

CURRICULUM VITAE

MSc. VLADENA BAUEROVÁ, PhD.

Maiden: HLINKOVÁ

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Area of the work: structural biology, molecular biology, biochemistry, biophysics, bioinformatics

H-index: 7

Position:

2018-present Senior research scientist (IIa), Department of Biochemistry and Protein Structure;

2010-2018 Researcher at the Institute of Molecular Biology, Department of Biochemistry and Protein Structure;

2006-2010 Researcher at the Institute of Molecular Biology, Slovak Academy of Sciences, Department of Department of Structural Biology;

2005-2006 Post-doctoral fellowship at the University of Western Ontario, Schulich School Medicine and Dentistry, Department of Biochemistry, London N6G 1B5, Ontario, Canada;

2003-2005 Researcher at the Institute of Molecular Biology, Slovak Academy of Sciences, Department of Structural Biology;

1999-2003 PhD student at the Institute of Molecular Biology, Department of Structural Biology;

Awards and honours:

2022 **The Prize of Slovak Academy of Sciences** awarded to the working group of Eva Kutejová „Biochemistry and protein structure“ for the building of the first research facility for automated protein crystallization in Slovakia.

2015 **The Prize of Slovak Academy of Sciences** awarded to the group for the collection of scientific publications regarding structure and function of ryanodine receptor related to the cardiac function. Group members: Ing. I. Zahradník, CSc., Ing. A. Zahradníková, DrSc., Mgr. M. Gaburjaková, PhD., Mgr. Vladena Bauerová, PhD., Ing. Jozef Sevcík, DrSc..

2005 **The Prize of Slovak Academy of Sciences** awarded to the group for structural research of ribonucleases. Group members: of Ing. Jozef Sevcík, DrSc., RNDr. Lubica Urbániková, CSc., Mgr. Vladena Hlinková, PhD., Ing. Radovan Dvorský, CSc..

Application output:

- SK patent No. 288915 entitled "Biopreparation from Exiguobacterium undae, method of production and use thereof", 02. 12. 2021; Co-inventor. TRL: 6. Main co-owner: IMB SAS

Education, fellowships:

- 2015-present** several trips to EMBL Hamburg or ESRF Grenoble for diffraction or SAXS data collection;
- 2009-2017** several daily trips to Max Perutz Laboratories, University of Vienna, Austria to perform high-throughput protein crystallization of various proteins;
- 2009** 3 months EMBO fellowship to Wales Heart Research Institute, Heath Park, Cardiff, CF14 4XN, UK; Laboratory of Prof. Dr. F.A.Lai;
- 2005-2006** Post-doctoral fellowship at the University of Western Ontario, Schulich School Medicine and Dentistry, Department of Biochemistry, London N6G 1B5, Canada; Laboratory of Prof. Dr. Hong Ling, PhD.;
- 2004** PhD. in Molecular biology, Faculty of Natural Sciences, Comenius University Bratislava, Slovakia;
- 2001** Biology Teaching Certificate for high and primary grammar schools, Faculty of Natural Sciences, Comenius University Bratislava, Slovakia;
- 1999** MSc. in Molecular biology, Faculty of Natural Sciences, Comenius University Bratislava, Slovakia;

Student supervision: MSc students: 10 (total); areas: Molecular Biology, Biochemistry, Genetics, Biotechnology;

PhD students (co-supervisor): 3 (total): areas: Molecular Biology, Microbiology;

Invited conference lectures, plenary & and other lectures, poster announcements at international events in last 5 years: over 15

Laboratory skills:

DNA cloning, bacterial cultivation, protein expression in various *E. coli* expression systems, protein purification by various chromatographic techniques (immobilised metal affinity chromatography, gel filtration, ion exchange chromatography), blotting, nanoDSF, CD-spectroscopy, various biochemical assays, protein crystallization and crystal structure determination, bioinformatics.

Computer skills:

Protein crystallographic programs for determining protein tertiary structures: CCP4 package, COOT, O, PyMol, CNS package, Microsoft Word, PowerPoint, CorelDraw, Adobe Photoshop.

Language skills:

English: fluently, C2

Russian: fluently, C2

German: intermediate, B2

Teaching experience:

since 2007: Dept. of Microbiology and Virology, Faculty of Natural Sciences Comenius University, Bratislava, within Subject "Proteomics of Human Pathogens".

since 2019: Dept. of Molecular Biology, Faculty of Natural Sciences Comenius University, Bratislava, within Subject "Modern methods in Molecular Biology".

