 2022 Nov;86(Pt 1):64-79. doi: 10.1016/j.semcancer.2021.09.004. Epub 2021 Sep 9. PMID: 34509614.

-Vergani E, Frigerio S, Dugo M, Devecchi A, Feltrin E, De Cecco L, **Vallacchi V**, Cossa M, Di Guardo L, Manoukian S, Peissel B, Ferrari A, Gallino G, Maurichi A, Rivoltini L, Sensi M, Rodolfo M. Genetic Variants and Somatic Alterations Associated with MITF-E318K Germline Mutation in Melanoma Patients. *Genes (Basel)*. 2021 Sep 18;12(9):1440. doi: 10.3390/genes12091440. PMID: 34573422; PMCID: PMC8469310.

-Vernieri C, Fucà G, Ligorio F, Huber V, Vingiani A, Iannelli F, Raimondi A, Rinchai D, Frigè G, Belfiore A, Lalli L, Chiodoni C, Cancila V, Zanardi F, Ajazi A, Cortellino S, **Vallacchi V**, Squarcina P, Cova A, Pesce S, Frati P, Mall R, Corsetto PA, Rizzo AM, Ferraris C, Folli S, Garassino MC, Capri G, Bianchi G, Colombo MP, Minucci S, Foiani M, Longo VD, Apolone G, Torri V, Pruneri G, Bedognetti D, Rivoltini L, de Braud F. Fasting-Mimicking Diet Is Safe and Reshapes Metabolism and Antitumor Immunity in Patients with Cancer. *Cancer Discov*. 2022 Jan;12(1):90-107. doi: 10.1158/2159-8290.CD-21-0030. Epub 2021 Nov 17. PMID: 34789537; PMCID: PMC9762338.

-Vergani E, Busico A, Dugo M, Devecchi A, Valeri B, Cossa M, Di Guardo L, De Cecco L, Feltrin E, Valle G, Deho P, Frigerio S, Lalli L, Gallino G, Del Vecchio M, Santinami M, Pruneri G, Tamborini E, Rivoltini L, Sensi M, **Vallacchi V***, Rodolfo M*. Genetic Layout of Melanoma Lesions Is Associated with BRAF/MEK-Targeted Therapy Resistance and Transcriptional Profiles. *J Invest Dermatol*. 2022 Nov;142(11):3030-3040.e5. doi: 10.1016/j.jid.2022.04.027. Epub 2022 May 26. PMID: 35643181. *equally contributing authors

-Fortunato O, Huber V, Segale M, Cova A, **Vallacchi V**, Squarcina P, Rivoltini L, Suatoni P, Sozzi G, Pastorino U, Boeri M. Development of a Molecular Blood-Based Immune Signature Classifier as Biomarker for Risks Assessment in Lung Cancer Screening. *Cancer Epidemiol Biomarkers Prev*. 2022 Nov 2;31(11):2020-2029. doi: 10.1158/1055-9965.EPI-22-0689. PMID: 36112827; PMCID: PMC9627262.

-**Vallacchi V**, Vergani E, Cossa M, Gargiuli C, Busico A, Devecchi A, Dugo M, Bergamaschi L, De Cecco L, Cavalieri S, Valeri B, Tamborini E, Gallino G, Del Vecchio M, Santinami M, Sensi M, Rivoltini L, Di Guardo L, Rodolfo M. Multistep tumor genetic evolution and changes in immunogenicity trigger immune-mediated disease eradication in stage IV melanoma: lessons from a single case. *J Immunother Cancer*. 2024 Jan 4;12(1):e007612. doi: 10.1136/jitc-2023-007612. PMID: 38177075; PMCID: PMC10773440.

Recently, my publications reported results obtained in ongoing projects aimed at exploring immune-related mechanisms in different sarcoma histologies.

-Stacchiotti S, Ferrari S, Redondo A, Hindi N, Palmerini E, Vaz Salgado MA, Frezza AM, Casali PG, Gutierrez A, Lopez-Pousa A, Grignani G, Italiano A, LeCesne A, Dumont S, Blay JY, Penel N, Bernabeu D, de Alava E, Karanian M, Morosi C, Brich S, Dagrada GP, **Vallacchi V**, Castelli C, Brenca M, Racanelli D, Maestro R, Collini P, Cruz J, Martin-Broto J. Pazopanib for treatment of advanced extraskeletal myxoid chondrosarcoma: a multicentre, single-arm, phase 2 trial. *Lancet Oncol*. 2019 Sep;20(9):1252-1262. doi: 10.1016/S1470-2045(19)30319-5. Epub 2019 Jul 19. PubMed PMID: 31331701.

