

CHIARA BACCHELLA

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ACTUAL EMPLOYMENT

Postdoctoral researcher (RTDa) at the Department of Chemistry of the University of Pavia from May 1st 2023.

EDUCATION

Doctoral program in Biomolecular Science and Biotechnology at Istituto Universitario di Studi Superiori (IUSS, Piazza della Vittoria 15 – PV) from October 1st 2017 to January 31th 2021.

Master degree program in Advanced Biotechnology at the University of Pavia, Department of Biology and Biotechnology "Lazzaro Spallanzani", Via Ferrata 9 (PV), from September 2014 to September 2016.

Bachelor degree program in Biotechnology at the University of Pavia, Department of Biology and Biotechnology "Lazzaro Spallanzani", Via Ferrata 9 (PV), from September 2011 to September 2014.

PROFESSIONAL EXPERIENCE

Postdoctoral fellow at the Department of Chemistry of the University of Pavia from February 1st 2021 to January 31th 2023.

Fellowship at the Department of Chemistry of the University of Pavia from April 1st 2017 to September 30th 2017.

Training internship with the academic spin-off Noxamet Srl, PTS-Via Taramelli 24 Pavia (PV) 27100 (Head office: Via Besana 2 Milano (MI) 20122) from October 1st 2016 to March 31th 2017.

DIDACTIC ACTIVITY

From AA 2023/24 – Professor of “Laboratorio di Chimica Generale ed Inorganica – Corso A (3 CFU)” for bachelor degree in Biotechnology.

Dr. Chiara Bacchella has participated as tutor in laboratory activities and didactic seminars for Biology, Biotechnology, Natural Science and Geology majors.

- On-line Tutor Activity of Inorganic Chemistry for Biology major (AY: 2017/18 and 2018/19)
- Tutor activities (Didactic Seminars) of Inorganic Chemistry for Biology and Biotechnology major (AY 2017/18, 2018/19, 2019/20, 2020/21, 2021/22, 2022/23), for Natural Science major (AY 2018/19 and 2019/20), and for Geology major (AY 2017/18)

- Tutor in Chemistry Practical activities (Didactic laboratories for Biology and Biotechnology majors) (AY 2018/19, 2019/20, 2020/21, 2021/22, 2022/23)
- Tutor for Piano Nazionale Lauree Scientifiche (PNLS) (AY 2017/18; 2018/19; 2019/20; 2020/21 and 2021/22)
- Adjunct Professor in UF14, Advanced Organic Chemistry for Fondazione I.T.S. per le Nuove Tecnologie della Vita, Bergamo (AY 2021/22; 2022/23; 2023/24)

THESIS CO-SUPERVISOR

Dr. Chiara Bacchella has supervised the experimental thesis work of several students of I/II level degrees in Biotechnology and Chemistry.

She has officially supervised one thesis in Biotechnology and co-supervised five theses in Advanced Biotechnology.

SCIENTIFIC ACTIVITY

The research activity of Dr. Chiara Bacchella is related to the field of Bioinorganic Chemistry and Coordination Chemistry, with the aim of studying the biologically-relevant aspects of the involvement of transition metal ions in neurological disorders by analyzing their complexation with bioligands, as peptides and proteins, and the resulting redox properties of these systems.

• **SCIENTIFIC PRODUCTION**

The total times citations have been calculated by Scopus and ISI Web of Science. The highest value obtained from the two databases has been reported (updated May 2024).

