PERSONAL INFORMATION

Lucia Salvioni

Corso della Vittoria 82, Caronno Pertusella, 21042, Italia

lucia.salvioni@unimib.it +393478221802

Sex F | Date of birth 09/08/1989 | Nationality Italian

Maternity leave 2023

CURRENT POSITION

03/2026 – present

Assistant professor (RTT) – SSD BIOS-09/A

Fixed-term researcher at the Department of Biotechnology and Biosciences, University of Milano-Bicocca.

Qualified as Associate Professor in SC 05/E3 – Clinical Biochemistry and Molecular Biology by MUR in 2025 (*Abilitazione Scientifica Nazionale*)

WORK EXPERIENCE

03/2022 – 02/2026

Research fellow (RTDA) – SSD BIOS-09/A

Fixed-term researcher at the Department of Biotechnology and Biosciences, University of Milano-Bicocca.

Contract extended in April 2025 following a favorable evaluation of academic performance (research and teaching)

02/2019 – 02/2022

Post-doctoral researcher

Awarded 12+24-month research fellowships on the project *"Development of nanoparticles for the delivery of conventional or biological drugs for biomedical applications"*, Department of Biotechnology and Biosciences, University of Milano-Bicocca.

Supervisor: Prof. Davide Prosperi

04/2015 – 09/2015

Research associate

Awarded a 12-month research fellowship on the project *"Development of nanoparticles as carriers for oral peptide delivery",* Department of Biotechnology and Biosciences, University of Milano-Bicocca.

Supervisor: Prof. Miriam Colombo

06/2014 – 04/2015

Pharmacist

Farmacia Gorla, Corso della Vittoria 71, 21042, Caronno Pertusella (VA), Italy

Acquired key competencies for professional practice, including the use of point-of-care testing devices for the analysis of blood lipid levels, glucose, and glycated hemoglobin.

EDUCATION AND TRAINING

09/2015 – 02/2019

PhD in Materials Science and Nanotechnology

University of Milano-Bicocca

Excellent with honors

Thesis title: Nanoparticles-based delivery of biologic drugs: improvements and challenges

https://hdl.handle.net/10281/241141

Supervisor: Prof. Miriam Colombo

01/2017 – 07/2017

Visiting scholar at University of North Carolina at Chapel Hill (NC, US)

Supervisor: distinguished prof. Leaf Huang, pioneer in nanomedicine and targeted drug delivery

09/2008 – 03/2014

Master's degree in Pharmaceutical Chemistry and Technologies

Facoltà di Scienze del Farmaco, Università degli Studi di Milano
Full marks with honors (110/100 cum laude)
Master thesis title: Development of insulin-containing nanoparticles in pellets formulation for oral administration. Mentor: Dr. Luca Palugan

2003 – 2008

High school Diploma

Final grade 96/100
Liceo scientifico Blaise Pascal, Busto Arsizio (VA), Italy

SKILLS AND PROFESSIONAL DEVELOPMENT

Languages

Italian (Mother tongue)
English (C1 level)

Laboratory and Research Skills

Nanotechnology & Drug Delivery

• Synthesis of inorganic, polymeric, and lipid nanoparticles using conventional methods and microfluidic systems

• Characterization of nanoparticles and vesicles (Dynamic Light Scattering, Zeta potential, Relaxivity, Nanoparticle Tracking, and Differential Centrifugal Sedimentation Analyses)

• Biofunctionalization and drug loading of nanocarriers

Biochemistry & Molecular Biology

• UV-Vis spectrophotometry and spectrofluorimetric analysis

• Electrophoresis (agarose and SDS-PAGE gels), Western blot, and ELISA

• Chromatography techniques (Size Exclusion, Affinity) and HPLC analysis

• Plasmid cloning and nucleic acid extraction

Microbiology & Biotechnology

• Bacterial cell culture

• Recombinant protein production

• Agglutination assays and antimicrobial activity evaluation

Cell Biology & Advanced Imaging

• Mammalian cell culture (2D and 3D)

