

Alessandra Fiore

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Date of birth

November 19, 1989
Torino, Italy

Education

2014 – 2016 PhD in Inflammation, Immunity and Cancer, University of Verona, Verona, Italy
2011 - 2013 Masters Degrees in Medical Biotechnology, University of Torino, Torino, Italy (110/110)
2008 - 2011 Bachelor of Biotechnology, University of Torino, Torino, Italy (103/110)

Professional experience

2023 – Assistant professor (SSD BIO/10; PROGETTO PNRR MNESYS)
Department of Neurosciences, Biomedicine and Movement Sciences,
Section of Biological Chemistry, University of Verona, Italy

2022 – 2023 Post-Doctoral Fellow (DM737/2021 PNR)
Department of Neurosciences, Biomedicine and Movement Sciences,
Section of Biological Chemistry, University of Verona, Italy
Laboratory of Prof. Massimo Donadelli

2018 – 2021 Post-Doctoral Fellow (AIRC fellowship for abroad and MPIB researcher contract)
“Immunoregulation” research group
Max-Planck-Institut für Biochemie, Martinsried, Germany
Laboratory of Prof. Peter J Murray

2017 – 2018 Post-Doctoral Fellow (Fellowship from the Department of Medicine, UNIVR)
Immunology section, University of Verona, Italy
Laboratory of Prof. Vincenzo Bronte

Certified research activity

2017 Personnel involved in the research “Exosome-driven antiviral response in the metastatic dissemination of pancreatic cancer” funded by AIRC Investigator Grant (PI: Prof. Vincenzo Bronte)

2016 Personnel involved in the research “Innovative tools for cancer risk assessment and early diagnosis” funded by AIRC 5 per mille 2011 (PI: Prof. Vincenzo Bronte)

Fellowships and prizes

2021	Best oral communication prize at 33 rd AICC annual conference: International meeting on cancer metabolism for the talk “Kynurenine importation by SLC7A11 propagates anti-ferroptotic signaling”.
2021	MPIB Junior Scientists' Publication Award for “Anti-ferroptotic mechanism of IL4i1-mediated amino acid metabolism”
2018 – 2020	Post-doctoral fellowship “Mechanistic dissection of tryptophan metabolism in the pancreatic tumor microenvironment” from The Italian Association for Cancer Research (AIRC)
2017 - 2018	Post-doctoral fellowship “Biological effect of inflammasome activation on myeloid derived suppressor cells (MDSCs)” from Department of Medicine, University of Verona.

Courses

<u>Name of course</u>	<u>Organization</u>	<u>Year</u>
Fast Forward Project Management	Mind Matters	2021
GMP basic course	GMP academy	2021
Workshop of Intercultural communication in science	Natural Science Career	2021
Biosafety level 3 (BSL3)	Assing, the Research partner	2020
Role of collective protective equipment in the biological laboratory	University of Verona	2016

Patents

Fiore A., Ugel S., Sahin U. and Bronte V. Engineered cells for inducing tolerance. Biontech (Mainz, DE), PCT/EP2017/051068 (2017)

Funding

2022 MyFirst AIRC grant supported by Associazione Italiana per la Ricerca sul Cancro (AIRC) Principal Investigator of the project entitled “Mutant-p53 induces ferroptosis resistance in pancreatic cancer” (2023-2027; 488.840,00€); project number: 27080

National and International conferences

Oral communications:

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| 2021 | Selected oral presentation at the European Molecular Biology Organization (EMBO) conference: EMBO Workshop, Cancer immunometabolism, Barcelona, Spain with the oral presentation “Kynurenine importation by SLC7A11 propagates anti-ferroptotic signaling” |
| 2021 | Selected oral presentation at the 33 rd AICC Annual Conference International Meeting On Cancer Metabolism with the oral presentation “Kynurenine importation by SLC7A11 propagates anti-ferroptotic signaling”. |

Posters:

