



Relevant Competences	
<b>Profile</b>	Researcher, Consultant
<b>Education and Instruction</b>	PhD in Cellular and Molecular Biology

Biochemistry, Enzymology, Cellular and Molecular Biology  
 Product Development and GMP Manufacturing regarding Retro/Lentivirus vector production processes  
 Cell&Gene Therapy

**Work experience**

- 10/2020 – present      **Researcher Consultant**, IRCCS Istituto di Ricerche Farmacologiche Mario Negri, Milan, Italy  
*An integrated multidisciplinary platform to develop anti-COVID compounds*
  - Development and optimization of interconnected experimental steps to identify potential molecules capable at preventing the access of SARS-CoV-2 in host cells: *in silico* genetic approaches, *in vitro* biochemical techniques and *in vivo* studies*Member of the European Consortium EATRIS 'Covid-19 pandemic readiness'*
  
- 03/2020 – 08/2020      **Product Development Manager**, TC BioPharm Limited, Glasgow, UK
- 10/2019 – 03/2020      **Product Development Supervisor**, TC BioPharm Limited, Glasgow, UK  
*Development of Lentivirus vector production and purification processes*
  - Development and optimization of Upstream and Downstream processes
  - Development of LVV processes that can be transferred from laboratory scale to GMP Manufacturing
  - Optimization of the related analytical methods for Quality Control purpose
  - Creation of Protocols, Methods and Reports
  
- 03/2017 – 10/2019      **GMP Manufacturing Downstream and Cell&Gene Therapy**, MolMed, Milan, Italy  
*Retro/Lentivirus vectors production and purification*
  - Lentivirus purification with Äkta Pilot chromatography and Tangential Flow Filtration system
  - Transduction of CD34<sup>+</sup> cells with Lentivirus vectors
  - Creation of GMP Manufacturing documentation: Batch Records and SOPs, Quality deviation and Change management
  
- 09/2013 – 02/2017      **Postdoctoral Researcher**, Fondazione IRCCS Istituto Nazionale dei Tumori, Milan, Italy  
*MicroRNAs in breast cancer*, Supervisor: Dr. M.V. Iorio  
 Research activity supported by Fondazione Umberto Veronesi
  
- 12/2012 – 08/2013      **Postdoctoral Researcher**, Università degli Studi di Milano, Milan, Italy  
*Innovative materials for medical devices based on biofunctionalized surfaces with antifouling properties*, Supervisor: Dr. F. Forlani  
 Research activity supported by Fondazione Cariplo
  
- 06/2009 – 09/2009      **Internship, Artisan cheesemaking**, Valley Shepherd Creamery, New Jersey, USA  
*Cheesemaking process and pasteurization method*
  
- 09/2008 – 06/2009      **Chemistry and Biology Teacher**, Istituto Maria Consolatrice, Milan, Italy  
**Math and Sciences Teacher**, Istituto San Vincenzo, Milan, Italy

**Education and Instruction**

- 10/2014      **School of Oncology**, Wuhan, China
- 01/2010 – 01/2013      **PhD in Cellular and Molecular Biology, Biochemistry Unit**, Università degli Studi di Milano, Milan, Italy



- 02/2012 – 07/2012 *New insights into the structural and biochemical properties of human Renalase, a novel flavoenzyme involved in blood pressure regulation*, Supervisor: Dr. A. Aliverti  
**Research activity**, Yale University School of Medicine, New Haven, USA  
*Subcellular localization of endogenous Renalase*, Supervisor: Dr. G.V. Desir  
 Research activity supported by SIB – Società Italiana di Biochimica e Biologia Molecolare – and CIB – Consorzio Interuniversitario per le Biotecnologie
- 10/2005 – 12/2007 **Master Degree in Molecular Biology of the Cell, Biochemistry Unit**, Università degli Studi di Milano, Milan, Italy  
*Plasmodium falciparum ferredoxin NADP<sup>+</sup>-reductase: study of dimerization/inactivation process and role of Cys99*, Supervisor: Dr. G. Zanetti
- 10/2000 – 10/2005 **Bachelor Degree in Biological Sciences, Biochemistry Unit**, Università degli Studi di Milano, Milan, Italy  
*Analysis of the structural differences among Plasmodium falciparum ferredoxin NADP<sup>+</sup>-reductase and isoenzymes of other organisms*, Supervisor: Dr. G. Zanetti

