Silvia Garavaglia

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Total international papers: 34
h-index (Scopus): 24
Citations (Scopus): 1368
https://www.scopus.com/authid/detail.uri?authorId=6603622118
https://www.webofscience.com/wos/author/record/1190213
https://scholar.google.com/citations?hl=it&tzom=-60&user=Zyl-aRkAAAAJ

Total Structure in RCSB Protein Data Bank: 25

Patent: ***"PROBE DIRECTED TO ENZYME ALDH1A3 AND USE THEREOF IN THE DIAGNOSIS OF GLIOBLASTOMA"***;
number: **PCT/IB2022/053216;**
geographical region: **International Application (PCT)**;
applicants: **University of Piemonte Orientale 90%; University of Pavia 10%**;
Inventors:
PI: **Prof. Silvia Garavaglia**
Others: **Prof. Alberto Minassi, Prof. Menico Rizzi, Dott. Edoardo L. M. Gelardi, Dott. Diego Caprioglio, Dott. Giorgia Colombo, Prof. Lorenzo Magrassi**.

Patent: ***"Alde1a3down, library di molecole ad azione inibitoria e funzionalizzate con un chelante generico con Gadolinio e con Boro in grado di legarsi selettivamente all'enzima ALDH1A3 altamente espresso nelle cellule cancerose staminali dei tumori"***
APPROVED BY PATENT COMMISSION/under Submission
applicants: **University of Piemonte Orientale 90%; University of Pavia 10%**;
Inventors:
PI: **Prof. Silvia Garavaglia**
Others: **Prof. Alberto Minassi, Prof. Luigi Panza, Dott. Diego Caprioglio, Dott. Daniela Imperio, Prof. Lorenzo Magrassi**.

Education:

- June 2023 National Scientific Qualifications for Full professor in area 05/BIOS-07 BIOCHEMISTRY ssd BIOS-07/A -BIOCHEMISTRY.
- 2020 to date Associate Professor in the field BIOS-07/A -BIOCHEMISTRY.
- March 2017 National Scientific Qualifications for Associate professor in area 05/BIOS-07 BIOCHEMISTRY ssd BIOS-07/A -BIOCHEMISTRY.
- December 2013 Confirmed Assistant Professor in the field BIOS-07/A -BIOCHEMISTRY
- To December 2010 from 2020 Assistant Professor in the field BIOS-07/A -BIOCHEMISTRY
- June 2010 Participation in "42nd course in International School of Crystallography: STRUCTURE AND FUNCTION FROM Macromolecular Crystallography: ORGANIZATION IN SPACE AND TIME" Ettore Majorana Foundation and Centre for Scientific Culture, Erice
- February 2009 Appointed Teaching Assistant for Biochemistry BIOS-07/A at the Faculty of Pharmacy of the University of Piemonte Orientale
- September 2008 Participation in the "9th International School on Crystallography of Biological Macromolecules", Villa Erba, Como
- January 2003 PhD in Genetics and Biochemistry, University of Pavia. Laboratory of Biocrystallography the Department of Genetics and Microbiology, University of Pavia
- November 2001 Passing the state exam to practice the profession of biologist and registration with the National Association of Biologists
- May 2001 Participation in the "6th International School on Crystallography of Biological Macromolecules", Villa Erba, Como
- October 1999 Graduation in Biological Sciences, "summa cum laude", University of Pavia.
- September 1994 to October 1999 Alumna at "Collegio Nuovo" Sandra ENEI MATTEI foundation, University of Pavia

- July 1994 Award of Diploma in Chemical Biology at the "Istituto Tecnico Commerciale" Castano Primo (MI) Italy Rating: 60/60
- June 1993 Activities of professional training as a lab technician for clinical biochemistry at the Blood Transfusion Centre of the Hospital "G. Fornaroli"

Research Activities:

