

CURRICULUM VITAE

Personal Information

Family name, First name: **BOROS KRISZTINA**

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Education

- 2021-present **PhD** – Faculty of Chemistry and Chemical Engineering, Institute for Doctoral Studies, Doctoral School of Chemistry, Babeş-Bolyai University, Romania
Main topic: Protein-engineered biocatalysts for the synthesis of D-amino acids.
PhD Supervisors: Prof. Dr. Monica Ioana Toşa and Assoc. Prof. Dr. László-Csaba Bencze
- 2019-2021 **MSc** – Faculty of Chemistry and Chemical Engineering, Babeş-Bolyai University, Romania
Specialisation: Organic and Biochemical Processes Engineering (average grade: 10.00/10, top of the class), merit scholarship
- 20015-2019 **BSc** – Faculty of Chemistry and Chemical Engineering, Babeş-Bolyai University, Romania
Specialisation: Biochemical Engineering (average grade: 9.90/10, top 5%)

Work experience

- 01.03.2024-present *assistant researcher* within research project PNRR I8, contract nr. 760251/28.12.2023, Exploring bacterial protein-protein interactions for antibiotic research – BACPROBIO (Director: Dr. Jürgen Brem), Faculty of Chemistry and Chemical Engineering, Babeş-Bolyai University, Romania
- 07.08.2023-present *assistant researcher* within research project PNRR-760042/23.05.2023, Advanced (multi)-enzymatic synthesis and purification processes for bio-based furan derivatives – ASPIRE (Director: Prof. Dr. Anton Alexandru Kiss), Faculty of Chemistry and Chemical Engineering, Babeş-Bolyai University, Romania
- 15.09.2020-15.09.2022 *assistant researcher* within research project PN-III-P1-1.1-TE-2019-2118, Rational redesign of phenylalanine ammonia-lyases for reversing their natural selectivity – RARE-PAL (Director: Assoc. Prof. Dr. László-Csaba Bencze), Faculty of Chemistry and Chemical Engineering, Babeş-Bolyai University, Romania

Scholarships and Awards

- 2022-present *Talent management scholarship* – offered through the Collegium Talentum Programme of Hungary (scholarship program supporting the professional development of young Hungarians and advancing their intellectual careers), administrated by the 'Fundatia Sapientia' organisation, funded by contributions from the Bethlen Gábor State.

- 2021 2nd place at the 35th National Scientific Students' Associations Conference (OTDK), in Biochemistry section (oral presentation)
- 2019-2020 *Special scholarship for scientific activity* – STAR-UBB Institute, Babeş-Bolyai University, Romania
- 2019 1st place at the 22nd Transylvanian Students Scientific Conference (ETDK) (oral presentation)
- 2019 Award Certificate for the best presentation in the Poster BSc section at the XVIth International Conference 'Students for Students'

Conferences and seminars

- 28.09.2023-29.09.2023 FEBS Advance Course 'Computational Approaches to Understanding and Engineering Enzyme Catalysis', Zagreb, Croatia (Poster session and 2-minute oral presentation within the event)
- 18.04.2023-19.04.2023 3rd NextGenBiocat symposium - Next Generation Biocatalysis, an International Young Investigator Symposium, Graz, Austria
- 22.06.2022-24.06.2022 13th International Symposium of the Romanian Catalysis Society - RomCat Conference 2022, Băile Govora, Romania (the conference was preceded by a Summer School 'Catalysis for Promising Future', 20-21 June 2022)
- 17.05.2021-19.05.2021 35th National Scientific Students' Associations Conference (OTDK), Biochemistry section, Budapest, Hungary
- 23.05.2019-26.05.2019 22nd Transylvanian Students Scientific Conference (ETDK), Cluj-Napoca, Romania
- 03.04.2019-07.04.2019 XVIth International Conference 'Students for Students', Cluj-Napoca, Romania

Publications

- 2024 K. Boros, L. Gal, C. A. Gal, M. Wäscher, R. B. Tomoiagă, M. I. Toşa, J. Pietruszka, L. C. Bencze. Immobilization of D-amino acid dehydrogenase from *Ureibacillus thermosphaericus*. *Process Biochem.*, **2024**, *140*, 45-55. <https://doi.org/10.1016/j.procbio.2024.02.014>
- 2023 R. B. Tomoiagă, M. Ursu, K. Boros, C. L. Nagy, L. C. Bencze. Ancestral L-amino acid oxidase: from substrate scope exploration to phenylalanine ammonia-lyase assay. *J. Biotechnol.*, **2023**, *377*, 43-52. <https://doi.org/10.1016/j.jbiotec.2023.10.006>
- 2022 K. Boros, I. Horváth, C. Rotaru, R. B. Tomoiagă, M. I. Toşa, L. C. Bencze. PETase from *Ideonella sakaiensis*: towards facile bacterial expression system. *Rom. Biotechnol. Lett.*, **2022**, *28*, 3507-3516. <https://doi.org/10.25083/rbl/28.3/3507.3516>
- 2021 K. Boros, M. E. Moisă, C. L. Nagy, C. Paizs, M. I. Toşa, L. C. Bencze. Robust, site-specifically immobilized phenylalanine ammonia-lyases for the enantioselective ammonia addition of cinnamic acids. *Catal. Sci. Technol.*, **2021**, *11*, 5553-5563. <https://doi.org/10.1039/D1CY00195G>

Job related skills

Proper knowledge in: biocatalysis, enzymology, protein and genetic engineering with *competences in:* molecular cloning, site-directed mutagenesis, directed evolution, expression and purification of enzymes, protein immobilization, enzymatic kinetic studies and *skills related to different techniques:* High Performance Liquid Chromatography (HPLC), Fast Protein Chromatography (FPLC), UV-VIS spectroscopy, gel electrophoresis (SDS-PAGE, agarose gels), Western-Blot (WB), Polymerase Chain Reaction (PCR), Differential Scanning Fluorimetry (DSF and NanoDSF).

Computer and computational skills: Microsoft Office, ChemOffice, GraphPad, PyMOL, SnapGene, Mega-X, multiple alignments and several other on-line available protein engineering related tools.

Good organizational and teamwork skills, good time management. Good communication abilities and relationship-building skills.

Language skills

Mother tongue: Hungarian; proficient user (C2) in Romanian and (C1) in English, independent user (B2) in German.

Memberships

2015-2016 active member of the faculty's students associations (Organizația Studenților Chimiești-OSC, Kolozsvári Magyar Ifjú Kémikusok Szövetsége-KOMIX)

2008-present member of the Hungarian Scout Association in Romania (Romániai Magyar Cserkészszövetség, RMCSSZ)

2024.03.01. Cluj-Napoca, Romania