-Tazzari M, Bergamaschi L, De Vita A, Collini P, Barisella M, Bertolotti A, Ibrahim T, Pasquali S, Castelli C, **Vallacchi V**. Molecular Determinants of Soft Tissue Sarcoma Immunity: Targets for Immune Intervention. *Int J Mol Sci*. 2021 Jul 13;22(14). doi: 10.3390/ijms22147518. Review. PubMed PMID: 34299136; PubMed Central PMCID: PMC8303572.

-**Vallacchi V**, Bergamaschi L, Perrone F, Rini F, Rivoltini L, Castelli C, Gronchi A, Colombo C. 1537P Dissecting inflammation in patients with desmoid fibromatosis to identify prognostic biomarkers. *Annals of Oncology*, <https://doi.org/10.1016/j.annonc.2021.08.867>;

-Bergamaschi L, Perrone F, Rini F, Rivoltini L, Castelli C, Gronchi A, Colombo C and **Vallacchi V**. 1 Dissecting β -catenin associated inflammation in patients with desmoid fibromatosis to identify prognostic biomarkers. *Journal for ImmunoTherapy of Cancer*. <http://dx.doi.org/10.1136/jitc-2021-SITC2021.001>

-Huber V, **Vallacchi V**, Daveri E, Vergani E. 3D models for melanoma $\gamma\delta$ T cell-based immunotherapy. *Clin Transl Med*. 2022 Jun;12(6):e926. doi: 10.1002/ctm2.926. PMID: 35696610; PMCID: PMC9191865.

-Rodolfo M, Huber V, Cossa M, Gallino G, Leone BE, **Vallacchi V**, Rivoltini L, Vergani E. 3D tumor explant as a novel platform to investigate therapeutic pathways and predictive biomarkers in cancer patients. *Front Immunol*. 2022 Dec 14;13:1068091. doi: 10.3389/fimmu.2022.1068091. PMID: 36591316; PMCID: PMC9794575.

-Pasquali S*, **Vallacchi V***, Lalli L, Collini P, Barisella M, Romagosa C, Bague S, Coindre JM, Dei Tos AP, Palmerini E, Quagliuolo V, Martin-Broto J, Lopez-Pousa A, Grignani G, Blay JY, Beveridge RD, Casiraghi E, Brich S, Renne SL, Bergamaschi L, Vergani B,

Sbaraglia M, Casali PG, Rivoltini L, Stacchiotti S, Gronchi A. Spatial distribution of tumour immune infiltrate predicts outcomes of patients with high-risk soft tissue sarcomas after neoadjuvant chemotherapy. *EBioMedicine*. 2024 Aug;106:105220. doi: 10.1016/j.ebiom.2024.105220. Epub 2024 Jul 16. PMID: 39018755; PMCID: PMC11287012. *equally contributing authors

-Bergamaschi L, Zorza M, Rini F, Perrone F, Rivoltini L, Gronchi A, Pasquali S, Zaffaroni N, **Vallacchi V***, Colombo C*. Circulating Tumor DNA in Patients with Desmoid Fibromatosis during Active Surveillance. *Ann Surg Oncol*. 2024 Dec;31(13):9265-9271. doi: 10.1245/s10434-024-16147-2. Epub 2024 Sep 7. PMID: 39244517. *equally contributing authors

-Pasquali S, Iadecola S, Vanzulli A, Infante G, Bologna M, Corino V, Greco G, Vigorito R, Morosi C, Beretta A, Percio S, **Vallacchi V**, Collini P, Sanfilippo R, Fabbioni C, Stacchiotti S, Fiore M, Huang P, Benelli M, Mainardi L, Miceli R, Gronchi A, Callegaro D. Radiomic features of primary retroperitoneal sarcomas: a prognostic study. *Eur J Cancer*. 2024 Dec;213:115120. doi: 10.1016/j.ejca.2024.115120. Epub 2024 Nov 9. PMID: 39541785.

Complete List of Published Work in MyBibliography:

<https://www.ncbi.nlm.nih.gov/myncbi/viviana.vallacchi.1/bibliography/public/>