

FORMATO EUROPEO
PER IL CURRICULUM
VITAE



INFORMAZIONI PERSONALI

Nome Silvia Faravelli

ESPERIENZA LAVORATIVA 09/2024 – now

University of Pavia

- Dates (from – to) Department of Biology and Biotechnology
- Name and address of employer Perm-Term Technologist (PTA)
- Type of business or sector
- Type of employment
- Main duties and responsibilities
 - 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, quality control of transfection and production efficiencies.
 - Maintenance of the Sf9 cell line and optimization of expression system currently in use for the generation of baculovirus for recombinant protein production.
 - 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 stably transfected 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 N2 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.

11/2018 – 02/2023

University of Pavia

Department of Biology and Biotechnology

Fixed-Term Technologist (PNRR INF-ACT)

- Dates (from – to)
- Name and address of employer
- Type of business or sector
- Type of employment

- Main duties and responsibilities
 - 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 stably transfected 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 N2 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.

- Dates (from – to) 11/2018 – 02/2023
 - Name and address of employer University of Pavia
 - Type of business or sector Department of Biology and Biotechnology
 - Type of employment Research Technician
 - Main duties and responsibilities
 - 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 stably transfected 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 N2 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.

- Dates (from – to) 03/2018 – 09/2018
 - Name and address of employer University of Milan
 - Type of business or sector Department of Bioscience
 - Type of employment Postdoctoral fellow
 - Main duties and responsibilities
 - 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.

- Dates (from – to) 02/2017 – 02/2018
 - Name and address of employer University of Milan
 - Type of business or sector Centro di Ricerca Pediatrica Romeo ed Enrica Invernizzi, Ospedale Sacco, Milano

- Type of employment Postdoctoral fellow
 - Main duties and responsibilities
 - 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
-
- Dates (from – to) 01/2014 – 12/2016
 - Name and address of employer Laboratory of Transplant Immunology
 - Type of business or sector IRCCS Istituto di Ricerche Farmacologiche Mario Negri, Ranica (Centro Aldo e Cele Daccò), Bergamo
 - Type of employment PhD Student
 - Main duties and responsibilities
 - Study of new strategies to induce central tolerance in solid organ allografts.
 - Isolation and manipulation of primary cell lines from mice samples (thymus, spleen and lymph nodes) 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 (thymus, spleen, lymph nodes, kidney) for immunohistological/immunofluorescent analysis. Slide/sample preparation with microtome/cryostat.
 - Cloning, protein expression with the cell-free systems and analysis by Western Blot.
 - 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.
-
- Dates (from – to) 02/2013 a 10/2013
 - Name and address of employer Laboratories of Biotechnology and Biomedical Technologies
 - Type of business or sector Fondazione IRCCS Policlinico San Matteo, Pavia
 - Type of employment Volunteering
 - Main duties and responsibilities
 - 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.
-
- Dates (from – to) 07/2012 a 10/2012
 - Name and address of employer Department of Molecular Neuro-oncology
 - Type of business or sector Fondazione IRCCS Istituto Neurologico Carlo Besta, Milano
 - Type of employment Co.Co.Co.
 - Main duties and responsibilities
 - 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.
-
- Dates (from – to) 10/2010 a 10/2011
 - Name and address of employer Laboratorio Immunologia e Trapianti, Oncoematologia Pediatrica
 - Type of business or sector Fondazione IRCCS Policlinico San Matteo, Pavia
 - Type of employment Masters Internship
 - Main duties and responsibilities
 - Thesis title: “Studio della ricostituzione delle cellule iNKT in pazienti pediatrici affetti da leucemia acuta dopo trapianto aploidentico di cellule staminali emopoietiche”
 - Study of specific immune cells from the innate and adaptive immune system, especially on anti-leukemia CTLs.
 - Extraction of PBMCs from whole human blood, and isolation of NK, DCs and CD14 cells for cytofluorimetric analysis.

- Dates (from – to) 01/2010 a 09/2010
- Name and address of employer Immunology and Transplantation Laboratory, Pediatric Oncohematology
 - Type of business or sector Fondazione IRCCS Policlinico San Matteo, Pavia
 - Type of employment Volunteering
- Main duties and responsibilities Assisting with laboratory activities

- Dates (from – to) 04/2009 a 12/2009
- Name and address of employer Immunology and Transplantation Laboratory, Pediatric Oncohematology
 - Type of business or sector Fondazione IRCCS Policlinico San Matteo, Pavia
 - Type of employment Co.Co.Pro.
- Main duties and responsibilities
 - Focus of the project was the evaluation of the genomic profile of subpopulations of stem cells characterized by new superficial targets through an immunoproteomic approach.
 - Extraction of PBMCs from whole human blood, and isolation of different subpopulations of cells, especially the NK, DCs and CD14 cells for cytofluorimetric analysis.
 - Development of a new, alternative test to be used instead of the Cr51 for the evaluation of the cytotoxic ability of anti-leukemia T cells to recognise and eliminate leukemic cells, based on the expression of the CD107a marker on the cell membrane.

