

# Curriculum Vitae

## PERSONAL INFORMATION

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**Name:** Réka Spohn  
**Date of Birth:** 14<sup>th</sup> June 1986  
**E-mail:** [spohn.reka@gmail.com](mailto:spohn.reka@gmail.com)  
**Nationality:** Hungarian



## EDUCATION AND TRAINING

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**2013 - 2019** PhD in Biology, University of Szeged, Hungary  
**2010 – 2012** MSc in Biology, University of Szeged, Hungary  
**2007 – 2010** BSc in Biology, University of Szeged, Hungary  
**2020** Training on Hamilton Robot Programming, BRC, Szeged, Hungary  
**2017** Course on Scientific Research Writing, Centre for Academic English, Imperial College London, UK  
**2014** EMBO Young Investigator PhD Course on scientific communication, EMBO, Heidelberg, Germany

## RESEARCH EXPERIENCE

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**2020 – present** Postdoctoral Research Fellow, Csaba Pál Lab, Institute of Biochemistry, Biological Research Centre (Szeged, Hungary)  
**2018 – 2020** Maternity leave  
**2013 – 2018** PhD student, Csaba Pál Lab, Institute of Biochemistry, Biological Research Centre of the Hungarian Academy of Sciences (Szeged, Hungary)  
**2012 – 2013** Research associate, Csaba Pál Lab, Institute of Biochemistry, Biological Research Center of the Hungarian Academy of Sciences (Szeged, Hungary)  
**2010 – 2012** Undergraduate student at the Department of Microbiology, University of Szeged, Hungary  
**2008 – 2010** Undergraduate student at the Department of Ecology, University of Szeged, Hungary

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## SPOKEN LANGUAGES

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English            Advanced

## SCHOLARSHIPS AND AWARDS

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- 2022            Stephen W. Kuffler Publication Award
- 2021            Róbert Bárány Award of the Eötvös Loránd Research Network, Hungary
- 2021 – 2024    Janos Bolyai Research Fellowship from the Hungarian Academy of Sciences, Hungary
- 2017            Free attendance of the EMBO-EMBL Symposium: New Approaches and Concepts in Microbiology, Germany
- 2016            Third prize at the annual Journal Club, Institute of Biochemistry, BRC, Hungary
- 2015            Second prize at the annual Journal Club, Institute of Biochemistry, BRC, Hungary
- 2014            Travel grant for the conference of the American Society for Microbiology, USA
- 2014            Second prize for the research article contest of the Qualitas Biologica Foundation, Hungary
- 2014            First prize at the annual Journal Club, Institute of Biochemistry, BRC, Hungary

## CONFERENCE ATTENDANCE

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- 2021            Poster presentation at EMBO-EMBL Symposium: New Approaches and Concepts in Microbiology, Heidelberg, Germany
- 2017            Poster presentation at the 7th International Meeting on Antimicrobial Peptides, Copenhagen, Denmark
- 2017            Poster presentation at EMBO-EMBL Symposium: New Approaches and Concepts in Microbiology, Heidelberg, Germany

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- 2015 Poster presentation at the annual meeting of the Society for Molecular Biology and Evolution, Vienna, Austria
- 2015 Poster presentation at Gordon Research Seminar and Conference on Antimicrobial Peptides, Lucca (Barga), Italy
- 2014 Participation at EMBO Young Investigator PhD Course on scientific communication, Heidelberg, Germany
- 2014 Poster presentation at the 1st Conference of the American Society for Microbiology on Experimental Microbial Evolution, Washington, USA
- 2013 Poster presentation at EMBO-EMBL Symposium: New Approaches and Concepts in Microbiology, Heidelberg, Germany
- 2013 Poster presentation at the FEMS 5th Congress of European Microbiologists, Leipzig, Germany
- 2013 Oral presentation at the Hungarian Molecular Life Sciences Conference, Siófok, Hungary