- 2013 Riccardo F., Arigoni M., Iezzi M., Longo D.L., Carrara M., **Fiore A.**, Forni G., Calogero R., Quaglini E. and Cavallo F., *"Characterization of a genetic mouse model of lung cancer: a promise to identify oncoantigens associated with different stages of NSCLC progression"* 15th International Congress of Immunology (ICI), Milano, Italia.
- 2013 Riccardo F., Iussich S., Maniscalco L., Lorda Mayayo S., La Rosa G., Arigoni M., De Maria R., Gattino F., Lanzardo S., Lardone E., Martano E., Morello E., Prestigio S., **Fiore A.**, Quaglini E., Zabarino S., Ferrone S., Buracco P. and Cavallo F., *"Vaccination with human CSPG4 DNA induces an anti-tumor antibody response and prolongs survival in dogs with oral malignant melanoma"*, 10th International Veterinary Immunology Symposium, Milano, Italia.
- 2014 Riccardo F., **Fiore A.**, Arigoni M., Iezzi M., Longo D.L., Carrara M., Forni G., Calogero R., Quaglini E. and Cavallo F., *"Characterization of a genetic mouse model of lung cancer: a promise to identify oncoantigens associated with different stages of NSCLC progression"*, 2nd Conference on Gene Vaccination in Cancer, Ascoli Piceno, Italia.
- 2014 Matic S., Trovato R., Arata L., **Fiore A.**, Quaglini E., Cavallo F., Noris E., *"The tumour receptor protein rat ErbB2 expressed in plants is immunogenic in mice and confers protective immunity against mammary tumour development"* 2nd Conference on Gene Vaccination in Cancer, Ascoli Piceno, Italia.
- 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.
- 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"*, Network Italiano per la Bioterapia dei Tumori (NIBIT), Siena, Italia.
- 2016 De Sanctis F., Ugel S., Fassan M., Lamolinara A., Iezzi M., Boschi F., Sbarbati A., Youngkyu P., Sandri S., Trovato R., **Fiore A.**, Sartori S., Poffe O., Cestari T., Anselmi C., Tuveson D., Lawlor R.T., Scarpa A., Sartoris S. and Bronte V., *"Telomerase adoptive cell transfer in pancreatic cancer"*, Società Italiana di Cancerologia (SIC), Verona Italia.
- 2018 **Fiore A.**, Ugel S., De Sanctis F., Sandri S., Fracasso G., Trovato R., Sartoris S., Solito S., Mandruzzato S., Vascotto F., Hippen K.L., Mondanelli G., Grohmann U., Piro G., Carbone C., Melisi D., Lawlor R.T., Scarpa A., Lamolinara A., Iezzi M., Fassan M., Biccato S., Blazar R., Sahin U., Murray P.J. and Bronte V., *"FLIP controls immune regulatory transcriptional program in suppressive monocytes by canonical NF- κ B activation"*, European Macrophage and Dendritic Cell Society (EMDS), Verona, Italia.
- 2018 Trovato R., **Fiore A.**, Sartori S., Giugno R., Cascione L., Canè S., De Sanctis F., Poffe O., Anselmi C., Hofer F., Sartoris S., Paiella S., Salvia R., Rusev B., Lawlor R.T., Solito S., Mandruzzato S., Bassi C., Scarpa A., Bronte V. and Ugel S. *"Characterization of circulating and tumor-infiltrating myeloid-derived suppressor cells in patients affected by pancreatic ductal adenocarcinoma"*, European Macrophage and Dendritic Cell Society (EMDS), Verona, Italia.
- 2019 Trovato R., **Fiore A.**, Sartori S., Giugno R., Cascione L., Canè S., De Sanctis F., Poffe O., Anselmi C., Hofer F., Sartoris S., Paiella S., Salvia R., Corbo V., Lawlor R.T., 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"* Europe's Cancer Immunotherapy Meeting (CMIT), Mainz, Germania.

