
BIOGRAPHICAL SKETCH

NAME: Samuele Cazzamalli

POSITION TITLE: Head of Research (Philochem AG)

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE	Completion Date MM/YYYY	FIELD OF STUDY
University of Milan	Master of Science	09/2014	Chimica e Tecnologie Farmaceutiche
ETH Zürich	PhD	01/2018	Pharmaceutical Sciences

A. Personal Statement

Dr. Samuele Cazzamalli studied Medicinal Chemistry at Università degli Studi di Milano, where he graduated with a thesis on the development of novel techniques for the application of biocatalysts in flow chemistry under the supervision of Prof. Carlo De Micheli. Samuele performed his PhD at ETH Zurich in the group of Professor Dario Neri with a focus on non-internalizing antibody- and small molecule-drug conjugates for the treatment of cancer. Samuele currently heads research at Philochem. He is the recipient of the 2024 EFMC Prize for Young Medicinal Chemist in Industry, of the 2025 SCI Young Scientist Award (Med Chem Division), and of the 2026 Swiss Chemical Society Industrial Science Award.

The updated list of peer-reviewed publications by Dr. Cazzamalli can be found <https://scholar.google.com/citations?user=SjyqgywAAAAJ&hl=it&oi=ao>

Positions and Honors

Positions and Employment

<i>date1- date2</i>	<i>Position</i>
2015-2018	PhD student at ETH Zürich (group of Prof. Dr. Dario Neri)
2018-2021	Research Scientist at Philochem AG
2021-2025	Head of Chemistry at Philochem AG
2025-present	Head of Research at Philochem AG
2025-present	Member of the Board at Philochem AG
2025-present	Early Career Board Editor at <i>Journal of Medicinal Chemistry</i>

Honors

<i>date</i>	<i>honour</i>
2018	<i>Young Scientists Lecture 2018 Award ETH Zurich</i>
2024	<i>EFMC Prize for Young Medicinal Chemist or Chemical Biologist in Industry</i>
2025	<i>Premio Giovani Divisione Chimica Farmaceutica 2025 – SCI</i>
2026	<i>Swiss Chemical Society – Industrial Science Award</i>

Patents

<i>Application date</i>	<i>Application Number</i>
2021 - EP3891138B1	“Fibroblast activation protein ligands for targeted delivery applications”
2018 - EP3585421A1	“Immunocytokine combination therapy”
2022 - EP4043452A1	“Bivalent fibroblast activation protein ligands for targeted delivery applications”
2023 - WO2023057457A1	“Radiolabelled fibroblast activation protein ligands”
2023 - WO2023144379A1	“High-affinity ligands of FAP for targeted delivery applications”
2024 - WO2024028258A1	“Conjugates of psma-binding moieties with cytotoxic agents”
2024 - WO2024094827A1	“Carbonic anhydrase IX ligands for targeted delivery applications”
2025 - WO2025088200	“Acid Phosphatase 3 ligands for targeted delivery applications”

Reviewer Experience

Molecular Cancer Therapeutics

Journal of Medicinal Chemistry

Clinical Cancer Research

Journal of the American Chemical Society

Bioconjugate Chemistry

European Journal of Nuclear Medicine and Molecular Imaging

Nature Signal Transduction

B. Contributions to Science

Dr. Samuele Cazzamalli (b. 1990) is currently **Head of Research and board member at Philochem AG**, where he leads a team of 38 scientists (including senior scientists, research scientists, post-docs, PhD students, and research associates) working on the discovery and development of targeted therapeutics against cancer. His scientific trajectory reflects a combination of pioneering research contributions to the field of medicinal chemistry and oncology, industrial impact, and leadership in translational drug development.

His industrial achievements include:

- Discovery and optimization of **high-affinity ligands** against tumor-associated antigens, particularly **Fibroblast Activation Protein (FAP)**, **Prostate-Specific Membrane Antigen (PSMA)**, and **Carbonic Anhydrase IX (CAIX)**.
- Led the discovery of **OncoACP3**, an ultra-high affinity ligand of **Prostatic Acid Phosphatase 3 (ACP-3)**, using DNA-Encoded Chemical Libraries (DECLs), leading to its licensing to RayzeBio (a Bristol Myers Squibb company) in a deal valued at up to \$1.35 billion plus royalties.
- **Nuclear medicine applications:** Demonstrated efficient tumor targeting of radiolabeled FAP, CAIX, and ACP3

- ligands in preclinical and clinical studies.
- **Clinical translation:** Advanced **seven new pharmaceutical products** to clinical testing, including:
 - Radiolabeled products (¹⁷⁷Lu-OncoFAP-23, ⁶⁸Ga-OncoFAP, ¹⁷⁷Lu-OncoACP3, ⁶⁸Ga-OncoACP3, ⁶⁸Ga-OncoCAIX, and ^{99m}Tc-labeled-Acetazolamide)
 - Small Molecule-Drug Conjugates (*OncoFAP-Gly-Pro-MMAE*).
 - **Innovative methodologies:** Developed “intra-CORK,” a strategy for enhancing the therapeutic index of antibody-cytokine fusion proteins, in collaboration with Dr. Sheila Dakhel Plaza.
 - Leadership in **Industrial PhD Programs** at Philochem, recruiting 20 PhD students since 2018. The initiative was highlighted in an editorial in *Chem* (Puglioli, 2023).

