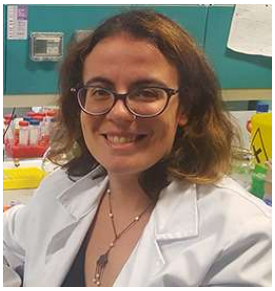
PERSONAL INFORMATION

Silvia Faravelli, PhD



Università degli Studi di Pavia
Dipartimento di Biologia e Biotecnologie L. Spallanzani
Via Adolfo Ferrata 9, 27100, Pavia

Current working level

Enterprise	University	EPR
☐ Management Level	☐ Full professor	☐ Research Director and 1st level Technologist / First Researcher and 2nd level Technologist / Principal Investigator
☐Mid-Management Level	☐ Associate Professor	☐ Level III Researcher and Technologist
☐ Employee / worker level	X Researcher and Technologist of IV, V, VI and VII level / Technical collaborator	☐ Researcher and Technologist of IV, V, VI and VII level / Technical collaborator

WORKING EXPERIENCE

Mar 2023 – now

Fixed-Term Technologist (PNRR INF-ACT)
Università degli Studi di Pavia, Prof. Federico Forneris

- Management of a cell culture facility for recombinant protein production: handling of all adhesion (C2C12, NG-108.15, HeLa, HEK293-T, MCF7, HCT-116, Kato III, T47D, SW480, SHSYS5, HaCat) and suspension (HEK293-F/ESF/ES, Y79) cell lines, coordinating facility users (internal and external), management of day-to-day activities, management of reagents (record keeping/restocking) and facility equipment (incubators, microscope, automatic cell counter), training of users.
- Improvement and standardisation of the laboratory's transfection and purification protocols for highly pure recombinant proteins: protein purification by affinity chromatography, quality control (SDS-Page, Western Blot, nano-DSF, Size Exclusion Chromatography), and long-term storage of produced recombinant proteins.
- Management of production, storage and shipment of recombinant proteins for third-party collaborations/projects/contracts.
- Development of new protocols for cell-based experiments, such as wound healing assays on immortalized cell lines, and for the generation of a stablyatransfected HeLa cell line.
- Management of day-to-day lab organization and activities such as: restocking/record keeping of supplies, coordinating general duties of fellows, handling of lab archives (DNA construct/ oligonucleotide databases, long-term -80°C/liquid N_2 storage, cell-line archive).
- Providing support (experiment design, cloning, production & purification, data analysis)with the experimental activities of active projects.
- Extraction and manipulation of DNA from bacterial samples and application of the principal cloning techniques (PCR, site-directed mutagenesis, restriction enzymes digestion).
- Training of new fellows (PhD, pre-doc, post-doc) and students (bachelor and master degrees) on GLP both in a wet lab and in sterile conditions.

Nov 2018- Feb 2023

Senior ResearchTechnician
Università degli Studi di Pavia, Prof. Federico Forneris

- Management of a cell culture facility for recombinant protein production: handling of all adhesion (C2C12, NG-108.15, HeLa, HEK293-T, MCF7, HCT-116, Kato III, T47D, SW480, SHSYS5, HaCat) and suspension (HEK293-F/ESF/ES, Y79) cell lines, coordinating facility users (internal and external), management of day-to-day activities, management of reagents (record keeping/restocking) and facility equipment (incubators, microscope, automatic cell counter), training of users.
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collaborations/projects/contracts.

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- Extraction and manipulation of DNA from bacterial samples and application of the principal cloning techniques (PCR, site-directed mutagenesis, restriction enzymes digestion).
- Training of new fellows (PhD, pre-doc, post-doc) and students (bachelor and master degrees) on GLP both in a wet lab and in sterile conditions.

Mar 2018 – Sep 2018

Post-doctoralResearcher
Università degli Studi di Milano, Milano, Prof. Paolo Landini

- Project on the study of Th1/Th17 population in patients with Crohn's Disease.
- Isolation of monocytes from whole human blood and differentiation into macrophages to test cytokine profile upon challenging with pathogenic *E. coli* (AIEC-LF82).
- Handling of HT29 intestinal cell line to test the adhesion-invasiveness and the cytokine profile after treatment with AIEC-LF82.
- Manipulation and isolation of cells from lung and colonic human tissues for the analysis of their immune profile by cytofluorimetric analysis.