Organizing work:

2022: Co-organizer of the **2nd StruBioMol Workshop: „Isolation, Characterization and Crystallization of Proteins“, Bratislava, IMB SAS,**

2016: Co-organizer of EMBL workshop „**EMBL opportunities for Slovak research community.**“ 25. 2. 2016, IMB SAS, Bratislava, Slovakia;

2018: Co-organizer of exhibition of International Exposition „**CRISTALES: a world to discover**“ 27. 02. – 28. 03. 2018, Aula of SAS, Patrónka, Bratislava, Slovakia.

Selected publications:

Printed books: 2

- **BAUEROVÁ-HLINKOVÁ, V., KABÁT P., BAUER, J. PROTEÍNY - ŠTRUKTÚRA A FUNKCIA. 1. DIEL: ŠTRUKTÚRA PROTEÍNOV.** Vydavateľstvo UK, Bratislava, Slovakia. 2020-09 | book, 109 p. ISBN: 978-80-223-4524-8
- **KABÁT P., BAUEROVÁ-HLINKOVÁ, V., BAUER, J. PROTEÍNY - ŠTRUKTÚRA A FUNKCIA. 2. DIEL: FUNKCIA PROTEÍNOV.** Vydavateľstvo UK, Bratislava, Slovakia. 2021-09 | book, 105 p. ISBN: 978-80-223-5094-5

Electronic books: 2

- **BAUER, J., BAUEROVÁ, V., KABÁT, P. Introduction to protein structure** [electronic source]. 1. ed. Bratislava: Veda, 2012. CD-ROM (120 s.). Title form CD-ROM. ISBN 978-80-224-1225-4.
- **BAUEROVÁ, V., BAUER, J., KABÁT, P. Úvod do štruktúry proteínov** [electronic source]. 1. ed. Bratislava: Veda, 2012. CD-ROM (120 s.). Title form CD-ROM. ISBN 978-80224-1226-1.

Book chapters: 4

- **JACOB A. BAUER AND VLADENA BAUEROVÁ-HLINKOVÁ. Extracting the Dynamic Motion of Proteins Using Normal Mode Analysis.** 2022. Methods in molecular biology (Clifton, N.J.) 2449: 213-231; In book: Data Mining Techniques for the Life Sciences (pp.213-231). DOI:10.1007/978-1-0716-2095-3_9
- **JACOB A. BAUER AND VLADENA BAUEROVÁ-HLINKOVÁ: Normal Mode Analysis: tool for better understanding protein flexibility and dynamics with application to homology models.** Homology Molecular Modeling - Perspectives and Applications. InTech, Rijeka, Croatia. Ahead of print. Doi: 10.5772/intechopen94139
- **BAUEROVA-HLINKOVA, V., BAUER, J., HOSTINOVA, E., GASPERIK, J., BECK, K.F., BORKO, L., FALTINOVA, A., ZAHRADNIKOVA, A., SEVCIK, J.: Bioinformatics Domain Structure Prediction and Homology Modeling of Human Ryanodine Receptor 2,** pp. 325-352 in Bioinformatics Trends and Methodologies. Ed. by M. A. Mahdavi. Intech, Rijeka 2011, ISBN 978-953-307-282-1
- **ONDROVIČOVÁ, G., HLINKOVÁ, V., BAUER J., KUTEJOVÁ, E.: Lon: An ATP-dependent protease with diverse (pleotropic) functions in the cell, pp.1-40 in ATP-Dependent Proteases.** Ed. by E. Kutejová, Research Signpost, Trivandrum - 695023, Kerala, India 2008, ISBN 978-81-308-0282-4

Selected scientific CC publications:

Eu3+ detects two functionally distinct luminal Ca2+ binding sites in ryanodine receptors

By: Magyar, ZE; Bauer, J; **Bauerová-Hlinková, V**; Jona, I; Gaburjakova, J; Gaburjakova, M; Almássy, J. BIOPHYSICAL JOURNAL, Volume122 Issue17 Page 3516-3531, DOI10.1016/j.bpj.2023.07.029

Comparison of Fungal Thermophilic and Mesophilic Catalase–Peroxidases for Their Antioxidative Properties.