10 most significant publications in the last 10 years:

“Discovery of high-affinity ligands for prostatic acid phosphatase via DNA-encoded library screening enables targeted cancer therapy” Georgiev T., Migliorini F., Ciamarone A., Müller M., Biancofiore I., Faviana P., Bartoli F., Park Kim Y.S., Principi L., Gilardoni E., Bassi G., Favalli N., Puca E., Neri D., Oehler S.*, Cazzamalli S.*, *Nature Biomedical Engineering* **2025**; <https://doi.org/10.1038/s41551-025-01432-6>

“Past, present and future of drug conjugates for cancer therapy” Cazzamalli S., Puca E., Neri D.*, *Nature Cancer* **2025**; <https://doi.org/10.1038/s43018-025-01042-w>

“Small Organic Carbonic Anhydrase IX Ligands from DNA-Encoded Chemical Libraries for Tumor-Targeted Delivery of Radionuclides” Müller M., Georgiev T., Mock J., Neri D., Cazzamalli S.*, Oehler S.*, *Journal of the American Chemical Society* **2025**; 147, 18230.

“A DNA-encoded chemical library based on chiral 4-amino-proline enables stereospecific isozyme-selective protein recognition” Oehler S., Lucaroni L., Migliorini F., Elsayed A., Prati L., Puglioli S., Matasci M., Schira K., Scheuermann J., Yudin D., Jia M., Ban N., Bushnell D., Kornberg R., Cazzamalli S., Neri D., Favalli N.*, Bassi G.* *Nature Chemistry* **2023**; 15, 1431.

“Selective tumor targeting enabled by picomolar fibroblast activation protein inhibitors isolated from a DNA-encoded affinity maturation library” Puglioli S., Schmidt E., Pellegrino C., Prati L., Oehler S., De Luca R., Galbiati A., Comacchio C., Nadal L., Scheuermann J., Manz M., Neri D., Cazzamalli S., Bassi G.*, Favalli N.* *Chem* **2022**; 2, 411.

“Fibroblast Activation Protein triggers release of drug payload from non-internalizing small molecule-drug conjugates in solid tumors” Zana A., Galbiati A., Gilardoni E., Bocci M., Millul J., Sturm T., Stucchi R., Elsayed A., Nadal L., Cirillo M., Roll W., Stegger L., Asmus I., Backhaus P., Schäfers M., Neri D.*, Cazzamalli S.* *Clinical Cancer Research* **2022**; 28, 5440.

“An ultra-high-affinity small organic ligand of fibroblast activation protein for tumor-targeting applications” Millul J., Bassi G., Mock J., Elsayed A., Pellegrino C., Zana A., Dakhel S., Nadal L., Gloger A., Schmid E., Biancofiore I., Donckele E.J., Samain F., Neri D.*, Cazzamalli S.* *PNAS* **2021**; 118:16:e2101852118

“Stereo- and regiodefined DNA-encoded chemical libraries enable efficient tumour-targeting applications” Favalli N., Bassi G., Pellegrino C., Millul J., De Luca R., Cazzamalli S., Yang S., Trenner A., Mozaffari N.L., Myburgh R., Moroglu M., Conway S.J., Sartori A.A., Manz M.G., Lerner R.A., Vogt P.K., Scheuermann J., Neri D.* *Nature Chemistry* **2021**; 13, 540.

“Chemically-defined antibody- and small molecule-drug conjugates for *in vivo* tumor targeting applications: a comparative analysis” Cazzamalli S., Dal Corso A., Widmayer F., Neri D.* *Journal of the American Chemical Society* **2018**; 140, 1617.

“Versatile protein recognition by the encoded display of multiple chemical elements on a macrocyclic scaffold” Li Y.*, De Luca R., Cazzamalli S., Pretto F., Bajic D., Scheuermann J., Neri D.* *Nature Chemistry* **2018**; 10, 441.

C. Past and Ongoing Research Support

From To	Project Title	Funding Agency	Role in the project
2021-2024	MagicBullet::Reloaded	EC	PI

D. Experience as a research supervisor

10 postdocs

15 PhD students

10 undergraduates