- Dates (from – to) 01/2009 a 03/2009
- Name and address of employer Immunology and Transplantation Laboratory, Pediatric Oncohematology
 - Type of business or sector Fondazione IRCCS Policlinico San Matteo, Pavia
 - Type of employment Volunteering
- Main duties and responsibilities Assisting with laboratory activities

- Dates (from – to) 10/2007 a 12/2008
- Name and address of employer Immunology and Transplantation Laboratory, Pediatric Oncohematology
 - Type of business or sector Fondazione IRCCS Policlinico San Matteo - Pavia
 - Type of employment Undergraduate Internship
- Main duties and responsibilities
 - Thesis title: “Analisi fenotipica e funzionale di linee di linfociti T citotossici anti-leucemia generate ed espande in-vitro per approcci d’immunoterapia adottiva”
 - Study of specific immune cells from the innate and adaptive immune system, especially on anti-leukemia CTLs.
 - Extraction of PBMCs from whole human blood and cytofluorimetric analysis of immune cells.

EDUCATION AND TRAINING

- Dates 07/01/2014 a 01/12/2016
- Name and type of organisation providing education or training IRCCS Istituto di Ricerche Farmacologiche Mario Negri, Ranica (BG)
 - Qualification awarded PhD in Pharmaceutical Science
 - Thesis title Adenoviral gene transfer of donor-derived MHC-class II molecule (H2-E α k) on AIRE-expressing medullary thymic epithelial cells (mTECs) to induce allograft tolerance in solid organ transplantation.
 - The title released by the Institute, that is “Diploma di Perfezionamento in Scienze Farmacologiche”, 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

- Dates 12/10/2009 a 25/10/2011
- Name and type of organisation providing education or training Università degli Studi di Pavia, Interfacoltà di Biotecnologie Mediche e Farmaceutiche
 - Qualification awarded Laurea Magistrale in Biotecnologie Mediche e Farmaceutiche

- Final Grade
 - Thesis title
- Studio della ricostituzione delle cellule iNKT in pazienti pediatriche affette da leucemia acuta dopo trapianto aploidentico di cellule staminali emopoietiche.
- Dates
- 19/09/2005 a 18/12/2008
- Name and type of organisation providing education or training
- Università degli Studi di Pavia, Facoltà di Biotecnologie
- Qualification awarded
- Laurea triennale in Biotecnologie
- Final Grade
 - Thesis title
- Analisi fenotipica e funzionale di linee di linfociti T citotossici anti-leucemia generate ed espanse in vitro per approcci d'immunoterapia adottiva

PERSONAL SKILLS

MOTHER TONGUE(S) Italian

OTHER LANGUAGE(S)

- Inglese
- Reading C1
 - Writing C1
 - Communication C1
 - Certifications
- FIRST CERTIFICATE IN ENGLISH, Feb2005
 PET - Preliminary English Test, Apr 2003
 TRINITY, Aug 2002

JOB-RELATED SKILLS

Excellent team-working skills, very precise record keeping, strong proactive problem solving skills, Highly resilient and able to work under pressure.

TECHNICAL SKILLS AND COMPETENCES

Cell biology, molecular biology, biochemistry, immunology

Biochemistry and molecular biology

- Affinity Chromatography and Size Exclusion Chromatography
- Extraction and quantification of proteins from tissues and cells of different origin (human, mouse, rat)
- Cloning
- Western Blot
- Cell-free systems
- Extraction of DNA and RNA from tissues and cells
- Retrotranscription RNA \rightarrow cDNA
- PCR
- Real Time PCR

Cell Biology

- Handling of immortalized cell lines, both in adhesion (C2C12, NG-108.15, HeLa, HEK293-T, MCF7, HCT-116, Kato III, T47D, SW480, SHSYS5, HaCat, HT29) and in suspension (HEK293-F/ESF/ES, Y79)
- Extraction of cells from murine (spleen, kidney, thymus, lymph nodes) and human (blood, bowel, lung) tissues
- Handling of primary human (PBMCs, CD4+, CD8+, CD34+, CD14+, NK, cellule dendritiche, tumoral neurospheres,) and murine (medullary thimic cells) cell lines
- Magnetic cell separation from PBMCs

- Cytotoxic assays
- Elispot
- Elisa
- Cell transfection

Flow cytometry staining and acquisition

- BD FACSCelesta
- BD FACSCanto II
- FACSDiva software
- FlowJo
- Miltenyi MACSQuant

Immunohistochemistry

- Embedding murine solid tissues in paraffin and OCT
- Preparing slides for immunohistochemistry and immunofluorescence using a cryostat and microtome
- Performing immunofluorescence staining on human and murine tissue sections

Digital skills

- GraphPad Prism
- 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).
- Windows, Apple e Ubuntu (Linux)
- ECDL – (European Computer Driving Licence) – 2007

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.

Recombinant production and characterization of human enzymes responsible for collagen lysine post-translational modifications
by Mattoteia D, [...], Faravelli S, [...], Forneris F.
Methods in Molecular Biology.

Selection of Functional Glycoforms in Anti-SARS-CoV-2 Human IgG1 Monoclonal Antibodies by Fc α RIIIa Affinity Chromatography and Mass Spectrometry
J. Med. Chem. 2026, XXXX, XXX, XXX-XXX. doi.org/10.1021/acs.jmedchem.6c00166
by Oliviero B, [...], Faravelli S, [...], Terreni M.

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.
by Perico L, [...], Faravelli S [...], Remuzzi G.

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.
By Bernardotto S, [...], Faravelli S [...], Morpurgo M.

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.

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.
By Mattoteia D, [...], Faravelli S [...], Forneris F.

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.

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.
by Brasu N, [...], Faravelli S [...], Pace L.

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.

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.
Koenig SN, [...], Faravelli S, [...], Bradley EA.

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

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.

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.
by Bruni M, [...], Faravelli S [...], Facciotti F

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.

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.

Date 01/07/2026

f.to Silvia Faravelli