• Transfection and intracellular tracking

• Confocal microscopy, fluorescence microscopy, and hyperspectral microscopy

• Live-cell imaging and high-content screening analysis

• Flow cytometry (conventional and spectral) and cell sorting

In Vivo Studies & Animal Handling

• Handling and testing on animal models (mice, rats)

• Parenteral administration, biodistribution studies, and antitumor efficacy evaluation

Pharmaceutical Technology

• Production, coating, and characterization of pharmaceutical solid dosage forms (traditional and 3D printed)

• Rheological characterization using texture analyzer and rheometer

Software & Analytical Tools

GraphPad Prism (statistical analysis and graph generation), FlowJo (FC data analysis), FIJI (image processing and quantification), ChemDraw (molecular structure drawing)

Specialized Training and Continuing Education

• **Advanced Courses** – *The Power of Advanced Multiplexed Imaging* (Milano, 2025), *Advanced Technologies in Single Cell Omics* (Milano, 2025)

• **Regulatory Training and Certification in Animal Experimentation**
Certified theoretical and practical training for the use of animals (mouse and rat) in scientific procedures, in compliance with European Directive 2010/63/EU

• **Spring School of the European Society of Gene and Cell Therapy**, Oxford, 2018

• **Continuing Medical Education (ECM)** – Completion of the mandatory 150-credit requirement per triennium (since 2015), as established by the Italian Order of Pharmacists

• **Safety trainings** - Certified in general and specific safety training for medium-risk workers , including GMMs risk assessment and advanced training for laboratory teaching and research activity managers.

ADDITIONAL INFORMATION

Awards and honors

2025 – Premio Giovani Talenti, University of Milano-Bicocca
Third place, Ambito 4 (Life Sciences and Biomedical Area).
Selected by the *Accademia Nazionale dei Lincei* for excellence in research achievements.

Qualifications

• **2025 National Scientific Qualification** (*Abilitazione Scientifica Nazionale*)
Qualified as Associate Professor in SC 05/E3 - Clinical biochemistry and molecular biology, Italian Ministry of University and Research (MUR)

Academic Mentoring

Tutoring and supervision of undergraduate (8), graduate (7) and PhD students (2)

Teaching Activities

• **2025 – present: Lecturer for the 8-hour curricular course** 'Drug Delivery: Fundamental Principles and Technologies' **within the Doctoral Program** in Convergent Technologies for Biomolecular Systems, University of Milano-Bicocca.

• **2024 – present: Co-teacher, Laboratory of Inorganic Chemistry** (AY 2024-2025 – 5 CFU, 50 ore), University of Milano-Bicocca.

• **2024 – present: Lecturer in the Master's Program** "Production and Certification of Medical Devices and In Vitro Diagnostics in Europe" (MedTech ProCert), University of Milano-Bicocca.

• **2022 – 2024: Professor – Nanobiotechnology course** (AY 2021-2022 – 3 CFU, 21h; AY 2023-2024 – 2 CFU, 14h), University of Milano-Bicocca.

• **2022 – 2023: Co-teacher – Laboratory of Immunology** (AY 2021-2022 – 3 CFU, 30h; AY 2023-2024 – 3 CFU, 30h), University of Milano-Bicocca.

Research Fundings and Roles

• In 2024, LS participated in **"my first AIRC grant" selection process** and successfully passed the first evaluation phase, ranking among the top 92 out of 284 submitted proposals.

• LS is currently involved as **co-investigator** in 3 funded projects:

AIRC Ref. 25938 "Advanced Nanotechnology to Assist Keeping the tumor microenvironment Involved in cancer Neutralization (Anakin)" (492k €) – participation as an expert in cloning and transient transfection. Responsible for 3D in vitro model development and nanoparticle activity evaluation. Involved in preclinical studies and flow cytometry-based cell population isolation.

PRIN Ref. 2022BLLAEX "Decoding bio-nanovesicle surfaceome: towards synthetic biomimetic nanoparticles in precision nanomedicine" (205k €) - LS is involved in isolating tumor-derived nanovesicles, profiling their surface proteins, and producing synthetic biomimetic nanoparticles.

