Dr. Naďa Labajová (Pavlendová)

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Research and work experiences:

Wyss Institute for Biologically Inspired Engineering at Harvard University, Boston, USA
Dana Farber Cancer Institute, Harvard Medical School

- Fulbright Scholarship, laboratory of Prof. William Shih (07/2023 – 11/2023)
- Projects: (i) optimalization of criss-cross polymerization of coordinated DNA slats for development of highly sensitive detection method, and (ii) employing large DNA-corralled nanodiscs in the study of protein complexes
- I have specifically gained experience in different areas of DNA nanotechnology, exploring its potential as a foundation for disease detection and treatment. I enhanced my skills in protein expression, purification, and analysis, in work with lipids and nanodiscs, and in electron microscopy.

Institute of Molecular Biology, Slovak Academy of Sciences, Bratislava, Slovakia

- independent researcher, Department of Microbial Genetics (since 07/2023)
- principal investigator of VEGA grant "Study and characterization of *Clostridioides difficile* Min proteins." (from 01/2022)

Institute of Science and Technology Austria (ISTA), Klosterneuburg, Austria

- EMBO Short Term Fellowship, laboratory of Dr. Martin Loose (05/2019 – 08/2019)
- SAIA Austria-Slovakia Action short term fellowship, laboratory of Dr. Martin Loose (02/2018)
- Project: Dynamics of *Clostridium difficile* Min system and its implication on cell division and sporulation
- I gained training in single-molecule imaging, TIRFM, and QCM-D and application of these methods in the study of protein dynamics

Freelance medical patent translator

- more than 80 patent translations from English to Slovak (since 2016)

Institute for Cell and Molecular Biosciences, Medical School, Newcastle University, UK

- Korner Fellowship, laboratory of Dr. Leendert Hamoen (09/2010 – 10/2010)

Institute of Molecular Biology, Slovak Academy of Sciences, Bratislava, Slovakia

- Postdoctoral researcher, laboratory of Dr. Imrich Barák (07/2010-07/2023)
- Projects focused on bacterial cell division in *Bacillus subtilis* and *Clostridium difficile*
- I developed my skills in protein expression and purification, biochemical methods suitable for characterization of protein-protein interactions and mentoring skills through supervision of undergraduate students

Institute for Cell and Molecular Biosciences, Newcastle University, UK

- Research assistant, laboratory of Dr. Leendert Hamoen (09/2009 – 03/2010)
- Maria Curie short term fellowship, laboratory of Dr. Leendert Hamoen (03/2009 – 08/2009)
- Research aimed on the examination of protein-protein interaction of *B. subtilis* essential cell division proteins FtsZ and SepF and the structure of their complex
- I acquired proficiency in a range of microbial genetics techniques, biochemical methods for detecting protein-protein interactions, and electron microscopy

Institute of Molecular Biology, Slovak Academy of Sciences, Bratislava, Slovakia

- PhD. student (08/2004 – 02/2009)
- The work was mainly focused on the study of protein-protein interactions between proteins of the Min system and the role of lipid domains in cell division *Bacillus subtilis*
- I gained experience in microbiology, microbial genetics, and fluorescence microscopy

Awards and fellowships:

2023	Fulbright Slovak Scholar Program fellowship
2022	VEGA grant, Scientific grant agency, The Ministry of Education, Science, Research and Sport of the Slovak Republic
2021	CIISB grant, Masaryk University, Czech Republic
2020	Honourable mention L'Oréal-UNESCO For Women in Science
2019	EMBO Short Term Fellowship
2018	SAIA Austria-Slovakia Action short term fellowship
2011	Schwarz Fellowship for postdoctoral researchers, Slovak Academy of Sciences
2011	Award from President of Slovak Republic
2010	Korner fellowship, UK
2009	Short-term Maria Curie Fellowship

Education:

PhD. in molecular biology: 2010
Faculty of Natural Sciences, Comenius University, Bratislava, Slovakia

Master's degree in biotechnology: 2004
Faculty of Natural Sciences, Comenius University, Bratislava, Slovakia