- **To 2016 to date** the common theme of Prof.sa Silvia Garavaglia researches, is the analysis of relationship between the enzymes structure and function. Structural biology is the heart of the research and it is integrated with an in-depth analysis of biochemistry and enzyme kinetics. These researches are also intended to develop assays suitable for procedures of "high-throughput screenings " *in vitro*, and to the identification of enzyme inhibitors through *in-silico* methods and in particular of rational design driven by the structural data. The main line of research active concerns the structural and biochemical studies of an enzyme which uses NAD^+. The aldehyde dehydrogenase 1A3 is a retinaldehyde with a detoxifying action, that recent studies have seen to be over-expressed in neuroblastoma CSCs. The goal of this project is to synthesis of compounds that are able to bind the isoenzyme, designed on the basis of crystallographic structure. The selected molecules must be specific for the target and fluorescent. The molecules that fit this description will be tested for effectiveness and sensitivity in tracing GBM cancers stem cells and in other various types of tumor samples. Another research activity focuses on the bioremediation and detoxification of toxic environmental aldehydes, a class of highly reactive compounds generated by industrial processes, combustion products, air pollution, and environmental degradation pathways. These aldehydes can accumulate in living organisms and ecosystems, causing oxidative stress and cellular damage. The project investigates enzymatic strategies for the removal and biotransformation of toxic aldehydes through the characterization of aldehyde-metabolizing enzymes, combining structural biology, enzymology, and biochemical approaches. Particular attention is devoted to understanding the molecular determinants governing substrate recognition, catalytic efficiency, and enzyme stability, with the aim of developing sustainable and biologically based solutions for the detoxification of environmental contaminants. The research also explores the use of chemically modified and free aldehyde substrates to evaluate enzymatic performance under different environmental and physiological conditions.
- **2010 to 2019** Research as a researcher (BIOS-07/A) in the biochemistry laboratory of the Department of Scienze del Farmaco, UPO. I worked on the analysis of the relationship between structure and function of enzymes involved in the homeostasis of NAD(P) in different organisms. Many of projects are focused on the study of this important biosynthetic pathway in humans, particularly in pathological processes such as cancer & neurodegeneration and in pathogenic organisms such as *Heamophilus influenzae*, *Mycobacterium tuberculosis* and host-pathogen interaction in malaria
- **2007-2010** Research was given a scholarship as part of the international project "TB-DRUG" funded in the Sixth Framework Programme of the European Community. Research Project: "Study of biochemical and crystallographic molecular targets in *Mycobacterium tuberculosis*." Scientific supervision of Prof. Menico Rizzi
- **2006** Research as visiting-scientist/Post-Doc at the Department of Molecular Biology, University of Bergen, Norway. Research Project: "Cloning, expression and purification of human nicotinamide riboside kinases." The activity was held at the Unit "Molecular Bioenergetics and Signalling" under the responsibility of Prof. Mathias Ziegler.
- **2005-2007** Research as a Fellow of the University of University of Piemonte Orientale. Research project: "Development of new molecular targets for the development of antibacterial agents against drug-resistant pathogens." Scientific supervision of Prof. Menico Rizzi
- **2004-2005** Research as a Fellow of the University of Piemonte Orientale. Research Project: "Studies of structure-function relationships in targets innovative *Leishamnia infantum*" Scientific supervision of Prof. Menico Rizzi
- **2002-2004** Research as a Fellow of the University of Piemonte Orientale. Research Project: "Structural studies of enzymes involved in the biosynthesis of NAD (P)" Scientific supervision of Prof. Menico Rizzi
- **1999-2002** Research activities aimed at achieving the PhD in "Genetic and Biomolecular Sciences." Research topic: "Studies biochemical and structural properties of enzymes involved in the biosynthesis of NAD (P)". The activity was carried out at the Department of Genetics and Microbiology, University of Pavia, under the scientific responsibility of Prof. Alessandro Coda
- **1999** Research fellow, Istituto Mario Negri, Milano, Italy
- **1997-1999** Research activities involving the preparation of thesis of Biological Sciences. Research topic: "The state of phosphorylation of human DNA ligase I during the progression of the cell cycle is related to the sub-cellular localization of the protein and the interaction with the proliferating cell nuclear

antigen PCNA". This activity was carried out at the Institute of Molecular Genetics of the National Research Council of Italy, under the guidance of Dr. Alessandra Montecucco

Prizes and awards

- April 2026: selected as a 2026 Schaefer Research Scholar. Bestowed by Columbia University's Vagelos College of Physicians and Surgeons, Columbia University Irving Medical Center, New York, USA. This highly competitive international honor is awarded in support of outstanding and innovative research in human physiology.

