# CURRICULUM VITAE

## PERSONAL INFORMATION:

Name: Rita Frank

Date of birth: 19/10/1993

Telephone: +36-30/486-1483

E-mail: ritafrank993@gmail.com

Citizenship: Hungarian

MTMT ID: 10073629

## POSITION

2022-: assistant professor

Department of Cell Biology and Molecular Medicine, University of Szeged, Hungary

## EDUCATION/DEGREES:

2017-2021: Doctoral School of Theoretical Medicine, Department of Medical Physics and Informatics, Faculty of Medicine, University of Szeged, Hungary

2015-2017: Biology MSc. Faculty of Science and Informatics, University of Szeged, Hungary

2012-2015: Biology BSc. Faculty of Science and Informatics, University of Szeged, Hungary

2008-2012: Deák Ferenc Bilingual High School, Szeged, Hungary

## LANGUAGE SKILLS:

English (intermediate, B2)

Italian (intermediate, B2)

## SCIENTIFIC AWARDS / SCHOLARSHIPS

2022. Stephen W. Kuffler Scholarship

2021. Science Patronage Scholarship

2021. “Fund for Science in the Southern Great Plain” award, Szeged Regional Committee of the Hungarian Academy of Sciences, Third Prize

2020. New National Excellence Program scholarship

2019. New National Excellence Program scholarship

2018. Hungarian Physiological Society award for the best poster presentation

2017-2019. EFOP-3.6.3-VEKOP-16-2017-00009 scholarship for PhD students

2017. Honor of the Dean of the Faculty of Science and Informatics

2017. XXXIII. National Student Research Conference, Biology Section, Third prize

2016. Student Research Conference, Physiology/Pathophysiology Section, Special award

2016. Student Research Conference, Biology Section, Third prize

2016-2017. Scholarship of the City of Szeged

2015-2016. Scholarship for undergraduate students

## PUBLICATIONS:

1. **Comparative analysis of spreading depolarizations in brain slices exposed to osmotic or metabolic stress** Rita Frank, Ferenc Bari, Ákos Menyhárt, Eszter Farkas BMC Neurosci. 2021 May 3;22(1):33. doi: 10.1186/s12868-021-00637-0.

2. **Malignant astrocyte swelling and impaired glutamate clearance drive the expansion of injurious spreading depolarization foci.** Menyhárt Á, Frank R, Farkas AE, Süle Z, Varga VÉ, Nyúl-Tóth Á, Meiller A, Ivánkovits-Kiss O, Lemale CL, Szabó Í, Tóth R, Zölei-Szénási D, Woitzik J, Marinesco S, Krizbai IA, Bari F, Dreier JP, Farkas E. J Cereb Blood Flow Metab. 2021 Aug 24:271678X211040056. doi: 10.1177/0271678X211040056.

3. **N,N-Dimethyltryptamine attenuates spreading depolarization and restrains neurodegeneration by sigma-1 receptor activation in the ischemic rat brain.** Szabó Í, Varga VÉ, Dvorácskó S, Farkas AE, Körmöczi T, Berkecz R, Kecskés S, Menyhárt Á, Frank R, Hantosi D, Cozzi NV, Frecska E, Tömböly C, Krizbai IA, Bari F, Farkas E. Neuropharmacology. 2021 Jul 1;192:108612. doi: 10.1016/j.neuropharm.2021.108612.

4. **Tissue Acidosis Associated with Ischemic Stroke to Guide Neuroprotective Drug Delivery** Orsolya M Tóth, Ákos Menyhárt, Rita Frank, Dóra Hantosi, Eszter Farkas, Ferenc Bari, Biology (Basel) 2020 Dec 11;9(12):460. doi: 10.3390/biology9120460.

5. **The impact of dihydropyridine derivatives on the cerebral blood flow response to somatosensory stimulation and spreading depolarization in the intact and ischemic rat cerebral cortex** Írisz Szabó, Orsolya M. Tóth, Zsolt Török, Dániel Péter Varga, Ákos Menyhárt, Rita Frank, Dóra Hantosi, Ákos Hunya, Ibolya Horváth, Ferenc Bari, László Vigh, Eszter Farkas, Br J Pharmacol. 2019 Feb 9. doi: 10.1111/bph.14611.