Jan 2017 – Feb 2018

Post-doctoralResearcher
Università degli Studi di Milano, Milano, Prof. Paolo Fiorina

- Research project focused on the identification of new targets for Type 1 Diabetes (T1D) therapy.
- Isolation of peripheral blood mononuclear cells (PBMCs) from whole blood human samples, and subsequent cytofluorimetric analysis of the immune profile.
- Development of ELISPOT assays on PBMCs from T1D patients' to test their reactivity against new T1D targets.

Jan 2014 – Dec 2016

PhD Student
IRCCS Istituto di Ricerche Farmacologiche Mario Negri, Ranica, Dr. Federica Casiraghi

- Study of new strategies to induce central tolerance in solid organ allografts.
- Isolation and manipulation of primary cell lines from mice samples for the identification of protein expression after adenoviral infection.
- Extraction and manipulation of proteins from tissues and cell lines for their analysis.
- Improvement\development of an ELISA assay to detect the level of mouse urine albumin to test the efficiency of a specific inhibitor against complement C3a receptor.
- Preparation and staining of mice tissue samples for immunohistological/immunofluorescent analysis. Slide/sample preparation with microtome/cryostat.
- Cloning and protein expression with the cell-free systems.
- Extraction and manipulation of DNA and RNA, for gene expression analysis of cell lines or tissues by Real Time PCR.
- Production of cDNA starting from tissues and cell cultures.
- Animal handling and processing of their tissues for immunohistochemical/immunofluorescence applications.

Feb 2013 – Oct 2013

VolountierResearcher
IRCCS Policlinico San Matteo, Pavia, Prof. Giampaolo Merlini

- Support to the main lab activities: isolation of PBMCs from human bone marrow samples, manipulation of DNA and RNA samples.
- Protein extraction and analysis from urine samples of patients affected by systemic amyloidosis.

Jul 2012 – Oct 2012

Co.Co.Co
IRCCS Istituto Neurologico Besta, Milano, Dr. Finocchiaro

- Study on the impact of radiotherapy and chemotherapy on the immunogenicity of glioblastomas.
- Extraction and manipulation of DNA and RNA from human and mouse tissues for gene expression analysis by Real Time PCR and PCR.
- PBMCs extraction from human samples and cytofluorimetric analysis of adaptive immune system cells in patients treated with anti-glioblastomas radio- and chemotherapies.

- Animal handling.

Oct 2007 – Oct 2011

Masters/UndergraduateInternship
IRCCS Policlinico San Matteo, Pavia, Dr. Daniela Montagna

- Study of specific immune cells from the innate and adaptive immune system, especially on anti-leukemia CTLs.
- Extraction of PBMCs from whole human blood, isolation of CD4+ and CD8+ T cells for cytofluorimetric analysis

EDUCATION

Jan 2014 – Dec 2016

PhD in Scienze Farmacologiche
IRCCS Istituto di Ricerche Farmacologiche Mario Negri, Ranica (BG)

- The title released by the Institute, that is "Diploma di Perfezionamento in ScienzeFarmacologiche", has been declared equivalent to the Italian PhD "Dottore di Ricerca" on 14th of March 2017 by MIUR.
- Details: MIUR – Ministero dell'Istruzione dell'Università e della Ricerca" – Dipartimento per la Formazione Superiore e la Ricerca, Registro decreti, Prot. N. 0000509 – 14/03/2017 – Registrazione. Titolario: 02.03.08

Oct 2009 – Oct 2011

MSc in Biotecnologie Mediche e Farmaceutiche (LM9), 110/110cum laude
Università degli studi di Pavia, Pavia (PV)

Oct 2005 – Dec 2008

BSc in Biotecnologie, 106/110
Università degli studi di Pavia, Pavia (PV)

