

PERSONAL INFORMATION

Anselmo Canciani



Sex Male | Date of birth 22/11/1989 | Nationality Italian

WORK EXPERIENCE

05/2019 to Present

Post-Doc researcher

Armenise Harvard lab of structural biology, Università degli studi di Pavia, Pavia

- Integrative reconstruction of an LRP4-MuSK-Agrin interaction model deriving “constraints” from experimental (SAXS, crystallography, in-cell proximity ligation, biophysics-based interaction studies, cross-linking, mutagenesis) and in-silico (alphafold2 prediction, multifoX analysis, minimization with YASARA, reconstruction in ChimeraX) approaches.
- Investigation of the biological implications of the enzyme-substrate pair neurotrypsin-agrin involved in CNS synaptic plasticity, and the formation and destabilization of the Neuro-muscular Junction.
- Developed skills: Handling of adhesion cell-lines (neuron like cells and myoblasts), protein production (mammalian cells, and others), protein purification (chromatographic methods), biochemical protein characterization (thermal stability and ligand binding with nano dsf, protein – target interaction with surface Plasmon resonance, enzyme kinetics), in cell-proximity ligation assays for interaction studies, negative stain sample prep for electron microscopy, immunocytochemical/immunofluorescent staining and analysis of cell-based experiments, basics of fluorescence microscopy.
- Other duties: independent paper writing, coordination of remote synchrotron trips, contribution to day-by-day lab management, supervision of students (Rossi Lorenzo, Doto Pier-Antonio, Elnammoura Omar) and junior lab members.

10/2015 to 05/2019

PhD in Scienze Biomolecolari e Biotecnologie

Armenise Harvard lab of structural biology, IUSS fellow, Università degli studi di Pavia, Pavia

- Investigation and characterisation (structural and biochemical) of the multi-domain serine-protease neurotrypsin involved in the formation and destabilization of the Neuro-muscular Junction.
- Developed skills: Molecular biology techniques (PCR, restriction cloning, mutagenesis), Protein production with mammalian cell suspension systems, Protein purification with chromatographic methods, protein crystallization, in-solution structural investigation with small angle x-ray scattering (SAXS), enzyme biochemical characterization and kinetics analysis, Handling of adhesion cell-lines (NG 108-15 & C2C12), Neuron-muscle co-culturing technique for nerve-muscle contact formation, Immunocytochemical analysis of cell cultures with fluorescent probes (specifically of the aforementioned nerve-muscle co-cultures and individual cell lines).
- Other duties: supervision of students (Cristina Capitanio).

03/2014 to 09/2015

Internship during the *Molecular Biology and Genetics Laurea Magistrale*

GFG laboratory, Department of Molecular Medicine, Section of Immunology and Pathology of the *Università degli Studi di Pavia*.

- Protein expression and purification, DNA manipulation; also contributed to student supervision.

EDUCATION AND TRAINING

24/06/2023-28/06/2023

2nd Neuronal Surfaceome in Circuit Formation: From Structure to Function

School of biological sciences, Victoria university of Wellington New Zealand, held in scanno italy

- 10/2015-05/2019 [PhD in Scienze Biomolecolari e Biotecnologie, Evaluation: EXCELLENT](#)

Armenise Harvard lab of structural biology, IUSS fellow, Università degli studi di Pavia, Pavia

 - Investigation and characterisation (structural and biochemical) of the multi-domain serine-protease Neurotrypsin. Developed skills: Molecular biology techniques (PCR, restriction cloning, mutagenesis), Protein production with several systems (Eukaryotic, Prokaryotic), Protein purification with chromatographic methods, protein crystallization, in-solution structural investigation with small angle x-ray scattering (SAXS), enzyme biochemical characterization and kinetics analysis, handling of C2C12 muscle and NG108-15 neuronal cell lines, nerve-muscle co-culturing technique as model of neuro-muscular junctions, immuno-fluorescent staining techniques for fixed cell imaging. Finished with an evaluation of EXCELLENT.
- 11/2017-12/2017
&
05/2018-08/2018 [Training in nerve-muscle co-culturing to model neuromuscular junctions and subsequent fluorescent immunostaining analysis.](#)

Université catholique de Louvain (UCL), Alzheimer's Disease laboratory of Prof. Keinlen-Campard, Brussels, Belgium

 - Collaboration project using nerve-muscle co-cultures to investigate the role of Neurotrypsin at the neuro-muscular junction and on individual cell lines. Experiments focused on testing the effects of Neurotrypsin and agrin constructs on neuronal or muscle cell lines as well as on specially cultivated nerve-muscle co-cultures that model neuro-muscular junctions. Cell response was assessed with fluorescent immuno-staining for specific nerve/muscle differentiation markers. The project was awarded with an EMBO-short fellowship to cover travel and living expenses.
- 02/06/2017-11/06/2017 [International school of crystallography: Course in Integrative Structural biology](#)

Ettore majorana foundation and centre for scientific culture, Erice, Italy

 - Course/conference covering integrative structural biology approaches. From in solution approaches (SAXS, Mass-spec) to cryo-EM to conventional crystallography to alternative methods (XFEL) and available platforms/software for data integration.
- 10/09/2016 - 20/09/2016 [PEPC10 course in protein production, purification and crystallization](#)

EMBL Hamburg, Hamburg, Germany.

