

Silvia Bressan, PhD

Oct 2025 – ongoing **Scientist in Translational Oncology and Immunotherapy with expertise in biomarker discovery, patient cohorts, CAR-T therapies, and multi-omics approaches**, Translational Immunotherapy team

PhD-trained translational immunologist with expertise in cancer immunotherapy, biomarker discovery, and multi-omics analysis. Experience leading cross-functional projects integrating patient cohorts, single-cell sequencing, spatial transcriptomics, and computational biology. First-author publications in Cancer Cell and inventor on immunotherapy-related patents. Proven ability to translate biological discoveries into therapeutic strategies and clinical hypotheses.

EXPERTISES

Translational oncology
Cancer immunotherapy
Biomarker discovery
Single-cell transcriptomics
Spatial transcriptomics
TCR profiling
Clinical cohort analysis
Flow cytometry and immune monitoring
CAR-T development
Cross-functional project leadership

DRUG DISCOVERY AND TRANSLATIONAL RESEARCH

Identified Nectin2 as a novel immunotherapeutic target in prostate cancer.
Co-inventor on two patent applications related to Nectin2-targeting antibodies and CAR-T therapies.
Contributed to development of therapeutic strategies involving CAR-T, antibodies, ADCs and NK-cell-mediated anti-tumor responses.
Led biomarker discovery efforts integrating clinical and multi-omics datasets.

PATENTS

- 1. Patent application EP4716696A1** Monospecific and bispecific antibodies and antibody-drug conjugates targeting nectin2 (cd112) and psma.
- 2. Patent application WO2024240899A1** Dual targeting of psma and nectin2 in prostate cancer.

PAST POSITIONS

May 2023 – July 2025 **Postdoctoral Researcher**, Immuno Oncology team, Institute of Oncology Research (IOR), Bellinzona, Switzerland, Andrea Alimonti Lab

EDUCATION

Oct 2020 – May 2023 **PhD** in Molecular Pharmacology (Università degli studi di Padova, Italy) and **cotutelage** of PhD thesis in Cancer Biology and Oncology (Università della svizzera italiana, Switzerland) Italy/Switzerland

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Thesis supervisor: **Andrea Alimonti** IOR Bellinzona

Title: Identification and targeting of novel immune checkpoint in prostate cancer

Jan 2019 – Oct 2020 **Research associate**, Veneto Institute of Molecular Medicine (VIMM), Italy.

Project: Generation and validation of *in vitro* models to study senescence both in cancer and aging.

Oct 2016 – Sept 2019 **M.Sc.** in Pharmaceutical Biotechnologies, University of Padova, Italy

Thesis supervisor: **Monica Montopoli**, Department of Pharmaceutical and Pharmacological Sciences, Padova, Italy

Title: Identification and validation of novel targets for senolytic therapy in PCa.

Oct 2013 – Sept 2016 **B.Sc.** in Biotechnology, Department of Pharmaceutical and Pharmacological Sciences, University of Padova, Italy

Thesis supervisor: **Claudia Sissi**, Department of Pharmaceutical and Pharmacological Sciences, University of Padova,

Title: Study of the effects of replacement in polycyclic aromatic derivative in the recognition of G-quadruplex structures

PUBLICATIONS

-Targeting the Nectin2 for improved CAR T cell therapy in castration-resistant prostate cancer.

