



BIOGRAPHICAL SKETCH

NAME: Alessandro Salvi

POSITION TITLE: Associate Professor of Cellular and Applied Biology, BIOS/10-A

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	Completion Date	FIELD OF STUDY
University of Milan, Italy	Master's degree	12/1998	Biology
University of Brescia, Italy	Postgraduate specialization diploma	12/2004	Medical Genetics

A. Personal Statement

I am an Associate Professor of Cell and Applied Biology (SSD BIOS-10/A) at the Department of Molecular and Translational Medicine (DMMT), University of Brescia. I was awarded the National Scientific Qualification for Full Professor of Cell and Applied Biology (SSD BIOS-10/A) in February 2023. My teaching activity include Molecular Genetics, General Genetics, Applied Biology, and related courses for Medicine, Radiology, Physiotherapy, Pharmacy, and Medical Biotechnologies.

The main Research Areas include: **Epigenetics**, DNA methylation as a regulator of gene expression. The role of non-coding RNAs (microRNAs, lncRNAs) in cancer biology. **Biomarkers in Solid Tumors**, validation of specific microRNAs (e.g., miR-23b-3p, miR-193a-3p, miR-126-3p...) as diagnostic and prognostic markers in hepatocellular carcinoma (HCC). Study of circulating ncRNAs (miRNAs, lncRNAs) in liquid biopsies (plasma, EVs) as non-invasive molecular indicators of early diagnosis and prognosis. **Drug Response and Innovative Therapies**, discover novel molecular effects of anti-cancer drug sorafenib on HCC, particularly its impact on DNA methylation landscapes and modulation of ncRNAs. Role of miRNAs in sensitizing HCC cells to sorafenib and modulating aggressive tumor traits. **Molecular Techniques and Advanced Diagnostics**, development of digital PCR assays to detect methylation levels of tumor suppressor genes (e.g., SEPT9, SHOX2) in circulation, applied to cancer recurrence monitoring. Investigation of extracellular vesicles loaded with tumor-suppressor ncRNAs as therapeutic tools, including *in vivo* administration in zebrafish models.



B. Positions, Scientific Appointments, and Honors

Positions and Scientific Appointments

2023	National Scientific Qualification for Full Professor of Cell and Applied Biology (SSD BIOS-10/A).
2020– Present	Associate Professor of Cell and Applied Biology (SSD BIOS-10/A), Department of Molecular and Translational Medicine, University of Brescia.
2010 – 2020	Assistant Professor in of Cell and Applied Biology (SSD BIOS-10/A), Department of Molecular and Translational Medicine, University of Brescia.
2004-2010	post-Doc Department of Molecular and Translational Medicine, University of Brescia.

Member of the Italian Association of General and Molecular Biology and Genetics (AIBG)

Member of the European Association for Cancer Research (EACR)

Member of the Italian Cancer Society (SIC)

Member of the Italian Association of Cell Biology and Differentiation (ABCD)

Member of the Italian Society of Human Genetics (SIGU)

Member of the Italian Society of Biophysics and Molecular Biology (SIBBM)

- Participation as a speaker at numerous scientific conferences in Italy or abroad.

- Supervisor and co-supervisor of experimental theses for Bachelor's, Master's, and PhD students

- **Member of the Board of PhD Course: Precision Medicine (2018-2024), Molecular Genetics, Biotechnologies and Experimental medicine (2024-present).**

- **Scientific Supervisor for University Co-funded Research Fellows**

- **Member of the Editorial Board of the International Journals:**

"Experimental and Therapeutic Medicine" https://www.spandidos-publications.com/pages/etm/aims_scope; **"ExRNA"** <https://exrna.amegroups.org/>

Main Fundings/grants (last 3 years on the topic):

LILT BS (Lega Italiana Lotta ai Tumori di Brescia); 2023 *“Ruolo di RNA non codificanti oncosoppressori (ncRNA) inclusi in vescicole extracellulari nel modello sperimentale animale zebrafish per l'individuazione di strategie molecolari terapeutiche innovative nel carcinoma mammario”* (PI).

LILT BS; 2024 *“Studio del trascrittoma non-codificante in vescicole extracellulari per l'individuazione di biomarcatori innovativi di diagnosi precoce e progressione tumorale nel carcinoma mammari”* (PI).