Visiting academic positions

- 2006: Research as visiting-scientist/Post-Doc at the Department of Molecular Biology, University of Bergen, Norway. Research Project: "Cloning, expression and purification of human nicotinamide riboside kinases." The activity was held at the Unit "Molecular Bioenergetics and Signalling" under the responsibility of Prof. Mathias Ziegler.

Involvement of national and international funded research projects:

- From July 2024: Telethon Spring Seed Grant 2024: -GSA24G006- *"Cell therapy of the GLUT1-DS using directed GLUT1 engineered endothelial cell progenitors"* **(Euro70,000)** 18 mesi. Position held: **External Head of Biochemistry Unit**
- From July 2024: Telethon Spring Seed Grant 2024: -GSA24G005- *"Investigation of intertwined relationships between healthy and mutated GLUT1 using FDA approved compounds to identify a therapeutic approach"* **(Euro70,000)** 18 mesi. Position held**: External Head of Biochemistry Unit**
- From September 2024: IV cut-off – PoC Instrument Linea 1 – PoC Launchpad-"Sonda diretta all'enzima ALDH1A3 per il rilevamento precoce di cellule cancerose staminali nelle biopsie dei pazienti per un intervento terapeutico e/o chirurgico tempestivo e di precisione" **(Euro 50.000)** 6 months. Position held: **Principal investigator**
- From November 2023: PRIN 2022 PNRR - Projects of Significant National Interest-"Environmental bioremediation from toxic aldehydes using a versatile aldehyde dehydrogenase with broad substrate specificity" **(Euro 98.000)** 24 months. Position held: **Principal investigator**
- From September 2023: RESEARCH PROJECTS OF RELEVANT NATIONAL INTEREST - Call 2022 N "Fluorescent and Gadolinum- based probes for the Targeted Surgery and Neutro Capture Therapy of Glioblastoma" **(Euro 66,000)** 24 months. Position held: **Head of Biochemistry Unit.**
- From May 2023: Project funded by PNRR Call: M6/C2_CALL 2022 (Project Code: PNRR-POC-2022-12376588) Research program title: "Developing proprietary fluorescent probes targeting high grade gliomas into useful tools for onco-surgery and theranostic." **(Euro 170.000)** months 24. Position held: **Head of Biochemistry Unit.**
- February 2020 Bando Ricerca Locale 2019 (DSF-UPO) Title: "Valutazione preclinica degli enzimi della sottofamiglia 1A delle aldeidi deidrogenasi come potenziali bersagli terapeutici nel mesotelioma" **(Euro 33.000)** Months 24. Position held: **Project co-responsible**
- 2018 "Roche per la Ricerca 2017" Title: "Analisi ed ottimizzazione di molecole in grado di legare selettivamente l'enzima ALDH1A3, marker tumorale di cellule di glioma, utili per lo sviluppo di farmaci e di sonde fluorescenti glioma-specifiche" **(Euro 100.000)** Months 18. Position held: **Project co-responsible**
- To 2016 from 2018 Bando Ricerca Locale 2015 (DSF-UPO). Title: "Sintesi e validazione di una sonda fluorescente per identificare precocemente in vivo la presenza di cellule cancerose staminali dei neuroblastomi nel circolo sanguigno" **(Euro 50.000)** Months 24. Position held: **Principal Investigator**
- To 01-02-2011 from 31-07-2016 VII° Framework Program of the European Community. Title: "More medicines for tuberculosis" (Contract Number: MM4TB_260872). Months 66. Position held: **Co-head of Biochemistry unit**
- To 22-09-2008 from 21-08-2010 Ministero dell'Istruzione dell'Università e della Ricerca - Programma di Ricerca Scientifica di Rilevante Interesse Nazionale (PRIN 2007). Title: "Enzimologia strutturale di proteine coinvolte nella biosintesi del NAD" Months 24. Position held: **Co-head of Biochemistry unit**
- To 01-03-2007 from 28-02-2010 VI° Framework Program of the European Community. Title: "The role of chromosome stability in persistance, latency and reactivation of Mycobacterium tuberculosis" (Contract Number: CSI-LTB - LSHP-CT-2007-037235). Months 36. Position held: **Co-head of Biochemistry unit**
- To 01-12-2006 from 31-01-2010 VI° Framework Program of the European Community. Title: "A SME-STREP for tuberculosis drug development" (Contract Number: SME-TB- DRUG" LSHP-CT-2006-037237). Months 54. Position held: **Co-head of Biochemistry unit**
- To 02-12-2005 from 01-12-2008 Ministero dell'Istruzione dell'Università e della Ricerca; INTERLINK program with University of Maryland USA prof. Schwarcz. Title: "Il metabolismo delle chinurenine nel