Original research (Cell, under review)

Silvia Bressan 1,2,3#, Anna Kohl1,4,5,6,7,8#, Bianca Calì1, Martina Troiani1,3 , Wei Yuan9, , Giuseppe Attanasio1, Simone Mosole1, Saman Sharifi2,10, Jana de Sostoa5,6,7,8, Sara Zumerle10,11, Emiliano Pasquini1, Nicolò Pernigoni1, Luisa Maraccani1,2,3, Cristina Dongilli1, Aurora Valdata1,4, Daniela Brina1, Francesca Galuppini12, Matteo Fassan12, Lewis Gallagher9, Denisa Bogdan9, Ines Figueiredo9, Rita Pereira9, Johan Ferrari13, Thomas McKee13, Jean-Christophe Tille14, Philippe Hammel15, Pierre Cosson15, Yu Chen16, Jacopo Sgrignani17, Andrea Cavalli17, Valérie Dutoit6,7,8, Johann De Bono9, Denis Migliorini5,6,7,8*, Andrea Alimonti1,3,4,10,11*

-Gleditsioside E triterpenoid saponin from Gleditsia extract induces senolysis in aging and chemotherapy-induced senescence. Original research (Nature aging, under revision)

Bressan Silvia 1-5 *, Sharifi Saman1,2,3 *, Rinaldi Anna 6,7, Troiani Martina4,5,8, Zumerle Sara1,2, Colucci Manuel4, Calì Bianca4,5, Scanu Anna9, Giraudo Chiara10, Luisetto Roberto11, Contu Liliana1,2, Mosole Simone4,5, Torcasio Cristina6,7, Attanasio Giuseppe4,5, Sabbadin Marianna12, Pasquini Emiliano4,5, Djalalvandi Andre E.13, Pagliarin Francesca3, Pernigoni Nicolò4,5, Maraccani Luisa4,5, Valdata Aurora4,14, Kohl Anna 4, Lai Ping4, Bigogno Chiara15, Saponaro Miriam1,2,16, Othman Alaa17 Boldrin Francesco18, Caicci Federico18, Peron Gregorio3,19, Giacomini Isabella1,3, Goshovska Yulia20,21, Lazzarini Edoardo20,21, Trevisan Elena22, Schiavon Sara23, Giacomello Marta13, Giori Andrea M.24, Barile Lucio20,21, Dall'Acqua Stefano3, Bernardi Paolo25, Scorrano Luca1,13, Auwerx Johan27, Turcatti Gerardo28, Fassan Matteo26, Montopoli Monica1,3, Cippà Pietro57 and Alimonti Andrea1,2,4,5,29,30.

- Prostate cancer: evading immunity, inspiring therapy. Review (Trends in Cancer, 2026)

Bianca Calì*, Daniela Brina*, Viola Moscarda, Anna Kohl, Federica Cetti, **Silvia Bressan**, Andrea Alimonti

-Senescence in cancer. Review (Cancer Cell,2025)

Manuel Colucci, Miles Sarill, Martino Maddalena, Aurora Valdata, Martina Troiani, Martina Massarotti, Marco Bolis, **Silvia Bressan**, Anna Kohl, Daniele Robesti, Miriam Saponaro, Qiu Shi, Pan Song, Daniela Brina, Bianca Calì , and Andrea Alimonti

-Retinoic acid receptor activation reprograms senescence response and enhances anti-tumor activity of natural killer cells. Original research (Cancer Cell, 2024)

Silvia Bressan* , Manuel Colucci*; Sara Zumerle*; Federico Gianfanti*; Martina Troiani; Aurora Valdata; Mariantonietta D'Ambrosio; Emiliano Pasquini; Angelica Varesi; Francesca Cogo; Simone Mosole; Maria Andrea Desbats; Liliana Contu; Ajinkya Revandkar; Jingjing Chen; Madhuri Kalathur; Maria Luna Perciato; Lazko Enre; Miriam Saponaro; Nicolò Bancaro; Ping Lai; Lei Liu; Nicolò Pernigoni; Sara Merler; Greta Guarda; Monica Montopoli; Bianca Cali; Andrea Alimonti

-Coagulation factor X promotes resistance to androgen-deprivation therapy in prostate cancer.