### Main Technical Skills

- Biochemistry:** Äkta Pilot chromatography system, Chromatography: IEC, HIC, SEC, His/GST-tag  
 Production and purification of Retro/Lentivirus vectors, Expression and purification of recombinant proteins in bacteria and yeast  
 Tangential Flow Filtration system  
 Enzymatic activity assays and kinetics, Stopped-flow  
 Spectrophotometry, Spectrofluorimetry and mention of Crystallography
- Molecular Biology:** Site-directed Mutagenesis  
 Polymerase Chain Reaction, Reverse Transcriptase, Real-Time PCR, ELISA  
 Amplification of microRNAs, Gene Profiling
- Cellular Biology:** Growth of normal and cancer human cell lines, Cell culture in Cell factories  
*In vivo* tumor growth, Cell motility assay  
 MicroRNA overexpression/inhibition in normal and cancer human cell lines  
 Immuno- and coimmunofluorescence, Use of immunofluorescence microscopy  
 Immunohistochemistry and Immunoprecipitation  
 Fractionation, Subcellular localization and Western blot  
 Transduction of CD34<sup>+</sup> cells with Lentivirus vectors
- IT Skills:** Windows Operating System, Office package (Word, Excel, Power Point, Outlook)  
 UNICORN software  
 Scientific software to manage data and photos (GraphPad Prism, ImageJ)  
 Search engines and databases for research and scientific publications (PubMed, Target Scan)  
 Microbiological and particle monitoring systems in GMP (SCADA, MOVICON)  
 Laboratory management software to frozen samples (FreezerPro), Microsoft Dynamics AX
- Documentation:** Creation of GMP documentation, Quality Deviation and Change Management  
 Creation of Protocols, Methods and Reports  
 Peer-review papers publication

### Publications

In preparation

Bianchi L.\*, Baroni S.\*, et al. *Gold nanorods-assisted photothermal therapy: thermal effect and biological response in breast and pancreatic cancer cells*

Iaconis D., Baroni S., et al *Raloxifene: a multifaceted drug able to reduce SARS-CoV-2 infectivity*

Beeg M.\*, Baroni S.\*, et al *A comprehensive technology platform for the rapid discovery of peptide inhibitors against SARS-CoV-2 pseudovirus infection. Int. J. Mol. Sci. (2023)*

Diomede L., Baroni S., et al. *Doxycycline inhibition of a pseudotyped virus transduction does not translate to inhibition of SARS-CoV-2 infectivity. Viruses (2021)*

Romero Cordoba S.L., Rodriguez Cuevas S., Bautista Pina V., Maffuz Aziz A., D'Ippolito E., Cosentino G., Baroni S., et al. *Loss of function of miR-342-3p results in MCT1 over-expression and contributes to oncogenic metabolic reprogramming in triple negative breast cancer. Sci Rep (2018)*

**Baroni S.**, et al. *Exosome-mediated delivery of miR-9 induces cancer-associated fibroblast-like properties in human breast fibroblasts. Cell Death Dis.* (2016)

D'Ippolito E., Plantamura I., Bongiovanni L., Casalini P., **Baroni S.**, et al. *MiR-9 and miR-200 regulate PDGFR $\beta$ -mediated endothelial differentiation of tumor cells in Triple-Negative Breast Cancer. Cancer Res.* (2016)

Henne M., König N., Triulzi T., **Baroni S.**, et al. *Sulfurtransferase and thioredoxin specifically interact as demonstrated by bimolecular fluorescence complementation analysis and biochemical tests. FEBS OpenBio* (2015)

Cattò C., Dell'Orto S., Villa F., Villa S., Gelain A., Vitali A., Marzano V., **Baroni S.**, et al. *Unravelling the structural and molecular basis responsible for the anti-biofilm activity of Zosteric Acid. PlosONE* (2015)

Lee H.T., Kim J., Kim M., Wang P., Tang L., **Baroni S.**, et al. *Renalase protects against ischemic acute kidney injury in mice. JANS* (2013)

**Baroni S.**, et al. *Is Renalase a novel player in catecholaminergic signaling? The mystery of the catalytic activity of an intriguing new Flavoenzyme. Curr. Pharm. Des.* (2013)

**Baroni S.**, et al. *A single tyrosine hydroxyl almost entirely controls the NADPH specificity of Plasmodium falciparum ferredoxin NADP<sup>+</sup> reductase. Biochemistry* (2012)

Milani M., Ciriello F., **Baroni S.**, et al. *FAD-Binding site and NADP reactivity in human Renalase: a new enzyme involved in blood pressure regulation. J Mol Biol.* (2011)

**Baroni S.**, et al. *Crystal structure of human renalase, a novel flavoenzyme involved in the pathogenesis of cardiovascular diseases. In Flavins and Flavoproteins* (2011) (chapter in book)

**Reviewer for the Royal Society of Chemistry**

**Member of the Scientific Advisory Board Infectious Diseases International congress**

In compliance with the GDPR and the Italian Legislative Decree no. 196 dated 30/06/2003, I hereby authorize you to use and process my personal details contained in this document