By: Andrej Poljovka; Miloš Musil; David Bednár; Katarína Chovanová; **Vladena Bauerová-Hlinková**; Jana Bellová; Lenka Kohútová; Peter Baráth; Marcel Zámocký
ANTIOXIDANTS, 2023-07-04 | JOURNAL ARTICLE, DOI: 10.3390/ANTIOX12071382

Glucose Oxidase, an Enzyme Ferrari: Its Structure, Function, Production and Properties in the Light of Various Industrial and Biotechnological Applications.

By: Jacob Bauer; Monika Zámocká; Juraj Majtan; **Vladena Bauerová**
BIOMOLECULES, 2022-03 | Journal article | DOI: 10.3390/biom12030472

Normal Mode Analysis as a Routine Part of a Structural Investigation.

By: Jacob Bauer; **Vladena Bauerová**
MOLECULES, 2019-09-10 | Journal article, DOI: 10.3390/molecules24183293

Structure and Function of the Human Ryanodine Receptors and Their Association with Myopathies—Present State, Challenges, and Perspectives.

By: **Bauerová-Hlinková Vladena**, Hajdúchová Dominika, Jacob A. Bauer. *Molecules*. 2020-09-04 | journal-article. DOI: 10.3390/molecules25184040

Disease-associated mutations alter the dynamic motion of the N-terminal domain of the human cardiac ryanodine receptor.

By: Bauer, Jacob A.; Borko, L'ubomir; Pavlovic, Jelena; et al. *JOURNAL OF BIOMOLECULAR STRUCTURE & DYNAMICS*. 2020-03-03 | journal-article. DOI: 10.1080/07391102.2019.1600027

Residue Mutations in Murine Herpesvirus 68 Immunomodulatory Protein M3 Reveal Specific Modulation of Chemokine Binding.

By: Sebova, Radka; **Bauerova-Hlinkova, Vladena**; Beck, Konrad; et al.

FRONTIERS IN CELLULAR AND INFECTION MICROBIOLOGY Volume: 9 Article Number: 210
Published: JUN 25 2019, ISBN:

Biocleaning of historical documents: The use and characterization of bacterial enzymatic resources

By: Jeszeova, Lenka; Benzova, Radka; Glustikova, Marianna; et al.

INTERNATIONAL BIODETERIORATION & BIODEGRADATION Volume: 140 Pages: 106-112
Published: MAY 2019,

Biochemical and proteomic characterization of the extracellular enzymatic prepartate of *Exiguobacterium undae*, suitable for efficient animal glue removal

By: Jeszeova, Lenka; **Bauerova-Hlinkova, Vladena**; Barath, Peter; et al.

APPLIED MICROBIOLOGY AND BIOTECHNOLOGY Volume: 102 Issue: 15 Pages: 6525-6536
Published: AUG 2018

Structural insights into the human RyR2 N-terminal region involved in cardiac arrhythmias

By: Borko, Lubomir; **Bauerova-Hlinkova, Vladena**; Hostinova, Eva; et al.

ACTA CRYSTALLOGRAPHICA SECTION D-BIOLOGICAL CRYSTALLOGRAPHY Volume: 70
Pages: 2897-2912 Part: 11 Published: NOV 2014

Bioinformatic mapping and production of recombinant N-terminal domains of human cardiac ryanodine receptor 2

By: **Bauerova-Hlinkova, Vladena**; Hostinova, Eva; Gasperik, Juraj; et al.

PROTEIN EXPRESSION AND PURIFICATION Volume: 71 Issue: 1 Pages: 33-41 Published: MAY 2010

Structure of RNase Sa2 complexes with mononucleotides - new aspects of catalytic reaction and substrate recognition

By: **Bauerova-Hlinkova, Vladena**; Dvorsky, Radovan; Perecko, Dusan; et al.

FEBS JOURNAL Volume: 276 Issue: 15 Pages: 4156-4168 Published: AUG 2009

Structures of monomeric, dimeric and trimeric PCNA: PCNA-ring assembly and opening Associated Data

By: **Hlinkova, Vladena**; Xing, Guangxin; Bauer, Jacob; et al.

ACTA CRYSTALLOGRAPHICA SECTION D-BIOLOGICAL CRYSTALLOGRAPHY Volume: 64
Pages: 941-949 Part: 9 Published: SEP 2008

WOS/Scopus Citations: over 150