CURRICULUM VITAE

- **PERSONAL INFORMATION**

Family name, First name: TOMOIAGĂ, Raluca-Bianca

Nationality: Romanian

Affiliation: Enzymology and Applied Biocatalysis Research Center, Faculty of Chemistry and Chemical Engineering, Babeș-Bolyai University, Str. Arany János, no. 11, Cluj-Napoca, Romania
E-mail: raluca.tomoiaga@ubbcluj.ro

Webpage: Enzymology and Applied Biocatalysis

- **EDUCATION**

28 September 2020 – Current
PhD studies in Chemistry, Topic: Protein Engineering of Aromatic Ammonia-Lyases for the Synthesis of Unnatural Phenylalanine Derivatives
PhD Supervisor: Prof. Dr. Monica-Ioana TOȘA, Assoc. Prof. László Csaba BENCZE
Faculty of Chemistry and Chemical Engineering, Babeș-Bolyai University, Romania

30 September 2018 – 30 June 2020
Master's Degree, specialisation: Engineering of Organic and Biochemical Processes, top of the class (10/10)
Faculty of Chemistry and Chemical Engineering, Babeș-Bolyai University, Romania,

29 September 2014 – 04 July 2018
Bachelor's Degree, specialisation: Biochemical Engineering, top of the class (9.83/10)
Faculty of Chemistry and Chemical Engineering, Babeș-Bolyai University, Romania

- **WORK EXPERIENCE**

01 March 2024 – Current
-*assistant researcher* within project: Exploring bacterial protein-protein interactions for antibiotic research –BACPROBIO, PNRR I8, contract no 760251/28.12.2023,
Faculty of Chemistry and Chemical Engineering, Babeș-Bolyai University, Romania
Project leader: *Dr. Jürgen Brem*

07 August 2023 – Current
-*assistant researcher* within project: Advanced (multi)-enzymatic synthesis and purification processes for bio-based furan derivatives-ASPIRE, PNRR contract nr. 760042/23.05.2023, Funding source: Romanian Ministry of Research, Innovation and Digitalization; Project leader: *Prof. Dr. Anton Alexandru KISS*

01 April 2021 – 31 March 2022
- *assistant researcher* within project: Biocatalysis Engineering–Selective Magnetic nanoparticles-based Reactor Technology (BE-SMART), PN-III-P2-2.1-PED-2019-5031, Funded by: National Research Council - The Executive Agency for Higher Education, Research, Development and Innovation Funding; Project leader: *Prof. Dr. László POPPE*

01 September 2020 – 31 August 2021
- *assistant researcher* within project: MIO-enzyme toolkit for the synthesis of non-natural amino acids, PROMYS_IZ11ZO-166543/1, Funded by: Swiss National Science Foundation (SNF); Project leader: *Assoc. Prof. Dr. Csaba László BENCZE*

- **SCHOLARSHIPS AND AWARDS**

February 2024 – April 2024

Scholarships established by H.G. no. 118/2023 granted by the Romanian Ministry of Education, through the Loans and Scholarships Agency, for research internship at Institute of Chemical and Biological Technology Antonio Xavier (ITQB), Oeiras, Portugal

February 2024 – March 2024

Doctoral Advanced Scholarship, provided by the Institute of Advanced Studies in Science and Technology (STAR-UBB), Babeș-Bolyai University/Romania

October 2019 – July 2020

Special Scholarship for Scientific Activity, provided by the Institute of Advanced Studies in Science and Technology (STAR-UBB), Babeș-Bolyai University/Romania

April 2023

Poster Prize Winner, The 3rd NextGenBiocat Symposium, Graz/Austria

- **CONFERENCES and SEMINARS**

25-29 September 2023

Computational Approaches to Understanding and Engineering Enzyme Catalysis, Federation of European Biochemical Societies (FEBS) Advanced Course, Zagreb/Croatia