 - Course touching on multiple techniques for: protein production (Eukaryotes (bacteria), Prokaryotes (mammalian & insect cells), Cell-free systems), Purification by chromatography (IMAC, Affinity, HIC, Anion/Cation exchange, size exclusion), Crystallization (hanging drop, sitting drop, under oil crystallization, crystal seeding), In solution structural analysis (Thermal-shift assay (MST), SAXS, Mass-spec).
- 10/2013 - 09/2015 [Laurea Magistrale \(LM-6\) in Molecular Biology and Genetics 110/110 cum Laude](#)

Università degli studi di Pavia, Pavia

 - In depth study of Molecular biology (advanced molecular biology), notions in structural biology (Structural Pharmacology), Methods in biochemistry (purification and analysis of proteins), Cellular biochemistry, Pharmacology. Finished with a mark of 110/110 cum Laude
- 10/2010 - 02/2014 [Laurea triennale \(L-2\) in Biotecnologie mediche-farmaceutiche 95/110](#)

Università degli Studi di Pavia, Pavia

 - Fundamentals of Molecular biology, Cellular biology, Biochemistry, Genetics, Human Anatomy, Physiology, Pharmacology. Finished with a mark of 95/110.
- 09/2008 - 06/2010 [Attended years 1 and 2 of MBBS in Medicine and Surgery](#)

Barts and The London, Queen Mary's School of Medicine and Surgery, London

 - Basics of human pathology, physiology and anatomy
- 07/2007 [European Baccalaureate](#)

European School Brussels I, Uccle, Brussels, Belgium

- English, French, Biology, Mathematics, Chemistry, Physics, History, Geography

PERSONAL SKILLS

Mother tongue(s)

Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C2	C2	C2
French	C2	C2	C2	C2	C1
Spanish	B1	B1	B1	B1	A2

Skills

- Good team-working skills.
- Sense of initiative and problem solving.
- Precision and accuracy at the workplace.
- Extensive hands-on experience with protein production, purification and characterization.
- Good skills in the use of ATSAS and Scatter suites for SAXS data analysis.
- Competent in the use of crystallographic structure software (CCP4 suite, coot, chimera, chimeraX, pymol).
- Competent in the use of imageJ for image analysis and cell imaging data interpretation.
- Good skills in the use of: Microsoft Word, Microsoft Excel, Microsoft Powerpoint, Graphpad, GIMP.

Driving licence

- B

ADDITIONAL INFORMATION

Publications

- Efficient SARS-CoV-2 infection antagonization by rhACE2 ectodomain multimerized onto the Avidin-Nucleic-Acid-NanoASsembly. Bernardotto S., Frasson I., Faravelli S., Morelli A., Schiavon E., Moscatiello GY., Violatto MB., Pinnola A., Canciani A., Mattarei A., Rossi G., Brini M., Pasetto L., Bonetto V., Bigini P., Fomeris F., Richter SN., Morpurgo M., *Biomaterials* 2023, PMID: 38007919.
- Optimized recombinant production of secreted multi-domain proteins using human embryonic kidney (HEK293) cells grown in suspension. Faravelli S., Campioni M., Palamini M., Canciani A., Chiapparino A. and Fomeris F., *Bio-protocols* 2021, PMID: 34124299
- Deconstruction of Neurotrypsin Reveals a Multi-factorially Regulated Activity Affecting Myotube Formation and Neuronal Excitability. Canciani A, Capitanio C, Stanga S, Faravelli S, Scietti L, Mapelli L, Soda T, D'Angelo E, Kienlen-Campard P, Fomeris F., *Mol Neurobiol.* 2022 doi: 10.1007/s12035-022-03056-2
- Structural characterization of the third scavenger receptor cysteine-rich domain of murine neurotrypsin. Canciani A, Catucci G, Fomeris F., *Protein Sci.* 2019 doi: 10.1002/pro.3587
- Dissecting the Extracellular Complexity of Neuromuscular Junction Organizers. Canciani A., Guarino SR., Fomeris F., *Frontiers in Molecular biosciences* 2020 doi: 10.3389/fmolb.2019.00156
- "Identifying and Visualizing Macromolecular Flexibility in Structural Biology." Palamini M., Canciani A., Fomeris F., *Frontiers in Molecular biosciences* 2016 doi: 10.3389/fmolb.2016.00047

Won fellowships

- Embo Short fellowship, awarded for a project testing the effects of Neurotrypsin on a neuromuscular junction model.

- Presentations**
- Presentation at 2023 2nd Neuronal Surfaceome in Circuit Formation: From Structure to Function (Neuronal Surfaceome meeting) in Scanno, Italy, June 24th to 28th.
 - Presentation at the 2020 annual Join Symposium of the Department of biology and biotechnology at the university of Pavia.
 - Regular presentations to collaborating laboratories.
 - Poster presentation at PEPC10 course.
 - Poster Presentation at ERICE integrative structural biology course.
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- Other**
- Voluntary work with the VIP Pavia association, Ex boy-scout
 - Hobbies: board games, hiking, diving, travelling.
- References**
- Prof. Federico Fomeris, Head of the Armenise Harvard lab in Pavia and Associate professor at the University of Pavia, e-mail contact: *federico.fomeris@unipv.it*
 - Dr. Luigi Scietti, Head of the Biochemistry and Structural Biology Unit at the European Institute of Oncology (IEO), e-mail contact: *luigiangelo.scietti@ieo.it*
 - Prof. Keinlen-Campard, Professor at the Université catholique de Louvain (UCL), e-mail contact: *pascal.kienlen-campard@uclouvain.be*
 - Dr Serena Stanga, Assistant Professor in Human Anatomy, Neuroscience Institute Cavalieri Ottolenghi (NICO), Università degli Studi di Torino, Torino (Italy), e-mail contact: *serena.stanga@unito.it*
 - Prof. Ermanno Gherardi, Professor at the University of Pavia, e-mail contact: *egherard@unipv.it*