TRAINING

26 Jun 2017

Training in "QuantStudio™ 3D Digital PCR System"
Life Sciences – Thermo Fisher Scientific

26-29 May 2017

Training in "Corso di Formazione BD FACSCelesta"
BD Biosciences

29-31 Mar 2017

Training in "Corso introduttivoalla Sperimentazione Animale"
IRCCS Istituto di Ricerche Farmacologiche Mario Negri

12 Oct 2016

Seminar "Metabolomics Breaking News"
Agilent Technologies Italia

18 May 2016

Conference "Promuovere il dialogo fra *in vivo*, *in vitro* e *in silico*"
IRCCS Istituto di Ricerche Farmacologiche Mario Negri.

13 May 2016

Training in "Redazione progetti sperimentali: tips&tricks – edizione unica"
IZSLER – Brescia

11 Mar 2016

Training in "Il dolore animale: valutazione e gravità delle procedure – Edizione unica"
IZSLER – Brescia

16 Dec 2015

Seminar "Riconoscimento del dolore nella sperimentazione in vivo"
IRCCS Istituto di Ricerche Farmacologiche Mario Negri.

03-05 Jun 2014

Training in "Corso introduttivoalla Sperimentazione Animale"
IRCCS Istituto di Ricerche Farmacologiche Mario Negri

22-23 Oct 2009 **Workshop "AIEOP...in lab"**
Associazione Italiana di Ematologia ed Oncologia Pediatrica (AIEOP)

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s) English: Speaking and comprehension: C1; Writing: C1
Certifications: FIRST, PET, Trinity

Job-related skills Excellent team-working skills, very precise record keeping, strong proactive problem solving skills.

Digital skills Skilled with the Microsoft office package (Word, Excel, Powerpoint), experienced with the ImageJ image analysis software and with the FlowJo platform for the analysis of cytofluorimetric experiments, experienced with on-line cell line databases (e.g. ATCC).
Certifications: ECDL certification.

TEACHING AND TRAINING

Induction of new fellows and undergraduate students Safety courses and documentation, training of the new fellow/students on how to work in a wet lab, as well as the fundaments to work in sterile conditions.

Subject expert Expert on the subject in the Bio11 (molecular biology) disciplinary teaching sector.

CONFERENCE PROCEEDINGS

July 2024 **In-vitro deconstruction of the multi-layered modulation of the potent synaptic organizer agrin.**
Canciani A, Capitanio C, Stanga S, Faravelli S, Scietti L, Rossi L, Doto PA, El Nammoura O, Mapelli L, Soda T, D'Angelo E, Kienlen-Campard P, Forneris F. – Poster presentationat Armenise-Harvard Symposium, Boston (USA)

June 2024 **Molecular Characterization of collagen Lysine Post-translational Modification Enzymes.**
Mattoteia D, De Marco M, Rai SR, Faravelli S, Scietti L, Pinnola A, Forneris F - Poster presentation FEBS, Milan (Italy)

July 2023 **Unravelling the Molecular Mechanisms of Collagen Lysine Post-Translational Modifications.**
Mattoteia D, De Marco M, Scietti L, Rai SR, Faravelli S, Pinnola A, Forneris F. – Poster presentation at Gordon Research Conference Collagen, New Hampshire (USA)

September 2022 **A nanobody library for the stabilization and integrative characterization of human MuSK ectodomain.**
Di Bello A, Guarino SR, Canciani A, Faravelli S, Forneris F. – Poster presentation at UNIPV GBMC PhD meeting, Pavia (Italy)

June 2019 **Molecular architectures, interactions and functions of neuromuscular synapse organizers.**
Guarino SR, Canciani A, Palamini M, Viti LT, Campioni M, Iacobucci C, Stanga S, Kienlen-Campard P, Catucci G, Faravelli S, Sinze A, Forneris F. – Poster presentationat Armenise-Harvard Symposium, Gubbio (Italy)

Results presented in oral presentations by colleagues at various conferences in Italy and Abroad.

PARTECIPATION/ORGANIZATION OF SCIENTIFIC EVENTS

Rome, 19-21 Dec 2023 **INFACT MEETING**: helpdesk and secretary.