Original research (Cancer Cell, 2024)

Bianca Cali^{1,2}, Martina Troiani^{1,2}, **Silvia Bressan**^{1,2,5}, Giuseppe Attanasio¹, Elena Ricci^{2,3}, Christina Guo⁴, Nicolò Bancaro^{1,2}, Nicolò Pernigoni^{1,2}, Simone Mosole¹, Mariantonietta D'Ambrosio¹, Daniela Brina^{1,2}, Sara Zumerle^{6,7}, Sara Merler^{6,8}, Pasquale Rescigno⁹, Edoardo Francini^{1,10,11}, Calogero Saieva¹², Emiliano Pasquini¹, Andrea Rinaldi^{1,2}, Fabrizio Dal Moro¹³, Marianna Sabbadin^{6,14}, Francesca Galuppini¹⁴, Matteo Fassan¹⁴, Jan Hendrik Rüschhoff¹⁵, Holger Moch¹⁵, Silke Gillesen^{2,11}, Claudine Graf¹⁶, Wolfram Ruf¹⁶, Johann De Bono⁴, Andrea Alimonti^{1,2,7,10,17}

-Targeting senescence induced by age or chemotherapy with a polyphenol-rich natural extract improves longevity and healthspan in mice. Original research (Nature Aging, 2024)

Sara Zumerle^{1,2*}, Miles Sarill^{1,3*}, Miriam Saponaro^{1,2,4}, Manuel Colucci^{5,6,7}, Liliana Contu^{1,2}, Edoardo Lazzarini^{8,9}, Roberta Sartori^{1,10}, Camilla Pezzini^{1,10}, Anna Rinaldi^{11,12}, Anna Scanu¹³, Jacopo Sgrignani¹⁴, Patrizia Locatelli¹⁴, Marianna Sabbadin^{1,2,15}, Aurora Valdata^{5,6,16}, Daniela Brina^{5,6,}, Isabella Giacomini^{1,3}, Beatrice Rizzo^{1,3,15}, Alessandra Pierantoni^{1,3,17}, Saman Sharifi^{1,2,3}, **Silvia Bressan**^{1,3,5,6}, Claudia Altomare^{8,9}, Yulia Goshovska^{8,9}, Chiara Giraud², Roberto Luisetto¹⁸, Luca Iaccarino², Cristina Torcasio^{11,12}, Simone Mosole^{5,6}, Emiliano Pasquini^{5,6}, Andrea Rinaldi^{5,6}, Laura Pellegrini^{5,6}, Gregorio Peron^{3,19}, Matteo Fassan^{2,15}, Stefano Masiero¹³, Andrea Maria Giori²⁰, Stefano Dall'Acqua³, Johan Auwerx²¹, Pietro Cippà^{6,11,12}, Andrea Cavalli^{6,14}, Marco Bolis^{5,6}, Marco Sandri^{1,10}, Lucio Barile^{8,9}, Monica Montopoli^{1,3#}, Andrea Alimonti^{1,2,5,6,16,22#}.

-The mixed effect of Endocrine-Disrupting chemicals on biological age acceleration:

Unveiling the mechanism and potential intervention target. Original research (Environ International, 2024)

Weichao Huang, Zilong Zhang, Manuel Colucci, Linghui Deng, Mi Yang, Xinyi Huang, Xianghong Zhou, Yumin Jin, Edoardo Lazzarini, Carolina Balbi, Juanola Juarez Oriol, Aurora Valdata, **Silvia Bressan**, Yu Zhan, Fang Qi, Qiang Wei, Lu Yang, Xiaoli Zou, Shi Qiu

-B7-H3 as a therapeutic target in advanced prostate cancer. Original research (European Urology, 2022)

Christina Guo *, Ines Figueiredo *, Bora Gurel *, Antje Neeb, George Seed, Mateus Crespo, Suzanne Carreira , Jan Rekowski, Jon Welti , Lorenzo Buroni , Denisa Bogdan, Lewis Gallagher, Adam Sharp, Maria D. Fenor de la Maza , Pasquale Rescigno, Daniel Westaby, Khobe Chandran, Ruth Riisnaes , Ana Ferreira, Susana Miranda, Bianca Cali, Andrea Alimonti, **Silvia Bressan**, Alana H. T. Nguyen, Michael M. Shen, Jessica E. Hawley, Aleksandar Obradovic, Charles G. Drake, Johann S. de Bono.