PRIN-PNRR Ref. P2022S9S58 "Sema3A RNA nanodelivery to pancreatic ductal adenocarcinoma microenvironment for the activation of tumor immune response" (300k €) - LS is actively engaged in developing and validating the in vitro and in vivo activity of mRNA-loaded lipid nanoparticles targeting tumor microenvironment remodeling, through microscopy, flow cytometry, and biomarker analysis.

• LS is a **member of the National Center for Gene Therapy and Drugs based on RNA Technology** (CN3 PNRR).

• In 2020-2021, LS joined as **co-investigator** a project titled “Study of the role of pulmonary surfactant protein D in SARS-CoV-2 infection for the development of a therapeutic treatment” founded by Fondazione Cariplo (50k €)

• In 2020-2021, LS served as **co-PI** in the project titled “Novel therapy for SARS-CoV-2 infection based on nanoconjugate of pulmonary surfactant protein D” founded by Fondazione Banco Farmaceutico (20k €)

Editorial Membership

• Part of the editorial board of Nanobiotechnology section of Frontiers in Bioengineering and Biotechnology, Frontiers in Molecular Biosciences and Frontiers in Materials (since 2021)

Affiliations

• Member of the **BioNanoMedicine Center “NANOMIB”**, University of Milano-Bicocca (since 2024)

• Member of the **Italian Society of Clinical Biochemistry and Clinical Molecular Biology (SiBioC)** (since 2020)

• Senior Scientist of **NanoCosPha infrastructure**, University of Milano-Bicocca. Member of the regional platform *“Nanotechnology for Personalized Medicine, Health, and Beauty Treatments”*, supporting translational research and industrial collaborations in nanotechnology-based product development.

• Registered in the **Italian Register of Pharmacists** (licensure obtained via national qualifying exam in 2015)

Publications

Dr. Salvioni is author of 37 publications (including 10 as first or co-first author, and 1 as corresponding author) on international peer-reviewed journals
H-index: 13 (Scopus), 15 (Google scholar)
Citations: 1000 (Scopus), 1288 (Google scholar)
Average IF 5.7, Total IF 212
ORCID: 0000-0002-9385-5926

Biomimetic lipid nanoparticles for RNA delivery to breast cancer microenvironment cells by enhanced homotypic and heterotypic adhesion
S. Garbujo et al. Journal of Colloid and Interface Science Online Jan 2026:139972.
https://doi.org/10.1016/j.jcis.2026.139972

Nanoparticle-Mediated Laser Ablation: An Integrated Phantom Experimental-Computational Framework for Selective Cancer Therapy
F. Bianconi et al. IEEE Journal of Selected Topics in Quantum Electronics. 2026, 32 (4), 7200411. https://doi.org/10.1109/JSTQE.2025.3621353

Dual-Modality Detection of Intracellular Nanoparticles via Smart Polymer-Enhanced SERS and Hyperspectral Microscopy Detection
M. Giustra al. Advanced Optical Materials. 2025, 13 (32), e01881.
https://doi.org/10.1002/adom.202501881

Dual-targeting strategy to repurpose Cetuximab with HFn nanoconjugates for immunotherapy of triple-negative breast cancer
L. Barbieri, L. Salvioni et al. ACS Applied Materials & Interfaces. 2025, 17 (23), 33648-63.
https://doi.org/10.1021/acsami.5c06626

Phytochemical Profiling, Antioxidant Activity, and In Vitro Cytotoxic Potential of Mangrove Avicennia marina
F. Cerri et al. Pharmaceuticals 18 (9), 1308.
https://doi.org/10.3390/ph18091308

Transferrin Receptor-1: Expression in Canine Mammary Tumours and In Vitro Therapeutic Applications
V. Moccia, et al. Veterinary and Comparative Oncology. 2025.
https://doi.org/10.1111/vco.70000

From animal testing to in Silico models: a systematic review and practical guide to cosmetic assessment
TG Vasiljev et al. Statistical Methods & Applications. 2025.
https://doi.org/10.1007/s10260-025-00794-0

Exploring Bovine Serum Albumin (BSA) as a Facile Substrate for Testing of Osmolytes as Cosmetic Ingredients
G. Sinesi, et al. Molecules. 2025, 30(3), 664.
https://doi.org/10.3390/molecules30030664