Pavia, 30 Sep 2023 **SHARPER NIGHT**: organization, preparation and active presence at the event with the stand funded by AIRC. Main goal of our stand was to increase the awareness of the layman on the risks of high sugar diet related with cancer development.

Pavia, 25 Sep 2021 **SHARPER NIGHT**: organization, preparation and active presence at the event with two stands, one

Safety courses and documentation, training of the new fellow/students on how to work in a wet lab, as well as the fundamentals to work in sterile conditions.
Expert on the subject in the Bio11 disciplinary teaching sector.

from my hosting lab (The Armenise-Harvard Laboratory of Structural Biology) and the other funded by AIRC. Main goal of our stands were for the former to let the audience to come closer to our research activities, and for the latter to increase the awareness of the layman on the risks of high sugar diet related with cancer development.

Vigevano, 22 Sep 2019

Vigevano in scienza: organization, preparation and active presence at the event with the stand of my hosting lab (The Armenise-Harvard Laboratory of Structural Biology), which main goal was to let the audience to come closer to our research activities.

Milano, 29-30 Sep 2017

Meet Me Tonight: organization, preparation and active presence at the event with the stand of my hosting lab (International Center for T1D, Pediatric Clinical Research Center "Romeo ed Enrica Invernizzi), which main goal was to let the audience to come closer to our research activities.

PUBLICATIONS

Scores

total number of publications in peer-review journals:**14**
total Impact Factor (IF):**117.026**
total number of citations (Scopus): **224**
H index (Scopus):**8**
ORCID:**0000-0001-7120-6370**

Peer-reviewed Publications

Optimized recombinant production of secreted multi-domain proteins using human embryonic kidney (HEK293) cells grown in suspension
BioProtoc. 2021 Apr 20;11(8):e3998. doi: 10.21769/BioProtoc.3998.
by **Faravelli S**, [...], Forneris F.
This publication is the work I performed to standardize and optimize a highly reproducible protocol for the production of recombinant proteins in mammalian cell suspension cultures.

Recombinant production and characterization of human enzymes responsible for collagen lysine post-translational modifications
by Mattoteia D, [...], Faravelli S, [...], Forneris F.
Paper under review, Methods in Molecular Biology.
In this publications, we describe in details the procedure to purify and characterizes the LH enzymes.

Bi-specific autoantigen-T cell engagers as targeted immunotherapy for autoreactive B cell depletion in autoimmune diseases
Front Immunol. 2024 Feb 26;15:1335998. doi: 10.3389/fimmu.2024.1335998. eCollection 2024.
byPerico L, [...], **Faravelli S**[...], Remuzzi G.
In this publication I have produced the PLA2R recombinant proteins in mammalian cell suspension cultures needed for the experiments.

Efficient SARS-CoV-2 infection antagonization by rhACE2 ectodomain multimerized onto the Avidin-Nucleic-Acid-NanoASsembly
Biomaterials. 2023 Dec:303:122394. doi: 10.1016/j.biomaterials.2023.122394. Epub 2023 Nov 16.
byBernardotto S, [...], **Faravelli S**[...], Morpurgo M.
In this publication I have produced the biotinilated hACE2 recombinant proteins in mammalian cell suspension cultures needed for the experiments.

Structure of the photoreceptor synaptic assembly of the extracellular matrix protein pikachurin with the orphan receptor GPR179
Sci. Signal. 2023 Jul:16 (Issue 79525), eadd9539
by Patil DN, [...], Faravelli S [...], Martemyanov KA.
In this publication I have contributed with the production of the GPR179 recombinant protein in mammalian cell suspension cultures needed for the experiments.