1. S. Dell'Acqua, C. Bacchella, E. Monzani, S. Nicolis, G. Di Natale, E. Rizzarelli, L. Casella, "Prion peptides are extremely sensitive to copper induced oxidative stress." *Inorg. Chem.* **2017**, *56*, 11317-11325. DOI: 10.1021/acs.inorgchem.7b01757
IF: 4.700 Citations: 14
2. E. Monzani, S. Nicolis, S. Dell'Acqua, A. Capucciati, C. Bacchella, F. Zucca, E. Mosharov, D. Sulzer, L. Zecca, L. Casella, "Dopamine, oxidative stress and protein-quinone modifications in Parkinson's and other neurodegenerative diseases." *Angew. Chem. Int. Ed. Engl.* **2019**, *58*, 6512–6527. DOI: 10.1002/anie.201811122
IF: 12.959 Citations: 154
3. C. Bacchella, S. Gentili, D. Bellotti, E. Quartieri, S. Draghi, M. C. Baratto, M. Remelli, D. Valensin, E. Monzani, S. Nicolis, L. Casella, M. Tegoni, S. Dell'Acqua*, "Binding and reactivity of copper to R1 and R3 fragments of tau protein." *Inorg. Chem.* **2020**, *59*, 1, 274-286. DOI: 10.1021/acs.inorgchem.9b02266
IF: 5.165 Citations: 32
4. C. Bacchella, S. Nicolis, S. Dell'Acqua, E. Rizzarelli, E. Monzani, L. Casella, "Membrane binding strongly affects dopamine reactivity induced by Cu-prion and Cu-A β peptides. A ternary Cu-A β -prion peptide complex is stabilized and solubilized in SDS micelles". *Inorg. Chem.* **2020**, *59*, 1, 900-912. DOI: 10.1021/acs.inorgchem.9b03153
IF: 5.165 Citations: 14
5. C. Bacchella, J.T. Brewster, S. Bähring, S. Dell'Acqua, H.D. Root, G.D. Thiabaud, J.F. Reuther, E. Monzani, J.L. Sessler, L. Casella, "Condition-dependent coordination and peroxidase activity of hemin-A β complexes". *Molecules* **2020**, *25*, 5044.

DOI:10.3390/molecules25215044

IF: 4.412

Citations: 5

6. C. Bacchella, S. Dell'Acqua, S. Nicolis, E. Monzani, L. Casella, "A Cu-bis(imidazole)-Substrate Intermediate is the Catalytically Competent Center for Catechol Oxidase Activity of Copper Amyloid- β ". *Inorg. Chem.* **2021**, *60*, 606–613. DOI: 10.1021/acs.inorgchem.0c02243
IF: 5.165 Citations: 6
7. C. Bacchella, S. Dell'Acqua, S. Nicolis, E. Monzani, L. Casella, "Oxidase reactivity of Cu(II) bound to N-truncated A β peptides promoted by dopamine" *Int. J. Mol. Sci.* **2021**, *22*, 5190.
DOI:10.3390/ijms22105190
IF: 5.924 Citations: 3
8. V. Ciccone, A. Filippelli, C. Bacchella, E. Monzani, L. Morbidelli, "The Nitric Oxide Donor [Zn(PipNONO)Cl] Exhibits Antitumor Activity through Inhibition of Epithelial and Endothelial Mesenchymal Transitions" *Cancers* **2022**, *14*, 4240.
DOI: 10.3390/cancers14174240
IF: 6.575 Citations: 3
9. C. Bacchella, S. Dell'Acqua, S. Nicolis, E. Monzani, L. Casella, "The reactivity of copper complexes with neuronal peptides promoted by catecholamines and its impact on neurodegeneration", *Coord. Chem. Rev.* **2022**, *471*, 214756. DOI:10.1016/j.ccr.2022.214756
IF: 24.883 Citations: 9
10. C. Bacchella, S. Gentili, S. Mozzi, E. Monzani, L. Casella, M. Tegoni, S. Dell'Acqua, "Role of the Cysteine in R3 Tau Peptide in Copper Binding and Reactivity", *Int. J. Mol. Sci.* **2022**, *23*, 10726. DOI: 10.3390/ijms231810726
IF: 6.208 Citations: 2
11. C. Bacchella, F. Camponeschi, P. Kolkowska, A. Kola, I. Tessari, M.C. Baratto, M. Bisaglia, E. Monzani, L. Bubacco, S. Mangani, L. Casella, S. Dell'Acqua, D. Valensin, *Biomolecules* **2023**, *13*, 287. DOI: 10.3390/biom13020287
IF: 6.064 Citations: 5
12. E. Lo Presti, F. Schifano, C. Bacchella, L. Santagostini, L. Casella, E. Monzani, "Asymmetric Sulfoxidation by a Tyrosinase Biomimetic Dicopper Complex with a Benzimidazolyl Derivative of L-Phenylalanine", *Molecules* **2023**, *28*, 4487.
<https://doi.org/10.3390/molecules28114487> IF: 4.927 Citations: 0

