

Dr. Mindaugas Zaremba

Work Address

Vilnius University
Life Sciences Center, Institute of Biotechnology,
Department of protein-DNA interactions,
Saulėtekio av., 7, Vilnius, LT-10223, Lithuania
Tel.: +370 5 2234443
Fax: +370 5 2234357
E-mail: zare@ibt.lt

Present position:

Chief scientist at Vilnius University, Institute of Biotechnology (Vilnius)

Studies:

1995-2001 Biochemistry (Vilnius University);
2001-2005 *PhD student* (Vilnius University and Institute of Biotechnology, with prof. Virginijus Šikšnys); doctoral thesis “Structure-stability-function correlations within the tetrameric restriction endonuclease Bse634I” (2006).

Professional career:

2001-2005 *PhD student* (Institute of Biotechnology, Vilnius, Lithuania);
2005-2007 *Junior researcher* at the Laboratory of Protein-DNA Interactions, Institute of Biotechnology, Vilnius, Lithuania;
2007-2011 *Researcher* at the Laboratory of Protein-DNA Interactions, Institute of Biotechnology, Vilnius, Lithuania;
2011-2015 *Senior researcher* at the Laboratory of Protein-DNA Interactions, Vilnius University, Institute of Biotechnology, Vilnius, Lithuania;
2015- *Chief scientist* at the Department of Protein-DNA Interactions, Vilnius University, Institute of Biotechnology, Vilnius, Lithuania.

Major research interests:

Protein-DNA interactions, enzymology of nucleic acid enzymes, protein engineering, single molecule experiments, Illumina and Nanopore sequencing, restriction endonucleases, prokaryotic Argonaute proteins, CRISPR Cas9 proteins, Thoeris systems, genome targeting, off-target determination methods.

Fellowships, honors, awards:

2001 Lithuania Academy of Science Scholarship for students;
2002 International Quality Network program Scholarship to visit Justus-Liebig University (Giessen, Germany);
2003 Lithuania Academy of Science Scholarship for young scientists;
2004-2005 Scholarship for PhD students from the Lithuania State Science and Studies Foundation;
2007 Lithuanian Society of Young Researchers laureate of Award for the best dissertation;
2009 Ministry of Education and Science Scholarship for young scientists;
2010 Lithuania Academy of Science Scholarship for young scientists;

- 2015 Lithuania State Science Award (with dr. G. Tamulaitis and dr. G. Sasnauskas)
- 2016 Magazine's "Veidas" Award Mini-Nobel.

Grants:

- 2008 Lithuania State Science and Studies Foundation grant T-27/08;
- 2010 Research Council of Lithuania grant MIP-102/2010;
- 2012 Research Council of Lithuania grant MIP-029/2012;
- 2015 Research Council of Lithuania grant MIP-56/2015.
- 2017 Research Council of Lithuania grant S-MIP-17-61
- 2018 Central Project Management Agency grant 01.2.2-CPVA-K-703-02-0010
- 2020 Research Council of Lithuania grant MIP-20-37.

Visits

- 2002 Justus-Liebig University, Giessen, Germany, laboratory of prof. Alfred Pingoud (protein denaturation studies using CD spectroscopy);
- 2006 "Mass Spectrometry Workshop", Odense University, Denmark;
- 2007-2008 Vrije University, Amsterdam, The Netherlands, prof. G. Wuite laboratory (3 visits, single molecule studies of restriction enzymes using tethered particle motion (TPM) method);
- 2008 "Single Molecule Workshop", University of York, UK;
- 2012 Bristol University, UK, laboratory of prof. M. D. Szczelkun (DNA translocation studies of the NgoAVII restriction endonuclease);
- 2013 DESY synchrotron, Hamburg, Germany (SAXS measurements of the CgII and NgoAVII complexes);
- 2014 Bristol University, UK, laboratory of prof. M. D. Szczelkun (single molecule studies of the CgII and NgoAVII enzymes using magnetic tweezers).

Lecture courses

Molecular biology (RNA editing, splicing, RNA translation, RNA interference, non-coding RNA) for the 4th year biochemistry students at Vilnius University.

Protein-DNA interactions: seminars and training (protein-DNA interactions, crystal structures) for the 1th year biochemistry master students at Vilnius University.

Publications

Number 29

Patent applications

Number 2

Others

- Co-founder of biotech company MB PlatformiNA, located in Vilnius, LT that develops DNA curtains for single-molecule studies of protein-DNA interactions.
- 2007-2008 Member of Council of Lithuanian Society of Young Researchers;
- 2015-2016 Adviser of iGEM (The International Genetically Engineered Machine Competition) Vilnius team;
- 2015-2020 Scientific expert of Baltic Institute of Advanced Technology;

- 2015-2018 Member of Lithuanian Commission for Science Prizes (Lithuania Academy of Science).
- 2018-2020 Member of the Working Group on Proposals for the Development and Implementation of the Lithuanian Life Sciences Industry Promotion Policy (Ministry of the Economy and Innovation of the Republic of Lithuania)
- 2018- Member of Vilnius University Doctoral Committee in Biochemistry.
- 2019- Member of Vilnius University Master's Study Programme Committee in Biochemistry.
- 2022- Member of Vilnius University Senate.

List of patent applications

1. METHODS FOR THE IDENTIFICATION AND CHARACTERIZATION OF DOUBLE-STRAND BREAK SITES AND COMPOSITIONS AND USES THEREOF. (2018) Owners: Pioneer Hi-Bred International Inc and Vilnius university. Inventors: Stephane Deschamps, Virgis Siksnys, Joshua Young, **Mindaugas Zaremba**. U.S. Provisional Patent Application Serial No. 62/670,366 (2018)
2. Generation of restriction endonuclease triplex forming oligonucleotide conjugates with switchable activity. Owners: Institute of Biotechnology. Inventors: Virginijus Siksnys, **Mindaugas Zaremba**, Giedrius Sasnauskas, Arunas Silanskas. U.S. Provisional Patent Application Serial No. 61/522,310 (2011)