PRIN, 2022 *“Characterization of extracellular vesicle biogenesis and content in Hepatocellular Carcinoma: circulating biomarkers of tumorigenesis and progression”* (coordinator of RU, UniBS)

C. Contributions to Science

Prof. Alessandro Salvi in the recent last years has contributed to translational cancer research, with a particular focus on liver and breast cancers. His work integrates epigenetics, non-coding RNAs, and molecular diagnostics to identify novel biomarkers and therapeutic targets. Salvi published studies on circulating miRNAs and extracellular vesicles, demonstrating their diagnostic and prognostic potential in hepatocellular carcinoma, pancreatic cancer, and glioblastoma. He has explored the epigenetic effects of drugs, such as sorafenib, on tumor DNA methylation patterns and investigated how specific miRNAs sensitize cancer cells to therapy. His group has developed droplet digital PCR assays for detecting methylation of tumor suppressor genes (SEPT9, SHOX2) in circulating DNA, enabling non-invasive monitoring of cancer progression. Additionally, he has studied the functional roles of long non-coding RNAs, including GAS5, in tumor suppression and therapy response. Salvi has also utilized *in vivo* zebrafish models to validate extracellular vesicle-based delivery of therapeutic ncRNAs. Across multiple solid tumors, his research emphasizes the integration of molecular biology with clinical applications, advancing precision oncology. He has co-authored numerous high-impact publications, contributing both as first and senior author, highlighting his leadership in designing and executing complex experimental and translational studies. His work bridges basic molecular insights and clinical relevance, establishing robust protocols for sample collection, analysis, and interpretation in cancer research.

Recent selected publications:

Determination of longitudinal Circulating levels of miR-21-5p, miR-23b-3p and miR-34a-5p in plasma of patients with glioblastoma using droplet digital PCR.

Donofrio CA, Fioravanti A, Riccio L, Cominetti M, Cappelletti MR, Longo G, Varotti E, Generali D, Servadei F, Grossi I, Pelisenco IA, **Salvi A**, De Petro G. *Neurosurg Rev.* 2025 Aug 7;48(1):592. doi: 10.1007/s10143-025-03747-z. PMID: 40772980

miR-23b-3p, miR-126-3p and GAS5 delivered by extracellular vesicles inhibit breast cancer xenografts in zebrafish.

Pelisenco IA, Zizioli D, Guerra F, Grossi I, Bucci C, Mignani L, Girolimetti G, Di Corato R, D'Agostino VG, Marchina E, De Petro G, **Salvi A**. *Cell Commun Signal*. 2024 Nov 18;22(1):552. doi: 10.1186/s12964-024-01936-9. PMID: 39558342

Plasma NfL, GFAP, amyloid, and p-tau species as Prognostic biomarkers in Parkinson's disease. Pilotto A, Ashton NJ, Lupini A, Battaglio B, Zatti C, Trasciatti C, Gipponi S, Cottini E, Grossi I, **Salvi A**, de Petro G, Pizzi M, Canale A, Blennow K, Zetterberg H, Padovani A. *J Neurol*. 2024 Dec;271(12):7537-7546. doi: 10.1007/s00415-024-12669-7. Epub 2024 Sep 9. PMID: 39249107

Dysregulation of a Subset of Circulating and Vesicle-Associated miRNA in Pancreatic Cancer. Girolimetti G, Pelisenco IA, Eusebi LH, Ricci C, Cavina B, Kurelac I, Verri T, Calcagnile M, Alifano P, **Salvi A**, Bucci C, Guerra F. *Noncoding RNA*. 2024 May 1;10(3):29. doi: 10.3390/ncrna10030029. PMID: 38804361

Evaluation of DNA methylation levels of SEPT9 and SHOX2 in plasma of patients with head and neck squamous cell carcinoma using droplet digital PCR. Grossi I, Assoni C, Lorini L, Smussi D, Gurizzan C, Grisanti S, Paderno A, Mattavelli D, Piazza C, Pelisenco IA, De Petro G, **Salvi A**, Bossi P. *Oncol Rep*. 2024 Mar;51(3):52. doi: 10.3892/or.2024.8711. Epub 2024 Feb 1. PMID: 38299234

The Biological Role and Translational Implications of the Long Non-Coding RNA GAS5 in Breast Cancer. Grossi I, Marchina E, De Petro G, **Salvi A**. *Cancers (Basel)*. 2023 Jun 23;15(13):3318. doi: 10.3390/cancers15133318. PMID: 37444428

Longitudinal Circulating Levels of miR-23b-3p, miR-126-3p and lncRNA GAS5 in HCC Patients Treated with Sorafenib. Manganelli M, Grossi I, Ferracin M, Guerriero P, Negrini M, Ghidini M, Senti C, Ratti M, Pizzo C, Passalacqua R, Molfino S, Baiocchi G, Portolani N, Marchina E, De Petro G, **Salvi A**. *Biomedicines*. 2021 Jul 13;9(7). doi: 10.3390/biomedicines9070813. PMID: 34356875

Expression of Cellular and Extracellular TERRA, TERC and TERT in Hepatocellular Carcinoma. Manganelli M, Grossi I, Corsi J, D'Agostino VG, Jurikova K, Cusanelli E, Molfino S, Portolani N, **Salvi A**, De Petro G. *Int J Mol Sci*. 2022 May 31;23(11). doi: 10.3390/ijms23116183. PubMed PMID: 35682861

COMPLETE LIST OF PUBLISHED WORK IN MYBIBLIOGRAPHY:

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