• SCHOOLS AND CONFERENCES

1. CuBICS, The Copper Bioinorganic Chemistry Symposium, May 2018, Marseille, France – "β-amyloid and prion-copper complexes: redox reactivity in model membrane system" C. Bacchella, S. Dell'Acqua, E. Monzani, S. Nicolis, G. Di Natale, E. Rizzarelli, L. Casella.
2. BraYn, Brainstorming Research Assembly for Young Neuroscientists, June 2018, Genoa, Italy – "Amyloid and prion-copper complexes: redox reactivity in membrane-like environment" C. Bacchella, S. Dell'Acqua, E. Monzani, S. Nicolis, G. Di Natale, E. Rizzarelli, L. Casella.
3. National School of Bioinorganic Chemistry, Italian Chemical Society (SCI), February 2019, Rome, Italy. (School)
4. Chemistry of Metals in Biological System, May 2019, Oeiras, Portugal – "Copper redox cycling in Amyloid-β fragments: the controversial role of N-terminal amine" C. Bacchella, E. Monzani, S. Dell'Acqua, S. Nicolis, L. Casella.

5. AMYC BIOMED, Italian Chemical Society (SCI), October 2020, Virtual conference – “Dynamic nature of copper binding to amyloid- β species” C. Bacchella S. Dell’Acqua, S. Nicolis, E. Monzani, L. Casella.
6. BraYn, ^{3rd}Brainstorming Research Assembly for Young Neuroscientists, November 2020, Virtual Conference – “Dynamic interaction between copper and amyloid- β species” C. Bacchella, S. Dell’Acqua, S. Nicolis, E. Monzani, L. Casella.
7. AMYC BIOMED, Italian Chemical Society (SCI), November 2021, Virtual conference – “Dual role of N-truncated amyloid- β peptides in neurodegeneration: scavenger or promoter of oxidative stress?” C. Bacchella, S. Dell’Acqua, S. Nicolis, E. Monzani, L. Casella.
8. ICCS, ^{44th} International Conference on Coordination Chemistry, August 2022, Rimini, Italy – “An overview of Metal-Protein Interactions in Neurodegenerative Diseases” C. Bacchella, S. Dell’Acqua, S. Nicolis, E. Monzani, L. Casella.
9. AMYC BIOMED, Italian Chemical Society (SCI), October 2022, Naples, Italy – “The Biochemistry of Metal-Protein Complexes in Neurodegenerative Diseases” C. Bacchella, S. Dell’Acqua, S. Nicolis, E. Monzani, L. Casella.
10. Merck Young Chemists’ Symposium (MYCS) 2022, November 2022, Rimini, Italy – “Tau peptides and their copper-complexes: the unexplored players in Alzheimer’s disease” C. Bacchella, E. Monzani, L. Casella, M. Tegoni, S. Dell’Acqua.
11. International Symposium of Metal Complexes (ISMEC) 2023, June 2023, Urbino, Italy – “Investigating how membrane models interact with copper ions bound to neuronal protein fragments.” C. Bacchella, E. Monzani, S. Dell’Acqua, S. Nicolis, D. Valensin.

AWARDS

Best Oral Presentation Award as “Slide & Talk Communication” assigned by AMYC-BIOMED committee (SCI) during 17-19 Oct 2022, Naples and sponsored by Biosensors Journal (MDPI).

ADDITIONAL SKILLS

I and II levels User Certification in “Software LabSolution LC”, released by Shimadzu Corporation, Milano, Italy – September 2017.

Master Specialist Certification in “Vacuum technologies and pump maintenance”, released by REDIBIS, Italy in collaboration with the University of Pavia – June 2019.

Pavia, May 13th 2024

Signature