-Characterization of raloxifene as potential pharmacological agent against SARS-CoV-2 and its variants. Original research (Cell Death Dis, 2022)

D. Iaconis, L. Bordi, G. Matusali, C. Talarico, C. Manelfi, M. Cesta, M. Zippoli, F. Caccuri, A. Bugatti, A. Zani, F. Filippini, L. Scorzolini, M. Gobbi, M. Beeg, A. Piotti, M. Montopoli, V. Cocetta, **S. Bressan**, E. Bucci, A. Caruso, E. Nicastrì, M. Allegretti, and A. Beccari

-The multiple effects of Vitamin D against chronic disease: updated evidence from clinical studies.

Review article (Antioxidant, 2022)

Berretta M., Quagliarello V., Facchini S., Sharifi S., Scaroni Q., Maurea N., Di Francia R., Facchini G., Ruggiero A., **Bressan S.**, Richter S., Camozzi V., Scaroni C., Montopoli M.

-Chemotherapy-Induced hepatotoxicity in HIV Patients. Review article (Cells, 2021)

Bressan S., Pierantoni A., Sharifi S., Facchini S., Quagliarello V., Berretta M., Montopoli M., Chemotherapy- Induced Hepatotoxicity in HIV Patients, Cells 2021, 10, 2871

FELLOWSHIPS AND GRANTS

2025-10-01 to 2027-09-30 | Grant , European Commission (Brussels, BE), **MSCA postdoctoral fellowship**

URL: <https://app.dimensions.ai/details/grant/grant.14932834>

GRANT_NUMBER: 101209205

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PRESENTATIONS AND LECTURES

- Université PSL, Module 3: « Immunité, Cancer et Ethique » du DIU de Médecine Moléculaire en Cancérologie 2025-2026. Topic: "Effector and regulatory T lymphocytes"
- CICON 2023 7th International Cancer Immunotherapy Conference – Milan, Italy Exploiting the efficacy of a novel combinatorial CAR-T cell-based senolytic approach in prostate cancer Poster presentation - 40° Congresso Nazionale SIF – Identification of novel therapeutic approaches to selectively target senescent cells in prostate cancer Poster presentation

MENTORING AND SUPERVISION

1. Viola Moscarda, Visiting clinical research fellow from University of Verona (Italy), (from September 2023 - ongoing): Assessing the efficacy of immunomodulatory compounds in mouse models of prostate cancer.
2. Bartosz Sobocki, Visiting Master Student from Medical University of Gdańsk (Poland), (May 2022 – Sep 2022): Investigating the crosstalk between cancer and immune cells in the prostate tumor microenvironment.
3. Iseli Cedric, Master student from D-HEST (ETH, Zurich), (Jul 2021 - Jan2022): Generation and characterization of novel murine prostate cancer cell lines with enhanced metastatic potential through modified TIMP1 and CDCP1 Expression Levels.

ADDITIONAL SKILLS

- LTK Module 1 – Introductory course in laboratory animal sciences for persons conducting experiments (mice and rats)
- Founder of the PhD student association at Bios+ Institute – Social event and communication
- Special Prize Indaco – startup competition
- Languages: Italian (mother tongue), English (fluent), French (A2).
- Sports (gym, skiing, swimming) and creating art makes me feel good.

REFERENCES

Andrea Alimonti, Professor of Experimental Oncology at the Department of Health Sciences and Technology at ETHZ, andrea.alimonti@ior.usi.ch, +41 58 666 7115

Denis Migliorini, Assistant Professor at the Department of Oncology at University of Geneva, denis.migliorini@unige.ch, +41 79 55 32 402