MARCO PEDRETTI – curriculum vitae

PERSONAL INFORMATION

Born in Esine (BS), Italy, in 1995.
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EDUCATION

- October 2020 – present: PhD student in Biotechnology, University of Verona. Field: "Biomedical Sciences"
- July 2019: M.Sc. degree in Molecular and Medical Biotechnology, obtained at University of Verona (110/110 *cum laude*). Dissertation: AtSAC3B is a novel centrin target in *Arabidopsis thaliana.*
- July 2017: "Laurea in Biotecnologie", corresponding to B.Sc. degree in Biotechnology, obtained at University of Verona (110/110). Dissertation: "Caratterizzazione molecolare della proteina calmodulin-like 19 di Arabidopsis thaliana"
- July 2014: High school diploma (scientific studies), Liceo "F. Meneghini" in Edolo (BS).

RESEARCH EXPERIENCE

- October 2020 – present: PhD program in Biotechnology, University of Verona. Field: "Biomedical Sciences"
- August 2019 – September 2020: research fellowship at the Biochemistry laboratory of Prof. Astegno and Prof. Dominici, Department of Biotechnology, University of Verona.
- November 2019: visiting fellow at the laboratory of Dr. Adele Di Matteo, Department of Biochemistry, University of Rome, "La Sapienza",
- July 2018 – July 2019: Master's degree thesis at the Biochemistry laboratory of Prof. Astegno and Prof. Dominici, Department of Biotechnology, University of Verona.
- September – December 2016: Bachelor's degree thesis at the Biochemistry laboratory of Prof. Astegno and Prof. Dominici, Department of Biotechnology, University of Verona.

ACADEMIC TEACHING AND TUTORING EXPERIENCE

Teaching

- October-December 2021: teaching activity of Chemistry course "recupero saperi minimi" for bachelor's degree students in Sports Science.
- June 2021: teaching/laboratory activity in the National Project PCTO (Percorsi per le Competenze Trasversali e l'Orientamento) for high school students.
- February 2021: invited contribution to the Orientation Course "Biotecnologie e scienze della vita", promoted by COSP (Comitato per l'orientamento scoalstico e professionale), Verona.

Tutoring

- Laboratory tutor for the Enzymology in medical biotechnology course, Master's degree in Molecular and Medical Biotechnology, University of Verona.
  - April 2022, Prof. Astegno

- Laboratory tutor for the Analytical Biochemistry course, Bachelor's degree in Biotechnology, University of Verona
  - October 2021, Dr.Favretto
  - October 2020, Prof. Dominci
  - October 2018, Prof. Astegno

- Laboratory tutor for the Protein Engineering module, Research-Inspired Laboratory course, Master's degree in Molecular and Medical Biotechnology, University of Verona.
  - March 2021, Prof. Astegno
  - March 2019, Prof. Astegno

SCIENTIFIC SKILLS AND INTERESTS

- Recombinant protein production in *E.coli* (molecular cloning, recombinant protein expression) and purification (size exclusion, ion exchange, hydrophobic and affinity chromatography), PAGE in native or denaturing (SDS-PAGE) conditions, Western Blotting.
- Protein engineering: site directed mutagenesis for amino acid insertion, deletion or substitutions
- Protein-protein and protein-ion interactions studied by experimental techniques (isothermal titration calorimetry, fluorescence and absorption spectroscopy, circular dichroism, nuclear magnetic resonance)
- Enzymatic steady state kinetics and enzyme spectral and structural characterization
- Analytes identification via chromatographic techniques (i.e. HPLC and TLC)

SCIENTIFIC PUBLICATIONS

* = *equal contribution*

1. Bombardi, L., Favretto, F., **Pedretti, M.**, Conter, C., Dominici, P., & Astegno, A. (2022). Conformational Plasticity of Centrin 1 from Toxoplasma gondii in Binding to the Centrosomal Protein SFI1. Biomolecules, 12(8), 1115.
2. Troilo, F., **Pedretti, M.**, Allocatelli, C. T., Astegno, A., & Di Matteo, A. (2022). Rapid kinetics of calcium dissociation from plant calmodulin and calmodulin-like proteins and effect of target peptides. Biochemical and biophysical research communications.
3. **Pedretti, M.***, Bombardi, L.*, Conter, C., Favretto, F., Dominici, P., & Astegno, A. (2021). Structural Basis for the Functional Diversity of Centrins: A Focus on Calcium Sensing Properties and Target Recognition. International Journal of Molecular Sciences, 22(22), 12173.
4. Conter, C., Bombardi, L., **Pedretti, M.,** Favretto, F., Di Matteo, A., Dominici, P., & Astegno, A. (2021). The interplay of self-assembly and target binding in centrin 1 from Toxoplasma gondii. Biochemical Journal.
5. Bombardi, L.*, **Pedretti, M.*,** Conter, C., Dominici, P., & Astegno, A. (2020). Distinct Calcium Binding and Structural Properties of Two Centrin Isoforms from Toxoplasma gondii. Biomolecules, 10(8), 1142.