cervello umano: un bersaglio promettente per il trattamento di disordini neurologici e psichiatrici" Months 36. Position held: **Co-head of Biochemistry unit**

Teaching

- Since October 2022 to date Teacher of course "Biochemistry" equal to 5 CFU during Degree in Green Chemistry, UPO, Italy
- Since October 2020 to date Teacher of course "Biochemistry" equal to 7 CFU during Degree in Pharmacy, UPO, Italy
- Since October 2014 to date Teacher of course "Clinical Biochemistry" equal to 5 CFU during Degree in Pharmacy, UPO, Italy
- Since October 2014 to date Teacher of course "Structural Biology" equal to 5 CFU during Degree in Pharmacy and chemistry and pharmaceutical technology (CTF), UPO, Italy
- Since October 2015 to date Teacher of course "Biochemistry of Nutrition" equal to 1 CFU in the graduate school in Hospital Pharmacy, UPO, Italy
- Since October 2013 to September 2022 Teacher of course "Chemical-Clinical Analysis" equal to 2 CFU in the graduate school in Hospital Pharmacy, University of Piemonte Orientale, Italy Since October 2011 to date Teacher of course "Structural Biology" equal to 5 CFU (40 teaching hours) during Degree in Pharmacy and Chemistry & Pharmaceutical Technology, Faculty of Pharmacy, UPO, Italy
- February 2009 Appointed expert on the subject for the SSD Biochemistry (BIO10) at the Faculty of Pharmacy of the University of the UPO, Italy
- 2007/2008 Seminar activity in the Master's Degree in "Regulatory Disciplines within the Pharmaceutical-Biotechnology" of the Faculty of Pharmacy of University of Piemonte Orientale, Italy
- 2005/2006 Teacher of the Master's Degree in "Biotechnological applications in nanotechnology" of the Faculty of Pharmacy of the University of Piemonte Orientale, Italy.
- From 2008 to date I supervise the research activities of a post doc, undergraduates and graduate students enrolled in the PhD which are directly responsible and rapporteur.