Identification of Regulatory Molecular "Hot Spots" for LH/PLOD Collagen Glycosyltransferase Activity
Int J Mol Sci. 2023 Jul 7;24(13):11213. doi: 10.3390/ijms241311213.
byPerico L, [...], **Faravelli S**[...], Remuzzi G.
In this publication I have produced the PLA2R recombinant proteins in mammalian cell suspension cultures needed for the experiments

Deconstruction of Neurotrypsin Reveals a Multi-factorially Regulated Activity Affecting Myotube Formation and Neuronal Excitability
Mol Neurobiol. 2022 Dec;59(12):7466-7485. doi: 10.1007/s12035-022-03056-2. Epub 2022 Oct 5.
by Canciani A, […], **Faravelli S**, […], Forneris F.
In this publication I have produced the recombinant protein Neurotripsin by co-transfections and I have handled the maintenance and differentiation of C2C12 cell line.

Memory CD8+ T cell diversity and B cell responses correlate with protection against SARS-CoV-2 following mRNA vaccination
Nat Immunol. 2022 Oct;23(10):1445-1456. doi: 10.1038/s41590-022-01313-z,Epub 2022 Sep 22.
byBrasu N, [...], **Faravelli S**[...], Pace L.
In this publication I have produced the SARS-CoV-2 RBD recombinant proteins in mammalian cell suspension cultures needed for the experiments

A Fe2+-dependent self-inhibited state influences the druggability of human collagen lysyl hydroxylase (LH/PLOD) enzymes
Front Mol Biosci. 2022 Aug 25;9:876352. doi: 10.3389/fmolb.2022.876352. eCollection 2022.
by Scietti L, […], **Faravelli S**, […], Forneris F.
In this publication I contributed to the production of LH recombinant proteins in mammalian cell suspension cultures needed for the experiments.

New mechanistic insights to PLOD1-mediated human vascular disease.
Transl Res. 2022 Jan;239:1-17. doi: 10.1016/j.trsl.2021.08.002. Epub 2021 Aug 13.
Koening SN, [...], Faravelli S, [...], Bradley EA.
In this publication I contributed to the production of LH recombinant proteins in mammalian cell suspension cultures needed for the experiments.

Epidemic Preparedness-Leishmania tarentolae as an Easy-to-Handle Tool to Produce Antigens for Viral Diagnosis: Application to COVID-19
Front Microbiol. 2021 Dec 13;12:736530. doi: 10.3389/fmicb.2021.736530.eCollection 2021.
by Varrotto-Boccazzi I[…]**, Faravelli S** [...], Bandi C
In this publication I have produced the SARS-CoV-2 RBD recombinant proteins in mammalian cell suspension cultures needed for the experiments.

A Pilot Study on Covid and Autism: Prevalence, Clinical Presentation and Vaccine Side Effects.
Brain Sci. 2021 Jun 28;11(7):860. doi: 10.3390/brainsci11070860.
by Brondino N, […],**Faravelli S**, […],Fusar-Poli P.
In this publication I have produced the SARS-CoV-2 RBD recombinant protein and I have performed the ELISA assays on serum samples.

Persistence of anti-SARS-CoV-2 antibodies in non-hospitalized COVID-19 convalescent health care workers
J Clin Med. 2020 Oct 1;9(10):3188. doi: 10.3390/jcm9103188.
byBruni M, […], **Faravelli S**[...], Facciotti F
In this publication I have produced the SARS-CoV-2 RBD, Spike and N-protein recombinant proteins in mammalian cell suspension cultures needed for the experiments.

Prostaglandin E2 stimulates the expansion of regulatory hematopoietic stem and progenitor cells in type 1 diabetes
Front Immunol. 2018 Jun 19;9:1387. doi: 10.3389/fimmu.2018.01387. eCollection 2018.
by Ben Nasr M, [...], Faravelli S, [...], Fiorina P.
In this publication I have performed the CD34 isolation, stimulation and analysis of IFN-g secretion with the Elispotassay.

Extracellular vesicles derived from T regulatory cells suppress T cell proliferation and prolong allograft survival
Sci Rep. 2017 Sep 14;7(1):11518. doi: 10.1038/s41598-017-08617-3.
by Aiello S, [...], Faravelli S, [...], Benigni A.
In this publication I have performed all the WB analysis for the characterization of the extracellular vescicles.

HOBBIES

Reading, knitting and crochet, board games.

Pavia, 27/06/2024