Microfluidic nanoparticle synthesis for oral solid dosage forms: A step toward clinical transition processes
L. Morelli, et al. International Journal of Pharmaceutics. 2024, 652, 123850.
https://doi.org/10.1016/j.ijpharm.2024.123850

Biodegradable SPI-based hydrogel for controlled release of nanomedicines: A potential approach against brain tumors recurrence
F. Viale et al. Journal of Drug Delivery Science and Technology. 2024, 96, 105672.
https://doi.org/10.1016/j.jddst.2024.105672

Co-processed materials testing as excipients to produce Orally Disintegrating Tablets (ODT) using binder jet 3D-printing technology
E. Ochoa et al. European Journal of Pharmaceutics and Biopharmaceutics. 2024, 194, 85-94. https://doi.org/10.1016/j.ejpb.2023.11.023

TGF-β Signaling Loop in Pancreatic Ductal Adenocarcinoma Activates Fibroblasts and Increases Tumor Cell Aggressiveness
N. Di Miceli et al. Cancers. 2024, 16 (21), 3705.
https://doi.org/10.3390/cancers16213705

Direct quantification of cytosolic delivery of drug nanocarriers using FlAsH-EDT2
R. Rotem, et al. Nanomedicine: Nanotechnology, Biology, and Medicine. 2023, 47, 102626.
https://doi.org/10.1016/j.nano.2022.102626

Surfactant protein D (SP-D) as a biomarker of SARS-CoV-2 infection
L. Salvioni et al. Clinica Chimica Acta, 2022, 537, pp. 140–145.
https://doi.org/10.1016/j.cca.2022.10.013

Saporin Toxin Delivered by Engineered Colloidal Nanoparticles Is Strongly Effective against Cancer Cells
L. Salvioni et al. Pharmaceutics. 2022, 14 (7), 1517.
https://doi.org/10.3390/pharmaceutics14071517

Specific immunosuppressive role of nanodrugs targeting calcineurin in innate myeloid cells
M. Colombo et al. iScience, 2022, 25 (10), 105042.
https://doi.org/10.1016/j.isci.2022.105042

Conjugation of gold nanoparticles with multidentate surfactants for enhanced stability and biological properties
R. Rotem et al. Journal of Materials Chemistry B, 2022, 11 (1), 61-71.
https://doi.org/10.1039/d2tb01528e

Eco-luxury: Making sustainable drugs and cosmetics with Prosopis cineraria natural extracts
M. Giustra et al. Frontiers in Sustainability, 2022, 3, 1047218.
https://doi.org/10.3389/frsus.2022.1047218

Folic acid functionalization for targeting self-assembled paclitaxel-based nanoparticles
E. Colombo et al. RSC Advances, 2022, 12 (54), 35484-35493.
https://doi.org/10.1039/d2ra06306a

Development of an effective tumor-targeted contrast agent for Magnetic Resonance Imaging based on Mn/H-Ferritin nanocomplexes
C. Tullio†, L. Salvioni† et al. ACS Applied Bio Materials. 2021, 4(11), 7800–7810.
https://doi.org/10.1021/acsabm.1c00724
†equal contribution

Impact of Tuning the Surface Charge Distribution on Colloidal Iron Oxide Nanoparticle Toxicity Investigated in Caenorhabditis elegans.
L. Amigoni†, L. Salvioni†, et al. Nanomaterials. 2021, 11(6), 1551.
https://doi.org/10.3390/nano11061551
†equal contribution

The emerging role of nanotechnology in skincare
L. Salvioni et al. Advances in Colloid and Interface Science. 2021, 293.
https://doi.org/10.1016/j.cis.2021.102437

99mTc-radiolabeled silica nanocarriers for targeted detection and treatment of HER2-positive breast cancer
P. Rainone et al. International Journal of Nanomedicine. 2021, 16, 1943-1960.
https://doi.org/10.2147/IJN.S276033

H-Ferritin nanoparticle-mediated delivery of antibodies across a BBB in vitro model for treatment of brain malignancies
M.A. Rizzuto et al. Biomaterials Science. 2021, 9 (6), 2032-2042.
https://doi.org/10.1039/d0bm01726d