Academic Activity

- Member of SCIENTIFIC COMMITTEE for *"TORCH: Theranostic Oncology Research – Collaboration Hub"*. *When Diagnosis meets therapy; lightening the future of oncology.* Pisa, 24 Aprile 2026
- Member of SCIENTIFIC COMMITTEE for *"-EVAMS- Emerging Voices in Cancer Research. A Multidisciplinary Symposium"*. Pisa, 25 Novembre 2025
- Member of Technical committee for *"5th Workshop SIB group Tumour Biochemistry -Is cancer an inaccessible fortress? Exploiting tumour Achille's heels to foster treatment opportunities"*. Torino dal 9 al 10 Giugno 2025
- Member of Scientific and Organizing Committee of the Department Pharmaceutical Sciences for retreat 'Speaking about science, DSF for future'. Novara, 3 December 2022
- Member of Teachers' Board of the PhD school in "DRUG INNOVATION" at the University of Piemonte Orientale. Cycle: XLI. Duration: 3 years per cycle.
- Member of Teachers' Board of the PhD school in "DRUG INNOVATION" at the University of Piemonte Orientale. Cycle: XL. Duration: 3 years per cycle.
- Member of Teachers' Board of the PhD school in "DRUG INNOVATION" at the University of Piemonte Orientale. Cycle: XXXIX. Duration: 3 years per cycle.
- Academic year 2023-2024: Hosted Visiting Professor Dr. Marco Mazzorana, PhD, MX beamline scientist at Diamond Light Source -Harwell Science Campus Didcot (UK)- to 1 week workshop for PhD students: "The eighth colours of the rainbow: what our eyes can't see"
- From 2024 to date: elected as a member of "Giunta di Dipartimento" of the Department of Pharmaceutical Sciences University of Piemonte Orientale
- 2024: Member of PhD committee for PhD in Molecular and Cellular Biology, Cycle XXXVI CYCLE at the University of Milano. Title "UNDERSTANDING THE PRO-SURVIVAL ROLE OF AIF: STRUCTURAL AND FUNCTIONAL STUDY OF AIF-CHCHD4 COMPLEX"
- Academic year 2022-2023: Hosted Visiting Professor Dr. Filippo Mancia, Co-Director of Graduate Education in the Department of Physiology & Cellular Biophysics at Columbia University New York to 1 week workshop for PhD student: "Cryo-Electron Microscopy in structural biology"
- From 2016 to date: member of the "Commisione Ricerca" of the Department of Pharmaceutical Sciences University of University of Piemonte Orientale
- December 2022 Member of Scientific and Organizing Committee of the Department Pharmaceutical Sciences for retreat 'Speaking about science, DSF for future'.
- Academic year 2017-2018: Hosted Visiting Professor Ferrari Giovanni, Associate Professor, Columbia University New York. 2 ECTS Course entitled: 'Valve and Vascular Diseases: From Cell Biology to

Clinical Practice'