6. **Pedretti, M**., Conter, C., Dominici, P., & Astegno, A. (2020). SAC3B is a target of CML19, the centrin 2 of Arabidopsis thaliana. Biochemical Journal, 477(1), 173-189.
7. Trande, M., **Pedretti, M.**, Bonza, M. C., Di Matteo, A., D'Onofrio, M., Dominici, P., & Astegno, A. (2019). Cation and peptide binding properties of CML7, a calmodulin-like protein from Arabidopsis thaliana. Journal of inorganic biochemistry, 199, 110796.

MEMBERSHIP OF SCIENTIFIC SOCIETIES

2022-present: Member of the Protein Society

SELECTED SEMINARS/WORKSHOPS PARTICIPATION

1. 2021: "Pharmacological perspectives from investigation of the gasotransmitter hydrogen sulfide in Down syndrome and Alzheimer's disease", by Prof. Csaba Szabo, November 18th
2. 2021: "The gaseous signaling molecules NO, CO and H2S as new old players in the prokaryotic world", by Prof. Robert K. Poole and Adrie J.C. Steyn, October 14th
3. 2021: "Biomimetic nanoparticles in nanomedicine", by Prof. Concepcion Jimenez Lopez, 7th June.
4. 2021: "Vaccines and monoclonals to regain our freedom", by Dr. Rappuoli, January 22nd
5. 2020: "Principles and examples of metabolic engeenering", by Prof. Matteo Ballottari, October 15th, Verona
6. 2019: "Application workshop, Platform of spectroscopy, diffractometry and molecular interactions". June 21st, Verona.
7. 2019: "In vivo analysis of Ca^{2+} dynamics in Arabidopsis: tools and applications", by Prof. Alex Costa. April 5th, Verona.
8. 2019: "Protein-protein recognition: from structure to dynamics", by Prof. Daniele Dell'Orco and Dr. Valerio Marino. April 1st-4th, Verona. Day 1/2: "Dynamics of protein-protein recognition: protein graphics and structural bioinformatics". Day 3: "Protein-protein interactions: overview of experimental techniques for the analysis". Day 4: "Labwork: protein visualization with PyMol".
9. 2018: "Structure, dynamics, and self-assembly of amyloidogenic proteins", by Prof. Michael Assfalg and Dr. Francesca Munari. December 21st, Verona.
10. 2018: "Integrated Multi-omics Approach for Precision Medicine", by Dr. Marcello Manfredi. November 22nd, Verona.

ATTENDED CONGRESSESS/ADVANCED SCHOOL

1. 2022: oral presentation to "4th ISFMS—Biochemistry, Molecular Biology and Druggability of Proteins"
2. 2022: poster presentation to "IUBMB advanced school: cofactor assembly, transport and insertion". May 16th – 20th , Spetses Island – Greece.
3. 2021: "WebPro, Proteins on Web". May 20th and 21st. Main topic: protein stability; the role of proteins in infectious diseases; protein-mediated organelles dynamics; structure-function relationship.
4. 2018: "Protein Structure-Function Relationship: new challenges and advancements". October 19th, Verona. A one-day event organized by GIDRM (Gruppo Italiano Discussione Risonanze Magnetiche) and SIB (Società Italiana di Biochimica e Biologia Molecolare) with speakers from different national and international universities. Main topic: structural and functional studies of proteins and complex biomolecular systems with a high impact on biological research

SELECTED POSTER CONTRIBUTIONS

	Conference	Poster title	Authors
1	60th Congress of the Italian Society of Biochemistry and Molecular Biology (SIB) 2019, Lecce	Ca^{2+} and Mg^{2+} binding to calmodulin-like protein 7 (CML7) from *Arabidopsis thaliana* and interaction with a model target peptide	Trande M., **Pedretti M.**, Bonza M.C., Di Matteo A., D'Onofrio M., Dominici P., Astegno A.
2	60th Congress of the Italian Society of Biochemistry and Molecular Biology (SIB), 2019, Lecce	Characterization of two centrin isoforms from *Toxoplasma gondii*	Bombardi L., Conter C., **Pedretti M.**, Astegno A.
3	33rd Annual Symposium of the Protein Society, 2019, Seattle, United States.	RAD4 and SAC3B are centrin targets in *Arabidopsis thaliana*	Trande M., **Pedretti M.**, Dominici P., Astegno A.
4	31st meeting of PhD students in biochemical sciences "A. Castellani", 2019, Brallo di Pregola (PV), Italy.	Molecular and structural properties of centrin 2 from *Toxoplasma gondii*	Bombardi L., Conter C., **Pedretti M.**, Astegno A.
5	36th Annual Symposium of Protein Society, 2022, San Francisco, United States.	Role of cystathionine-γ-lyase from Pseudomonas aeruginosa in cysteine biosynthesis and H2S generation	**Pedretti M.,** Conter C., Martínez-Cruz L.A, Dominici P., Astegno A.

SPOKEN LANGUAGES

- Italian: mother-tongue
- English: fluent (level C1, CLA certification)
- Spanish: base level

Autorizzo al Trattamento dei Dati Personali da parte dell'Ateneo di Verona ai sensi di quanto previsto dal D.Lgs. n. 196/2003 e Autorizzo alla pubblicazione del CV sul sito istituzionale dell'Ateneo secondo quanto previsto dall'art. 15 del D.Lgs. n° 33/2013

Verona, October 2022

Marco Pedretti