

## GERGŐ PORKOLÁB



National Academy of Scientist Education, 4<sup>th</sup> Ph.D. year

University of Szeged,  
Doctoral School of Biology, 4<sup>th</sup> year

### YEAR OF BIRTH

1996

### FORMER SZENT-GYÖRGYI PUPIL

no

### RESEARCH UNIT

University of Szeged

### SZENT-GYÖRGYI MENTOR

Mária Deli

### RESEARCH INTERESTS

cell biology,  
blood-brain barrier

### UNIVERSITY DEGREE

MSc in Biology

### AS A SZENT-GYÖRGYI STUDENT

Former Szent-Györgyi  
mentor: Mária Deli  
Former Szent-Györgyi  
Junior mentor Szilvia  
Veszelka

### SECONDARY SCHOOL

Tömörkény István  
Secondary School

### NAME OF TEACHER

Ildikó Vadászné Horváth

### LANGUAGES

English/advanced

### BACKGROUND, AIMS AND POSSIBLE OUTCOME OF RESEARCH

The main goal of our research is to develop a novel drug delivery system that is capable of transporting therapeutics across the blood-brain barrier (BBB). We load the drugs into nanoparticles, which are targeted to the BBB by special molecules on their surfaces. These targeting molecules are recognised by the BBB and the drug-loaded nanoparticles – like „molecular Trojan horses – are able to enter the brain. We are also interested in developing novel, human cell-based models that enable us to investigate the interactions of nanoparticles with the BBB, as well as the healthy and diseased brain.

### AMBITIONS AND CAREER GOALS

As a researcher, I would like to focus on and find solutions to relevant basic scientific problems that can potentially improve people's lives in the future.

### HONORS AND PRIZES

- 2020 New National Excellence Program scholarship for the academic year of 2020/21
- 2020 Excellent Student of the Faculty Prize, Faculty of Science and Informatics, University of Szeged
- 2020 SZTE József Sóni Foundation Scholarship, „Whole University” category – grand prize
- 2019 Student of the Year Prize, National Scientists Academy
- 2019 New National Excellence Program scholarship for the academic year of 2019/20
- 2019 Stephen W. Kuffler Research Fellowship
- 2019 SZTE József Sóni Foundation Scholarship, Biology MSc category – 1<sup>st</sup> prize

### PUBLICATIONS

Topal, G.R, Mészáros, M., **Porkoláb, G.**, Szecskó, A., Polgár, T.F, Siklós, L., Deli, M.A, Veszelka, S., Bozkir, A. (2020) ApoE-Targeting Increases the Transfer of Solid Lipid Nanoparticles with Donepezil Cargo across a Culture Model of the Blood-Brain Barrier. **Pharmaceutics 13**: 38.

**Porkoláb, G.**, Mészáros, M., Tóth, A., Szecskó, A., Harazin, A., Szegletes, Z., Ferenc, G., Blastyák, A., Mátés, L., Rákhely, G., Deli, M.A., Veszelka, S. (2020) Combination of Alanine and Glutathione as Targeting Ligands of Nanoparticles Enhances Cargo Delivery into the Cells of the Neurovascular Unit. **Pharmaceutics 12**: 635.

Mészáros, M., **Porkoláb, G.**, Kiss, L., Pilbat, A.M., Kóta, Z., Kupihár, Z., Kéri, A., Galbács, G., Siklós, L., Tóth, A., Fülöp, L., Csete, M., Sipos, Á., Hülpér, P., Sipos, P., Páli, T., Rákhely, G., Szabó-Révész, P., Deli, MA., Veszelka, S. (2018) Niosomes decorated with dual ligands targeting brain endothelial transporters increase cargo penetration across the blood-brain barrier. **Eur J Pharm Sci 123**: 228-240.