- Member of Teachers' Board of the PhD school in "BIOTECNOLOGIE FARMACEUTICHE E ALIMENTARI" at the University of Piemonte Orientale. Cycles: XXVII, XXVIII. Duration: 3 years per cycle.
- Member of Teachers' Board of the PhD school in in "CHEMISTRY & BIOLOGY" at the University of Piemonte Orientale. Cycles: XXIX, XXX, XXXI e XXXII. Duration: 3 years per cycle.
- 2019: Substitute member of PhD committee for PhD degree in Genetica, Biologia Molecolare e Cellulare, XXXII cycle at the University of Pavia.
- 2018: External reviewer of a PhD thesis in the University School -IUSS- Pavia, University of Pavia, in Biomolecular Sciences and Biotechnology, XXX cycle. Title: "CHARACTERIZATION OF THE MOLECULAR FLEXIBILITY OF THEEXTRACELLULAR DOMAINS OF MUSCLE-SPECIFIC KINASE MUSK".
- 2018: Member of PhD committee for PhD degree in "Scienze Biomolecolari e Biotecnologie" XXX cycle at la Scuola Universitaria Superiore IUSS di Pavia.
- 2018: Substitute member of PhD committee for PhD degree in "Genetica, Biologia Molecolare e Cellulare", XXXI cycle at University of Pavia
- 2017: Member of evaluation committee of "Bando Ricerca Locale 2016" of Department of Pharmaceutical Sciences at University of Piemonte Orientale
- 2017 External reviewer of a PhD thesis in Genetica, Biologia Molecolare e Cellulare, XXX Cycle, University of Pavia. Title: "NEW ANTITUBERCULAR PRODRUG WITH NOVEL MECHANISMS OF ACTION"
- 2017: External reviewer of a PhD thesis in Genetica, Biologia Molecolare e Cellulare, XXX Cycle, of University of Pavia. Title: "APPLYING STRUCTURAL ENZYMOLOGY TO UNDERSTAND THE REACTIVITY OF DIFFERENT BIOCATALYSTS"
- 2017: Member of PhD committee for PhD degree in Genetica, Biologia Molecolare e Cellulare XXX cycle at University of Pavia.
- From 2016 to 2018 Co-tutor together with Prof. Raquel M. Silva, Department of Medical Sciences, iBiMED & IEETA, of a PhD candidate at the University of Aveiro, Portugal.
- From 2016 to date external reviewer of AISM research projects -Italian Multiple Sclerosis Association- 'FISM Call'.
- 2016: External reviewer of a PhD thesis in Scienze Agrarie, Alimentari ed Ambientali, cycle XVIII, of University Politecnica delle Marche. Title: "QUANTIFICAZIONE DELLA NICOTINAMIDE RIBOSIDE E DEI SUOI PRECURSORI NMN E NAD NEL LATTE MEDIANTE UN NUOVO SAGGIO ENZIMATICO FLUORIMETRICO"
- 2016: External reviewer of a PhD thesis in Bioscienze e Biotecnologie XXIX cycle, of Università degli Studi di Padova. Title: "STRUCTURAL CHARACTERIZATION OF THE HUMAN IMMUNE RESPONSE TO NHBA VACCINE ANTIGEN"
- Member of the Italian Society of BIOCHEMISTRY (SIB).
- Reviewer for the following scientific journals: Structure, Nature Scientific Reports, FEBS journal, Oncotarget and ChemBioChem, JMB, Frontiers, Communication Biology.

Oral Communication

- **Invited specker** at "TORCH" Conference Theranostic Oncology Research- Collaboration Hub. Plenary Session Theranostics in Glioblastoma Precision Medicine: The Dark and Bright Sides of the Moon. Title: *"Targeting ALDH1A3: Drug Discovery Strategies for Next-Generation Theranostics."* Pisa 2026
- **Invited specker** at "More than Neurons" Conference. The Neuroscience of Cancer. Title: "Using a rational approach for drugs and diagnostics tools development to selective targeting human aldehyde dehydrogenase 1A3 in gliomas." Bologna 2024
- **Oral communication** at 4th Workshop SIB group Tumour Biochemistry. Title: "Biochemical Dynamics in Tumour Microenvironment: new insights and implications" Catania 2024
- **Invited specker** at "AIC: 50th Congress" Title: "Using rational structural analysis for development drugs and diagnostics tools to selective targeting human ALDH1A3 in solid tumours" Bologna 2023
- **Invited specker** at "Proteine 2022: Interaction of proteins with small ligands and macromolecules" Title: "Targeting human aldehyde dehydrogenase 1A3 in gliomas: drugs and diagnostics development" Pisa 2022
- **Invited specker** at One-Day workshop -The druggable proteome cancer Molecular approaches to ameliorate the diagnostic, prognostic and therapeutic indexes in cancer- 26 Giugno 2018 Università Cattolica Sacro Cuore ROMA -SIB groups- Title: "Targetinng aldehyde dehydrogenasae 1A3 in gliomas: structural investigation" 2019