18 – 19 April 2023

The 3rd NextGenBiocat Symposium, Graz/Austria

22 – 24 June 2023

RomCat Conference 2022, The 13th International Symposium of the Romanian Catalysis Society, Băile Govora/Romania

03 – 07 April 2019

The XVIth International Conference Students for Students, Cluj-Napoca/Romania

- **PUBLICATIONS**
  - Tomoiaga, R.B., Ágoston, G., Boros, K., Nagy, L.C., Toşa, M.I., Paizs, C., Bencze, L.C., The Biocatalytic Potential of Aromatic Ammonia–Lyase from *Loktanella atrilutea*, ChemBioChem, **2024**, e202400011.
  - Boros, K. Gal, L., Gal, C. A., Wäscher, M., Tomoiagă, R. B., Toşa, M. I., Pietruszka, J., Bencze, L. C., Immobilization of D-amino Acid Dehydrogenase from *Ureibacillus thermosphaericus*, *Process Biochemistry*, **2024**, *140*, 45-55.
  - Tomoiagă, R.B., Ursu, M., Boros, K., Nagy, L.C., Bencze, L.C., Ancestral L-Amino Acid Oxidase: from Substrate Scope Exploration to Phenylalanine Ammonia-Lyase Assay, *Journal of Biotechnology.*, **2023**, *377*, 43-52.
  - Tomoiagă, R.B., Tork, S.D., Filip, A., Nagy, L.C., Bencze, L.C., Phenylalanine Ammonia-Lyases: Combining Protein Engineering and Natural Diversity, *Applied. Microbiology & Biotechnology*, **2023**, *107*, 1243-1256.
  - Tork, S.D., Nagy, E.Z.A., Tomoiagă, R.B., Bencze, Engineered, Scalable Production of Optically Pure L-Phenylalanines Using Phenylalanine Ammonia-Lyase from *Arabidopsis thaliana*, L.C., *Journal of Organic Chemistry*, **2022**, *88*(2), 852–862.
  - Boros K., Horváth I., Rotaru C., Tomoiagă R.B., Toșa M.I., Bencze L.C., PETase from *Ideonella sakaiensis*: towards facile bacterial expression system, *Romanian Biotechnological Letters*, **2022**, *28*(3), 3507-3516.
  - Tomoiagă, R.B.; Tork, S.D.; Horváth, I.; Filip, A.; Nagy, L.C.; Bencze, L.C., Saturation Mutagenesis for Phenylalanine Ammonia Lyases of Enhanced Catalytic Properties, *Biomolecules*, **2020**, *10*, 838.

- **WORK RELATED SKILS AND COMPETENCES**
  - *Molecular biology*: cloning techniques, site-directed/saturation mutagenesis, Polymerase Chain Reaction (PCR), gel electrophoresis (agarose), Western Blot.
  - *Protein engineering*: rational and semi-rational design (CAST-ing, ISM), high-throughput assays (UV, colorimetric, liquid/solid-phase)
  - *Protein characterization*: protein purification techniques, enzymatic kinetic studies, UV-VIS spectroscopy, Fast Protein Liquid Chromatography (FPLC), gel electrophoresis (SDS-PAGE), protein thermal shift assay (DSF/NanoDSF)
  - *Biocatalysis*: purified enzyme/whole-cells reactions, enzymatic/chemo-enzymatic cascades (aromatic ammonia-lyases, L-amino acid oxidases, D-amino acid oxidases, L-amino acid deaminases, D-amino acid dehydrogenases, glucose dehydrogenase, decarboxylases) chromatographic separation of chiral/non-chiral compounds - High Performance Liquid Chromatography (HPLC)
  - *Computational skills*: Microsoft Office, SnapGene, Pymol, MEGA-X,

- **LANGUAGE SKILLS**
  - Mother tongue: Romanian
  - Other languages: English (C1), Spanish (B2), German (A2), French (A2)

- **MEMBERSHIPS**

September 2011 – May 2014

Member - The National Red Cross Society of Romania, Baia Mare/Romania

20/08/2024