- 2021 Bronte V., Ugel S., Tinazzi E., Vella A., De Sanctis F., Canè S., Batani V., Trovato R., **Fiore A.**, Petrova V., Hofer F., Barouni R.M., Musiu C., Caligola S., Pinton L., Torroni L., Polati E., Donadello K., Friso S., Pizzolo F., Iezzi M., Facciotti F., Pelicci P.G., Righetti D., Bazzoni P., Rampudda M., Comel A., Mosaner W., Lunardi C., Olivieri O., *"Baricitinib restrains the immune dysregulation in patients with severe COVID-19"*, Network Italiano per la Bioterapia dei Tumori (NIBIT), online.
- 2021 Zeitler L., **Fiore A.**, Murray P., *"Anti-ferroptotic mechanism of IL4i1-mediated amino acid metabolism"*, EMBO Workshop, Cancer immunometabolism, Barcelona, Spain
- 2022 Musiu C., Caligola S., **Fiore A.**, Lamolinara A., Frusteri C., Del Pizzo F.D., De Sanctis F., Canè S., Adamo A., Hofer F., Barouni R.M., Grilli A., Zilio S., Serafini P., Tacconelli E., Donadello K., Gottin L., Polati E., Girelli D., Polidoro I., Iezzi P.A., Angelucci D., Capece A., Chen Y., Shi Z.L., Murray P.J., Chilosì M., Amit I., Biciato S., Iezzi M., Bronte V., Ugel S., *"Fatal cytokine release syndrome by an aberrant FLIP/STAT3 axis"*, Network Italiano per la Bioterapia dei Tumori (NIBIT), Padova, Italia.
- 2022 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 sario G., Zappacosta B., Del Pizzo F., Fassan M., Dugnani E., Piemonti L., Bottani E., Decimo I., Paiella S., Salvia R., Lawlor R.T., Corbo V., Park Y., Tuveson D.A., Bassi C., Scarpa A., Iezzi M., Ugel S. and Bronte V., *"Interrupting the nitrosative stress fuels tumor-specific cytotoxic T lymphocytes in pancreatic cancer"*, the 21st International Conference on Progress in Vaccination Against Cancer" (PIVAC-22), Torino, Italia
- 2022 Danzi F., Butera G., **Fiore A.**, Masetto F., Pacchiana R., Donadelli M., *"Mutant p53 induces HMGA1 secretion promoting chemoresistance of Pancreatic ductal adenocarcinoma cells"*, International Society for Cancer Metabolism (ISCAM), Torino, Italia

Publications:

1. Riccardo F., Iussich S., Maniscalco L., Lorda Mayayo S., La Rosa G., Arigoni M., De Maria R., Gattino F., Lanzardo S., Lardone E., Martano M., Morello E., Prestigio S., **Fiore A.**, Quagliano E., Zabarino S., Ferrone S., Buracco P., Cavallo F. CSPG4-specific immunity and survival prolongation in dogs with oral malignant melanoma immunized with human CSPG4 DNA. *Clin Cancer Res.* 2014 <https://clincancerres.aacrjournals.org/content/20/14/3753.long>
2. Riccardo F., Arigoni M., Buson G., Zago E., Iezzi M., Longo D., Carrara M., **Fiore A.**, Nuzzo S., Biciato S., Nanni P., Landuzzi L., Cavallo F., Calogero R., Quagliano E. Characterization of a genetic mouse model of lung cancer: a promise to identify Non-Small Cell Lung Cancer therapeutic targets and biomarkers. *BMC Genomics.* 2014 <https://bmcbgenomics.biomedcentral.com/articles/10.1186/1471-2164-15-S3-S1>
3. 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 M.T., Nishimura M.I., Iezzi M., Sartoris S., Bronte V., Ugel S. Effective control of acute myeloid leukaemia and acute lymphoblastic leukaemia progression by telomerase specific adoptive T-cell therapy. *Oncotarget.* 2017 <https://www.oncotarget.com/article/18115/text/>
4. 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. *Vaccine.* 2018 <https://www.sciencedirect.com/science/article/pii/S0264410X18306170?via%3Dihub>
5. **Fiore, A***, S. Ugel*, F. De Sanctis, S. Sandri, G. Fracasso, R. Trovato, S. Sartoris, S. Solito, S. Mandruzzato, F. Vascotto, K. L. Hippen, G. Mondanelli, U. Grohmann, G. Piro, C. Carbone, D. Melisi, R. T. Lawlor, A. Scarpa, A. Lamolinara, M. Iezzi, M. Fassan, S. Biciato, B. R. Blazar, U. Sahin, P. J. Murray and V. Bronte. Induction of immunosuppressive functions and NF-κB by FLIP in monocytes. *Nature Communication* (2018) 9: 5193. <https://www.nature.com/articles/s41467-018-07654-4>
*Shared co-first authorship

