

### *Education*

2001 PhD in Chemistry, Biochemistry, University of Zagreb, Faculty of Science  
1998 Master of Science in Chemistry, University of Zagreb Faculty of Science  
1993 Bachelor of Science in Chemistry, University of Zagreb Faculty of Science

### *Employment*

2023 - Tenured Full professor, University of Zagreb Faculty of Science  
2018 - 2023 Full professor, University of Zagreb Faculty of Science  
2012 - 2018 Associate professor, University of Zagreb Faculty of Science  
2005 - 2012 Assistant professor, University of Zagreb, Faculty of Science  
1994 - 2005 Teaching assistant, University of Zagreb, Faculty of Science

### *Scholarships and awards*

2024 Elected EMBO Member  
2014 National Science Awards of the Republic of Croatia (Annual Science Award) for an outstanding scientific discovery in the field of protein synthesis.  
2003 NATO-NSF postdoctoral fellowship  
1996 DAAD fellowship

### *Commitments at the University of Zagreb*

Head of the Biochemistry Division, Chemistry Department, University of Zagreb Faculty of Science  
Head of the Biochemistry program at the Doctoral Studies in Chemistry, University of Zagreb Faculty of Science  
Editorial Board of the *Croatica Chemica Acta*  
Vice-dean for Science, Faculty of Science University of Zagreb (2018-2020)  
Member of the Senat of the University of Zagreb (2020-2021)  
Member of the University Council in the field of Natural Sciences (2017-2021)

### *Scientific visits*

1996-1997 visit to Jasna Peter Katalinić and Franz Hillenkap labs at the University of Muenster, Germany  
2003-2004 Postdoctoral training with John J Perona; University of California at Santa Barbara, US  
2020 Visit to Dan S Tawfik lab at the Weizmann Institute of Science  
2024 Visit to Liam M Longo lab at ELSI Tokyo Institute of Technology

### *Mentorship*

PhD students – finished: Ana Crnković, Morana Dulić, Nevena Cvetešić, Mirna Biluš, Igor Živković, Vladimir Zanki – ongoing: Alojzije Brkić, Petra Kozulić

### *Teaching*

Biochemistry 1 (undergraduate course), Mechanisms of Catalysis in Biological Systems (graduate course), Enzymes: kinetics and Reaction Mechanisms (doctoral studies), Translational Quality Control (doctoral studies)

### *Memberships:*

European Molecular Biology Organization (EMBO), Croatian Society for Biochemistry and Molecular Biology, Croatian Chemical Society

### *Invited talks*

**Unexpected alteration in the signature motif of a class I aminoacyl-tRNA synthetase confers antibiotic hyper-resistance**; FEBS3+. Exploring molecular frontiers, 2024, Pula, Croatia

**Isoleucyl-tRNA synthetase: new insights into editing and antibiotic resistance mechanisms**, ELSI Seminar, 2023, Tokyo, Japan (online)

**Steady-state and pre-steady state reactions: the case of aminoacyl-tRNA synthetases**; FEBS Advanced course „Computational Approaches to Understanding and Engineering Enzyme Catalysis”, 2023, Zagreb, Croatia

**Mupirocin hyper-resistance secured by naturally altered class I signature motif**; 13th International Symposium on Aminoacyl-tRNA Synthetases, 2023, Grand Bend, Ontario, Canada.

**Isoleucyl-tRNA synthetase: from negative catalysis to antibiotic resistance**, Seminar at the Institute for Biochemistry, Leipzig University, 2022, Germany (online)

**Isoleucyl-tRNA synthetase: from negative catalysis to antibiotic resistance**, Seminar at the Newcastle University, 2022, Newcastle, UK

**Keeping translation canonical: Lessons from aminoacyl-tRNA synthetases**; The 45th FEBS Congress: Molecules of Life: Towards New Horizons, 2021, Ljubljana, Slovenia (online)

**What shaped selectivity of the class I editing domain?** 12th International Symposium on Aminoacyl-tRNA Synthetases, 2019, Hangzhou, China.

**Aminoacyl-tRNA synthetases: checkpoints of the proteinogenic amino acid alphabet**, Seminar at the Department of Biomolecular Sciences, Weizmann Institute of Science, 2018, Israel

**Crosstalk of the synthetic and editing pathways that excludes artificial amino acids from translation**, 11th International Symposium on Aminoacyl-tRNA Synthetases, 2017, Florida, US.

**Maintaining the Canonical Amino Acid Alphabet: a Story about Aminoacyl-tRNA Synthetases**, XXV Croatian meeting of chemists and chemical engineers, 2017, Poreč, Croatia.

**Synthetic and proofreading mechanisms of class I aminoacyl-tRNA synthetases**, Seminar at the TU Berlin, 2017, Germany

**Distinctive mechanisms of amino acid selection in the synthetic and editing sites of tRNA synthetases**; MiniSimposium: Advances in molecular interaction analysis, Nacional Institute of Chemistry, 2016, Ljubljana, Slovenia.

**Aminoacyl-tRNA synthetases: gatekeepers of the standard genetic code**; Workshop: The unusual suspects in neurodegeneration: Role of non proteinogenic amino acids, 2016, Leiden, Netherlands.

**Aminoacyl-tRNA synthetase editing preserves the canonical genetic code**; FEBS3+ Meeting "Molecules of Life", 2015, Portorož, Slovenia.

**Class I aaRS quality control mechanisms preserve canonical translation in *Escherichia coli***; 25th tRNA Conference 2014, Kyllini, Greece

### *Funded projects*

2024-2028 **Investigation of aminoacyl-tRNA synthetases as targets for antibiotics and how they develop resistance mechanisms** (collaboration with Nenad Ban and Jeff Errington), Funding: Croatian Science Foundation and Swiss National Science Foundation

2019-2023 **Investigation of substrate and editing specificity in tRNA synthetases and the mechanism of antibiotic action** (collaboration with Nenad Ban and Dan Tawfik), Funding: Swiss National Science Foundation and Croatian Science Foundation

2017-2021 **Aminoacyl-tRNA synthetases as gatekeepers of the standard genetic code**, Funding: Croatian Science Foundation

2018-2020 **Cellular responses to canonical and non-canonical mistranslation** (collaboration with B. Maček), Funding: Ministry of Science and Education of the Republic of Croatia and DAAD

2014-2016 **Role of translational quality control mechanisms in maintaining the functional *Escherichia coli* proteome** (collaboration with B. Maček), Funding: Ministry of Science and Education of the Republic of Croatia and DAAD

2013-2016 **Noncanonical roles of aminoacyl-tRNA synthetases**, Funding: Croatian Science Foundation

2013-2015 **The origin of amino acid specificity in editing class I aminoacyl-tRNA synthetases and cellular requirements for proofreading** (collaboration with B. Lenhard and S. Cusack), Funding: Unity Through Knowledge Fund

2008-2011 **Mechanism of proofreading by class I aminoacyl-tRNA synthetases** (collaboration with J. Perona), Funding: NIH/FIRCA