The vault nanoparticle: A gigantic ribonucleoprotein assembly involved in diverse physiological and pathological phenomena and an ideal nanovector for drug delivery and therapy
G. Frascotti et al. Cancers. 2021, 13 (4), 707.
https://doi.org/10.3390/cancers13040707

Full-length recombinant hSP-D binds and inhibits SARS-CoV-2
R. Arroyo et al. Biomolecules. 2021, 11 (8), 1114.
https://doi.org/10.3390/biom11081114

The role of polymeric coatings for a safe-by-design development of biomedical gold nanoparticles assessed in zebrafish embryo
P. Floris et al. Nanomaterials. 2021, 11 (4), 1004.
https://doi.org/10.3390/nano11041004

Engineered Ferritin Nanoparticles for the Bioluminescence Tracking of Nanodrug Delivery in Cancer
M. Bellini, et al. Small. 2020, 16 (39).
https://doi.org/10.1002/smll.202001450

Nanoparticle-Mediated Suicide Gene Therapy for Triple Negative Breast Cancer Treatment
L. Salvioni et al. Advanced Therapeutics. 2020, 3(8).
https://doi.org/10.1002/adtp.202000007

Modeling the interaction of amphiphilic polymer nanoparticles with biomembranes to Guide rational design of drug delivery systems
R. Rotem et al. Colloids and Surfaces B: Biointerfaces. 2020, 196, 111366.
https://doi.org/10.1016/j.colsurfb.2020.111366

Colloidal polymer-coated Zn-doped iron oxide nanoparticles with high relaxivity and specific absorption rate for efficient magnetic resonance imaging and magnetic hyperthermia
P. Das et al. Journal of Colloid and Interface Science. 2020, 579, 186-194.
https://doi.org/10.1016/j.jcis.2020.05.119

Functionalization of colloidal nanoparticles with a discrete number of ligands based on a "HALO-bioclick" reaction

S. Garbujo et al. Chemical Communications. 2020, 56 (77), 11398-11401.
https://doi.org/10.1039/d0cc04355a

Thirty Years of Cancer Nanomedicine: Success, Frustration, and Hope
L. Salvioni et al. Cancers (Basel). 2019, 11(12).
https://doi.org/10.3390/cancers11121855

Are nanotechnological approaches the future of treating inflammatory diseases?
M.A. Rizzuto†, L. Salvioni†, et al. Nanomedicine. 2019, 14, 2379–2390.
https://doi.org/10.2217/nnm-2019-0159
†equal contribution

Monitoring the fate of orally administered PLGA nanoformulation for local delivery of therapeutic drugs
Colombo M. et al. Pharmaceutics. 2019, 11 (12), 658.
https://doi.org/10.3390/pharmaceutics11120658

Negatively charged silver nanoparticles with potent antibacterial activity and reduced toxicity for pharmaceutical preparations
L. Salvioni et al. International Journal of Nanomedicine. 2017, 12, 2517–2530.
https://doi.org/10.2147/IJN.S127799

Oral delivery of insulin via polyethylene imine-based nanoparticles for colonic release allows glycemic control in diabetic rats
L. Salvioni et al.Pharmacological Research. 2016, 110, 122–130,
https://doi.org/10.1016/j.phrs.2016.05.016

Scientific Communications

Oral communications:

13th-15th January 2026, Roma, IT
International Conference On Nanomedicine And Nanobiotechnology - ICONAN 2026
Contribution title: *Mirror-Image Peptides for Nucleic Acid Delivery: Toward Stable and Tunable Nanocarriers*

16th-17th December 2024, Erice, IT
3rd Course Clinical Laboratory Medicine in the Third Millennium: Challenges and Opportunities
Contribution title: *Nanotechnology in diagnosis: progress, challenges, and opportunities*

28th November 2022, Napoli, IT
3rd edition of Sense IT: research activities and outlooks from Italian women in sensor
Contribution title (Invited speaker): *Development of a biocompatible tumor-targeted nanocomplex as contrast agent for Magnetic Resonance Imaging*

14th June 2022, Pavia, IT
Research and nanomedicine 2022 - workshop
Contribution title: *In-deep investigation of Mn/H-Ferritin nanocomplex as tumor-targeted contrast agent for Magnetic Resonance Imaging*