## PUBLICATIONS

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- 2021 Bhaumik, K. N., Hetenyi, A., Olajos, G., Martins, A., **Spohn, R.**, Nemeth, L., Jojart, B., Szili, P., Dunai, A., Jangir, P. K., Daruka, L., Foldesi, I., Kata, D., Pál, C., Martinek, T. A. (2021) *Rationally designed foldameric adjuvants enhance antibiotic efficacy via promoting membrane hyperpolarization* Mol Syst Des Eng
- 2019 Kintses, B., Jangir, PK., Fekete, G., Számel, M., Méhi, O., **Spohn, R.**, Daruka, L., Martins, A., Hosseinnia, A., Gagarinova, A., Kim, S., Phanse, S., Csörgő, B., Györkei, Á., Ari, E., Lázár, V., Nagy, I., Babu, M., Pál, C., Papp, B. (2019) *Chemical-genetic profiling reveals limited cross-resistance between antimicrobial peptides with different modes of action* Nat Commun
- 2019 **Spohn, R.\***, Daruka, L.\*, Lázár, V., Martins, A., Vidovics, F., Grézal, G., Méhi, O., Kintses, B., Számel, M., Jangir, PK., Csörgő, B., Györkei, Á., Bódi, Z., Faragó, A., Bodai, L., Földesi, I., Kata, D., Maróti, G., Pap, B., Wirth, R., Papp, B., Pál, C. (2019) *Integrated evolutionary analysis reveals antimicrobial peptides with limited resistance* Nat Commun  
\* These authors contributed equally to this work.
- 2019 Dunai, A.\*, **Spohn, R.\***, Farkas, Z.\*, Lázár, V., Györkei, Á., Apjok, G., Boross, G., Szappanos, B., Grézal, G., Faragó, A., Bodai, L., Papp, B., Pál, C. (2019) *Rapid decline of bacterial drug-resistance in an antibiotic-free environment through phenotypic reversion* Elife  
\* These authors contributed equally to this work.

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- 2019 Szili, P., Draskovits, G., Révész, T., Bogar, F., Balogh, D., Martinek, T., Daruka, L., **Spohn, R.**, Vásárhelyi, BM., Czikkely, M., Kintsés, B., Grézal, G., Ferenc, G., Pál, C., Nyerges, Á. (2019) *Rapid evolution of reduced susceptibility against a balanced dual-targeting antibiotic through stepping-stone mutations* Antimicrob. Agents Chemother.
- 2018 Lázár, V., Martins, A., **Spohn, R.**, Daruka, L., Grézal, G., Fekete, G., Számel, M., Jangir, P.K., Kintsés, B., Csörgő, B., Nyerges, Á, Györkei, Á., Kincses, A., Dér, A., Walter, F.R., Deli, M.A., Urbán, E., Hegedűs, Z., Olajos G., Méhi, O., Bálint, B., Nagy, I., Martinek, T. A., Papp B., Pál C. (2018) *Antibiotic-resistant bacteria show widespread collateral sensitivity to antimicrobial peptides* Nat Microbiol
- 2014 Notebaart, RA, Szappanos, B, Kintsés, B, Pál, F, Györkei, Á, Bogos, B, Lázár, V, **Spohn, R.**, Csörgő, B, Wagner, A, Ruppín, E, Pál, C, Papp, B (2014) *Network-level architecture and the evolutionary potential of underground metabolism* PNAS
- 2014 Lázár, V\*, Nagy, I\*, **Spohn, R\***, Csörgő, B, Györkei, A, Nyerges, Á, Horváth, B, Vörös, A, Busa-Fekete, R, Hrtyan, M, Bogos, B, Méhi, O, Fekete, G, Szappanos, B, Kégl, B, Papp, B, Pál, C (2014) *Genome-wide analysis captures the determinants of the antibiotic cross-resistance interaction network* Nat Commun  
\* These authors contributed equally to this work.
- 2013 Lázár, V, Singh, G P, **Spohn, R.** Nagy, I, Horváth, B, Hrtyan, M, Busa-Fekete, R, Bogos, B, Méhi, O, Csörgő, B, Pósfai, G, Fekete, G, Szappanos, B, Kégl, B, Papp, B, Pál, C (2013) *Bacterial evolution of antibiotic hypersensitivity* Mol Syst Biol

## SCIENCE PROMOTION

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- 2020 Researchers' Night, BRC, Hungary
- 2013 Researchers' Night, BRC, Hungary

## SCIENTIFIC INTEREST

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I have started university with a strong interest in ecology, but my interest soon turned towards the field of antibiotic resistance. Antibiotic resistance is a puzzling problem. Researchers of the field have been ringing the alarm for years of the global health threat posed by the spread of multidrug resistant superbugs. However, the solution still seems distant and unclear. Overcoming antimicrobial resistance depends on several areas of research from improving early diagnostics of bacterial infections, through rationalized application of

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antibiotics and the development of novel, effective, resistance-proof antimicrobial compounds. Developing resistance-proof novel antibiotics is of crucial importance as the development of antibiotics is immensely time-consuming and expensive, while resistance usually emerges and spreads fast. In my research I am working on two different approaches towards developing resistance-proof antibiotics. On one hand, through the systematic investigation of how resistance emerges, my aim is to understand resistance evolution and identify potential resistance-proof antimicrobial mechanisms that could be utilized in antibiotic development. On the other hand, by including novel antimicrobial compounds in our systematic screens, our aim is to draw the attention of antibiotic developers on potential pitfalls and avoid the fast emergence of resistance to novel compounds. Besides my research I also feel more and more responsible for promoting the conscious use of antibiotics, another pillar of overcoming the antimicrobial resistance crisis, and being more involved in science communication.