6. 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, Ugel S. Immunosuppression by monocytic myeloid-derived suppressor cells in patients with pancreatic ductal carcinoma is orchestrated by STAT3. *J Immunother Cancer*. 2019 <https://jitc.bmj.com/content/7/1/255.long> *Shared co-first authorship
7. 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. Organoid-Transplant Model Systems to Study the Effects of Obesity on the Pancreatic Carcinogenesis in vivo. *Front Cell Dev Biol*. 2020 <https://www.frontiersin.org/articles/10.3389/fcell.2020.00308/full>
8. Bronte V., Ugel S., Tinazzi E., Vella A., De Sanctis F., Canè S., Batani V., Trovato R., **Fiore A.**, Petrova V., Hofer F., Barouni R.M., Musiu C., Caligola S., Pinton L., Torroni L., Polati E., Donadello K., Friso S., Pizzolo F., Iezzi M., Facciotti F., Pelicci P.G., Righetti D., Bazzoni P., Rampudda M., Comel A., Mosaner W., Lunardi C., Olivieri O., Baricitinib restrains the immune dysregulation in patients with severe COVID-19. *O. J Clin Invest*. 2020 <https://www.jci.org/articles/view/141772>
9. Zeitler L*, **Fiore A.***, Meyer C., Russier M., Zanella G., Suppmann S., Gargaro M, Sidhu S. S., Seshagiri S., Ohnmacht C., Kocher T., Fallarino F., Linkermann A. and Murray P. J. Anti-ferroptotic mechanism of IL4i1-mediated amino acid metabolism. *eLife* (2021) 10. <https://www.ncbi.nlm.nih.gov/pubmed/33646117> *Shared co-first authorship
10. **Fiore, A.** and P. J. Murray. Tryptophan and indole metabolism in immune regulation. *Curr Opin Immunol* (2021) 70: 7-14. <https://www.ncbi.nlm.nih.gov/pubmed/33418116>
11. Bost P., De Sanctis F., Canè S., Ugel S., Donadello K., Castellucci M., Eyal D., **Fiore A.**, Anselmi C., Barouni R.M., 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. Deciphering the state of immune silence in fatal COVID-19 patients. *Nat Communication* (2021) <https://www.nature.com/articles/s41467-021-21702-6>
12. Ciccocioppo R., Gibellini D., Astori G., Bernardi M., Bozza A., Chiericato 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. The immune modulatory effects of umbilical cord-derived mesenchymal stromal cells in severe COVID-19 pneumonia. *Stem Cell Research & Therapy* (2021) <https://stemcellres.biomedcentral.com/articles/10.1186/s13287-021-02376-9>
13. 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 sario G., Zappacosta B., Del Pizzo F., Fassan M., Dugnani E., Piemonti L., Bottani E., Decimo I., Paiella S., Salvia R., Lawlor R.T., Corbo V., Park Y., Tuveson D.A., Bassi C., Scarpa A., Iezzi M., Ugel S. and Bronte V. Interrupting the nitrosative stress fuels tumor-specific cytotoxic T lymphocytes in pancreatic cancer. *J Immunother Cancer* (2022) Jan;10(1):e003549. doi: 10.1136/jitc-2021-003549. <https://pubmed.ncbi.nlm.nih.gov/35022194/>
14. Musiu C.*, Caligola S.*, **Fiore A.***, Lamolinara A., Frusteri C., Del Pizzo F.D., De Sanctis F., Canè S., Adamo A., Hofer F., Barouni R.M., Grilli A., Zilio S., Serafini P., Tacconelli E., Donadello K., Gottin L., Polati E., Girelli D., Polidoro I., Iezzi P.A., Angelucci D., Capece A., Chen Y., Shi Z.L., Murray P.J., Chilosi M., Amit I., Bicciato S., Iezzi M., Bronte V., Ugel S. Fatal cytokine release syndrome by an aberrant FLIP/STAT3 axis. *Cell Death Differ*. (2021) <https://www.nature.com/articles/s41418-021-00866-0> *Shared co-first authorship
15. Butera G., Manfredi M., **Fiore A.**, Brandi J., Pacchiana R., De Giorgis V., Barberis E., Vanella V., Galasso M., Scupoli M.T., Marengo E., Cecconi D. Tumor Suppressor Role of Wild-Type P53-Dependent Secretome and Its Proteomic Identification in PDAC. *Biomolecules* (2022) <https://www.mdpi.com/2218-273X/12/2/305>
16. **Fiore A.**, Zeitler L., Russier M., Groß A., Hiller M.K., Parker J.L., Stier L., Köcher T., Newstead S. and Murray P.J. Kynurenine importation by SLC7A11 propagates anti-ferroptotic signaling. *Molecular Cell*. (2022) <https://www.sciencedirect.com/science/article/pii/S1097276522001125>