15th December 2021, Milan, IT
Department Research Day, Department of Biotechnology and Biosciences, UNIMIB
Contribution title: *Development of an effective tumor-targeted contrast agent for Magnetic Resonance Imaging based on Mn/H-Ferritin nanocomplexes*

20th-22th October 2021, Milano, IT
Nanomed 2021 Conference
Contribution title: *Development of an effective tumor-targeted contrast agent for Magnetic Resonance Imaging based on Mn/H-Ferritin nanocomplexes*

15th December 2020, Virtual
Department Research Day, Department of Biotechnology and Biosciences, UNIMIB
Contribution title: *Role of SP-D in SARS-CoV-2 infection and therapeutic strategy based on the protein and its nanoconjugates*

11th-12th June 2019, Roma, IT
Nanoinnovation (Conference and Exhibition)
Contribution title: *Nanoparticle-mediated suicide gene therapy for triple negative breast cancer treatment*

12th May 2015, Milano, IT
Progetti “match making innovazione” e “life sciences”, Opportunità Tecnologiche Nel Settore Della Cosmeceutica, Assolombarda
Contribution title: *Cosmetic Applications Of Silver Nanoparticles*

Poster Presentations:

15th-20th June 2025, Barga, IT
Cancer Nanotechnology Gordon Conference Research 2025
Poster Title: *Targeting the PDAC Microenvironment by Integrating mRNA-LNPs Encoding Mutated Sema3A with a Vascularized Organ-on-Chip Model*

27th-30th May 2025, Barcellona, ES
Nanomed Europe 2025
Poster Title: *Exploring Protease-Resistant Mirror-Image Peptides as Nanocarriers for Nucleic Acid Delivery*

5th-7th October 2022, Genova, IT
54° congresso nazionale SIBioC - medicina di laboratorio
Poster Title: *Surfactant protein D (SP-D) as biomarker of SARS-COV-2 infection*

1st-2nd September 2022, Chapel Hill, NC, US
20th International Nanomedicine & Drug Delivery Symposium (nanoDDS’22)
Poster Title: *Saporin conjugation to engineered colloidal nanoparticles promotes its endosomal escape and anticancer activity*

22th-24th September 2019, Cambridge, MA, US
17th International Nanomedicine & Drug Delivery Symposium (nanoDDS’19)
Poster Title: *Nanoparticle-mediated suicide gene therapy for triple negative breast cancer treatment*

2nd-3rd May 2019, Milano, IT
Nanomedicine 2019
Poster Title: *Nanoparticle-mediated suicide gene therapy for triple negative breast cancer treatment*

21th -23th September 2016, Viterbo, IT
Nanomedicine
Poster Title: *Oral nanocarrier for Insulin Colon Delivery*

05th -08th July 2016, Thessaloniki, Grece
Nanotexnology, 13th International Conference on Nanoscience and Nanotechnology
Poster Title: *Oral nanocarrier for Insulin Colon Delivery*

Attendance at Scientific Events (Selection)	24th-25th February 2026, virtual Next Generation Immunotherapies: From Innovative Approaches to Overcoming Resistance and Beyond, European Association of Cancer Research
	08th-10th October 2024, Bologna, IT 56° congresso nazionale SIBioC – medicina di laboratorio
	13th-15th September 2024, Orlando, FL, US 22th International Nanomedicine & Drug Delivery Symposium (nanoDDS'24)
	29th February -1st March 2024, Milano, IT **Co-chair of the scientific session** - Recent advances in Nanomedicine: opportunities and challenges
	27th – 28th November 2024, Milano, IT Intreccio di saperi tra accademia e industria farmaceutica: il caso dei "complex drugs"
	11th-13th October 2021, Virtual 53° congresso nazionale SIBioC – medicina di laboratorio
	06th-08th October 2020, Virtual 52° congresso nazionale SIBioC – medicina di laboratorio
	10th-11th July 2018, Milano, IT Interaction between nanomaterials and the immune system: medical exploitations and safety issues
Research interruptions	February 2023-August 2023 - Maternity leave

Milano, 9th March 2026