Bachelor's degree in biology: 2002
Faculty of Natural Sciences, Comenius University, Bratislava, Slovakia

Laboratory skills:

common methods of molecular biology and microbiology, fluorescence microscopy, confocal microscopy, TIRFM, TEM, biochemical methods and assays, protein expression, purification and analysis, DLS, QCM-D, work with liposomes and supported lipid bilayers

Languages:

English (advanced),
German (intermediate),
Czech (advanced)

PC skills:	Other skills:
MS Office, Adobe, Corel, ImageJ/Fiji, Python, GraphPad, ScadNano	active driver, technical skills, fast learner, team player, critical thinking, multitasking

Supervision:	Hobbies:
Bachelor degree students: 2 finished Master degree students: 1 finished, 1 in progress	reading books, music, playing piano and guitar, yoga, horse riding

Publications:

1. Labajová N, Baranova N, Jurásek M, Vácha R, Loose M, Barák I: Cardiolipin-containing lipid membranes attract the bacterial cell division protein DivIVA. Int J Mol Sci. 2021 Aug 3; 22(15): 8350, doi: 10.3390/ijms22158350
2. Barák I, Muchová K, Labajová N: Asymmetric cell division during *Bacillus subtilis* sporulation. Future Microbiol. 2019 Mar, doi: 10.2217/fmb-2018-0338
3. Valenčíková R, Krascsenitsová E, Labajová N, Makroczyová J, Barák I: Clostridial DivIVA and MinD interact in the absence of MinJ. Anaerobe. 2018 Apr; 50: 22-31. doi: 10.1016/j.anaerobe.2018.01.013
4. Makroczyová J, Jamroškovič J, Krascsenitsová E, Labajová N, Barák I: Oscillating behavior of *Clostridium difficile* Min proteins in Bacillus subtilis. Microbiology open. 2016 Jan 27. doi: 10.1002/mbo3.337
5. Jamroškovič J*, Pavlendová N*, Muchová K, Wilkinson AJ, Barák I: An oscillating Min system in *Bacillus subtilis* influences asymmetrical septation during sporulation. Microbiology. 2012 Aug;158(Pt 8): 1972-81. doi: 10.1099/mic.0.059295-0
6. Gündoğdu ME*, Kawai Y*, Pavlendova N*, Ogasawara N, Errington J, Scheffers DJ, Hamoen LW: Large ring polymers align FtsZ polymers for normal septum formation. EMBO J. 2011 Feb 2;30(3): 617-26. doi: 10.1038/emboj.2010.345
7. Pavlendová N, Muchová K, Barák I: Expression of Escherichia coli Min system in *Bacillus subtilis* and its effect on cell division. FEMS Microbiol Lett. 2010 Jan; 302(1): 58-68. doi: 10.1111/j.1574-6968.2009.01832.x
8. Barák I, Muchová K, Wilkinson AJ, O'Toole PJ, Pavlendová N: Lipid spirals in *Bacillus subtilis* and their role in cell division. Mol Microbiol. 2008 Jun; 68(5): 1315-27. doi: 10.1111/j.1365-2958.2008.06236.x
9. Pavlendová N, Muchová K, Barák I: Chromosome segregation in *Bacillus subtilis*. Folia Microbiol (Praha). 2007; 52(6): 563-72. doi: 10.1007/BF02932184

*These authors contributed equally.

Oral presentations at international conferences:

- Labajová, N. et al. Specific protein-lipid interactions play important role in *Clostridioides difficile* Min-system functioning. In 21st. International Conference on Bacilli and Gram-Positive Bacteria, Prague, Czech Republic (2022)
- Labajová, N. et al. The cell division protein DivIVA binds preferentially to cardiolipin-containing lipid membranes. In Subtillery, virtual international conference (2021)
- Labajová, N. et al. Clostridial Min system – possible mechanism of functioning during cell division and sporulation. In The 19th International Conference on Bacilli & Gram-Positive Bacteria, Berlin, Germany (2017)
- Pavlendová, N. et al. FtsZ dynamics under physiological conditions. In 4th European Spores Conference, Cortona, Italy (2010)

01/05/2024 Naďa Labajová