- **Invited specker** Istituto Genetica Molecolare CNR Pavia External seminars 29 Maggio 2018 INVITED SPEAKER **Silvia Garavaglia**. “Targetinng aldehyde dehydrogenasae 1A3 in gliomas: structural investigation”
- **Oral communication** at 9th International School on the Crystallography of Biological Macromolecules, COMO (2008). **Silvia Garavaglia** “Structural studies of human alpha-amino-beta-carboxymuconate-epsioln-semialdehyde decarboxylase, a key enzyme in quinolinic acid synthesis”.
- **Oral communication** at 42nd Course Structure and Function from Macromolecular Crystallography: Organization in space and time, ERICE (2010). **Silvia Garavaglia** “High-resolution crystal structure of periplasmic NAD 5’-nucleotidase: the key enzyme for evolutionary escape to intracellular NAD synthesis developed by Haemophilic influenzae”.
- **Oral communication** at 36th FEBS Congress, TORINO (2011) **SIlvia Garavaglia** “The high-resolution crystal structure of periplasmic Haemophilus influenzae NAD 5’-nucleotidase, lead to reveal a novel enzymatic function of Human CD73”.
- **Oral communication** at FASEB Summer research conference: NAD metabolism and Signalling, LUCCA (2011). **Silvia Garavaglia** “The high-resolution crystal structure of periplasmic Haemophilus influenzae NAD 5’-nucleotidase, lead to reveal a novel enzymatic function of Human CD73.”

Field of investigation and areas of interest:

- High-yield expression of recombinant proteins in heterologous systems
- Protein Purification
- Enzymology
- Protein-protein interactions
- Proteins Crystallization
- Analysis structure-functions protein relationship & Identification of enzyme inhibitors through *in-silico* methods
- Drug discovery

Editorial activity

- Since 2021 to date: Member of Review Editors for "Frontiers in Immunology" ISSN: 1664-3224 Impact Factor: 5.7v CiteScore: 9.4 Citations: 662863
- Since 2021to date: Member of Review Editors for "Frontiers in Oncology" ISSN: 2234943X Impact Factor: 3.5 CiteScore: 6 Citations: 237671
- Reviewer for the following scientific journals: Structure, Nature Scientific Reports, FEBS journal,vOncotarget and ChemBioChem, JMB, Frontiers, Communication Biology

Pubblication:

1. Bufalieri F, Cucinotta A, Cammarone S, Agnoli F, Basili I, Ferri G, Quaglio D, Caimano M, Capriotti AL, Montone CM, Lospinoso Severini L, Tempora P, D'Amico S, Juretich F, Semrau MS, Navacci S, Conenna M, Bordone R, Spallotta F, **Garavaglia S**, Storici P, Ghirga F, Laganà A, Locatelli F, Ayrault O, Infante P, Botta B, Mori M, Fruci D, Di Marcotullio L. Discovery of a new selective ERAP1 inhibitor for Hedgehog-dependent cancer treatment. Mol Ther. **(2026)** Jan 7;34(1):582-605. doi: 10.1016/j.ymthe.2025.10.036. Epub 2025 Oct 17. PMID: 41108078; PMCID: PMC12925812.
2. Siragusa S, **Garavaglia S***, Mazzorana M. Exploiting ALDH1A2 and ALDH1A3 isoform variability for crystallisation screening. Biochem Biophys Res Commun. **(2025)** Sep 16;780:152469. doi: 10.1016/j.bbrc.2025.152469. Epub **(2025)** Aug 14. PMID: 40829477.
3. Scianò F, Bernardoni BL, D'Agostino I, Ferrara G, Tafi A, Garavaglia S, La Motta C. Toxic aldehydes in cooking vegetable oils: Generation, toxicity and disposal methods. Food Chem X. **(2025)** Jul 5;29:102744. doi: 10.1016/j.fochx.2025.102744. PMID: 40698373; PMCID: PMC12281009.
4. Bernardoni BL, D'Agostino I, Siragusa S, Mori M, **Garavaglia S***, La Motta C. A scaffold repositioning approach: dihydroBenzoImidazoTriazineDione (BITD) derivatives as selective ALDH1A1 inhibitors. Mol Divers. (**2025)** Apr 4. doi: 10.1007/s11030-025-11179-6. Epub ahead of print. PMID: 40185985.
5. Lorenzo Magrassi, Giulia Pinton, Sabino Luzzi, Sergio Comincini, Andrea Scravaglieri, Valentina Gigliotti, Bianca Laura Bernardoni, Ilaria D’Agostino, Francesca Juretich, Concettina La Motta and **Silvia Garavaglia** *"A New Vista of Aldehyde Dehydrogenase 1A3 (ALDH1A3): New Specific Inhibitors and Activity-Based Probes Targeting ALDH1A3 Dependent Pathways in Glioblastoma, Mesothelioma and Other Cancers"* Cancers **(2024)** 16(13), 2397; ISSN: 2072-6694 https://doi.org/10.3390/cancers16132397
6. Wallach, I., Bernard, D., Nguyen, K., ...**Garavaglia, S**., Artía, Z., Heifets, A. *"AI is a viable alternative to high throughput screening: a 318-target study"* Scientific ReportsThis link is disabled. **(2024)** 14(1), 7526 PMCID: PMC10987645 DOI: 10.1038/s41598-024-54655
7. Sara Boumya, Silvia Fallarini, Sonia Siragusa, Giovanni Petrarolo, Silvio Aprile, Valentina Audrito, Concettina La Motta, Silvia Garavaglia*, Laura Moro, and Giulia Pinton* “*A Selective ALDH1A3 Inhibitor*