17. Masini M.A., Bonetto V., Manfredi M., Pastò A., Barberis E., Timo S., Vita V. Vanella, Robotti E., Masetto F., Andreoli F., **Fiore A.**, Tavella S., Sica A., Donadelli M., Marengo E., Prolonged exposure to simulated microgravity promotes stemness impairing morphological, metabolic and migratory profile of pancreatic cancer cells: a comprehensive proteomic, lipidomic and transcriptomic analysis. Cellular and Molecular Life Sciences (2022) <https://link.springer.com/article/10.1007/s00018-022-04243-z>
18. Brüggenthies J.B., **Fiore A.**, Russier M., Bitsina C., Brötzmann J., Kordes S., Menninger S., Wolf A., Conti E., Eickhoff J.A. and Murray P.J., A cell-based chemical-genetic screen for amino acid stress response inhibitors reveal torins reverse GCN2 signaling (2022) J. Biol. Chem. [https://www.jbc.org/article/S0021-9258\(22\)01072-9/fulltext](https://www.jbc.org/article/S0021-9258(22)01072-9/fulltext)
19. Danzi F., Pacchiana R., Mafficini A., Scupoli M.T., Scarpa A., Donadelli M., **Fiore A.**, To metabolomics and beyond: a technological portfolio to investigate cancer metabolism. Signal Transduction and Targeted Therapy (2023). <https://www.nature.com/articles/s41392-023-01380-0>

Publication metrics

SCOPUS:

Documenti: 19

Hirsch h index: 10

Citations: 561

Web of Science

Documenti: 18

Hirsch h index: 10

Citations: 545

Google Scholar

Documenti: 20

Hirsch h index: 11

Citations: 755

Professional Services

Ad-hoc Reviewer:

Frontiers in Immunology

FEBS journal

Drug discovery today

International Immunopharmacology

Scientific Reports

Journal of Cellular and Molecular Medicine

Cell death and disease

As certified by Clarivate (25 verified peer reviews)

<https://www.webofscience.com/wos/author/record/2286456>

Memberships

2021 – present

Member of the Associazione italiana di colture cellulari (AICC)

2023 – present

Member of the Italian Society of Biochemistry and Molecular Biology (SIB)

Teaching experience

05-07/12/2022 Course entitled "A technological perspective on cancer metabolism" for the PhD course in Molecular medicine at University of Verona
16/02/2022 Seminar for the PhD course in Molecular medicine at University of Verona

Student's supervision

Federica Danzi	PhD student (University of Verona)	2022
Chiara Mortali	Master student (University of Verona)	2022
Gaia Zanella	Erasmus exchange (MPIB, from University of Perugia)	2020
Aphrodite Demitriou	Erasmus exchange (MPIB, from University of Thessaloniki)	2019
Luca Fianza	Master student (University of Verona)	2018
Andrea Terranera	Master student (University of Verona)	2018
Lavinia Benini	Master student (University of Verona)	2017
Neil Ramos	Master student (University of Verona)	2016

Verona, 12/04/23

Firma: Alessandra Fiore