Impairs Mesothelioma 3-D Multicellular Spheroid Growth and Neutrophil Recruitment" Int. J. Mol. Sci. **(2023)** 24, 6689. https://doi.org/10.3390/ijms24076689

8. Edoardo L. M. Gelardi[a,1], Diego Caprioglio[a,1], Giorgia Colombo[a], Erika Del Grosso[a], Daniele Mazzoletti[a], Daiana Mattoteia[a], Stefano Salamone[a], Davide M. Ferraris[a,b], Eleonora Aronica[c,d], Giulia Nato[e,f], Annalisa Buffo[e,g], Menico Rizzi[a], Lorenzo Magrassi[h,i], Alberto Minassi[a,l *] & **Silvia Garavaglia**[a,*]. *"Curcumin-based-fluorescent probes targeting ALDH1A3 as a promising tool for glioblastoma precision surgery and early diagnosis"* COMMUNICATIONS BIOLOGY | (**2022**) 5(1), 895
9. Jianfeng LI, **Silvia Garavaglia**, Zhaofeng Ye, Andrea Moretti, Olga V Belyaev, Anna Wilk, Steve McClellan, Alla V Klyuyeva, Kelli R Brown, Natalia Y Kedishvili, Alan Salter, Andrzej Wierzbicki Marie Migaud, Steven J. Mullet, Nathan A. Yates, Carlos J. Camacho, Menico Rizzi and Robert W. Sobol *"Regulation of retinoic acid biosynthesis, cancer cell growth and stem cell maintenance by a novel and specific inhibitor of ALDH1A3"* COMMUNICATIONS BIOLOGY | (**2021**)4:1420 | https://doi.org/10.1038/s42003-021-02949-7
10. Edoardo L. M. Gelardi†, Giorgia Colombo†, Francesca Picarazzi, Davide M. Ferraris, Andrea Mangione, Giovanni Petrarolo, Eleonora Aronica, Menico Rizzi, Mattia Mori, Concettina La Motta and **Silvia Garavaglia*** "*A Selective Competitive Inhibitor of Aldehyde Dehydrogenase 1A3 Hinders Cancer Cell Growth, Invasiveness and Stemness In Vitro"* Cancers (**2021)**, 13, 356. https://doi.org/10.3390/cancers13020356
11. Luca Quattrini, Edoardo Luigi Maria Gelardi, Vito Coviello, Stefania Sartini, Davide Maria Ferraris, Mattia Mori, Ichiro Nakano, **Silvia Garavaglia*** & Concettina la Motta. (**2020**) *"Imidazo[1,2-a]pyridine Derivatives as Aldehyde Dehydrogenase Inhibitors: Novel Chemotypes to Target Glioblastoma Stem Cells"*. J Med Chem, 14;63(9):4603-4616.
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