6. **Large-conductance $Ca^{2+}$-activated potassium channels are potently involved in the inverse neurovascular response to spreading depolarization**, Menyhárt Á, Farkas AE, Varga DP, Frank R, Tóth R, Bálint AR, Makra P, Dreier JP, Bari F, Krizbai IA, Farkas E., Neurobiol Dis. 2018 Nov;119:41-52. doi: 10.1016/j.nbd.2018.07.026.

7. **Acetyl-L-Carnitine restores synaptic transmission and LTP-inducibility after oxygen-glucose deprivation** , Kitti Kocsis, Rita Frank, József Szabó, Levente Knapp, Zsolt Kis, Tamás Farkas, László Vécsei and József Toldi, Neuroscience. 2016 Sep 22;332:203-11. doi: 10.1016/j.neuroscience.2016.06.046

## CONFERENCE ATTENDANCE

2021. International Conference on Spreading Depolarizations (iCSD), online*

2021. International Astrocyte School, online*

2019. International Conference on Spreading Depolarizations, iCSD, COSBID, Yokohama, Japan

2019. Joint Conference of the Hungarian Pharmacology, Anatomy, Microcirculation and Physiological Societies, Budapest, Hungary

2019. 2nd RECOOP—FKSD International Student Conference, Bratislava, Slovakia

2019. 16th Meeting of the Hungarian Neuroscience Society, MITT, Debrecen, Hungary

2018. 50th Anniversary Annual Scientific Meeting, HMAA. Sandcastle Resort at Lido Beach, Sarasota, Florida, USA

2018. International Conference on Spreading Depolarizations, iCSD 2018-COSBID, Boca Raton, Florida, USA

2018. 21st International Symposium on "Signal Transduction at the Blood-Brain Barriers", Arad, Romania

2018. International Astrocyte School, Bertinoro, Italy

2018. Meeting of the Hungarian Physiological Society, Szeged, Hungary

2017. XXXIII. National Student Research Conference, Debrecen, Hungary*

2016. Student Research Conference, Physiology/Pathophysiology, Szeged, Hungary*

2016. Student Research Conference, Szeged, Hungary*

2016. József Sófi Scholarship Conference, Szeged, Hungary*

2015. Kynurenine Roundtable Meeting, Szeged, Hungary

*presenter

## POSTER PRESENTATIONS:

2020. IBRO Workshop, Szeged, Hungary

2020. 4$^{th}$ Hungarian Neuroscience Doctoral Conference, Szeged Hungary

2019. BRAIN & BRAIN PET 2019 Yokohama, Japan

2019. Joint Conference of the Hungarian Pharmacology, Anatomy, Microcirculation and Physiological Societies, Budapest, Hungary

2019. 2nd RECOOP—FKSD International Student Conference, Bratislava, Slovakia

2019. 16th Meeting of the Hungarian Neuroscience Society, MITT, Debrecen, Hungary

2018. Society for Neuroscience Annual Meeting, San Diego, USA

2018. Meeting of the Hungarian Physiological Society, Szeged, Hungary

## TEACHING ACTIVITY:

2021- Cell and Tissue Cultures laboratory practice

2021- Cell Biology practice

2018-2020. Medical Physics practice

## SUPERVISION OF UNDERGRADUTAE STUDENTS:

2022- Anna Zsigmond

2022- Farnaz Jafarian

2021-2022 Danny Baum

2019- Péter Archibald Szarvas

## RESEARCH INTEREST:

I have had the great opportunity to be a member of the Cerebral Blood Flow and Metabolism Research Group for more than six years now. Our ongoing research focuses on ischemic stroke. The development of effective strategies to limit the progression of secondary injury is of fundamental importance to improve the prospect of successful recovery. As a first step, it is essential to recognize distinct injurious phenomena that evolve over the subacute and chronic phases of ischemic brain injury (e.g. brain edema, vasospasm, oxidative stress, excitotoxicity). The main aim of our research is to reveal the cellular mechanisms of edema evolution after stroke in order to find new targets to improve stroke recovery. We hypothesize that exploring the underlying mechanisms of ischemic injury will lead to potential neuroprotective therapy. Recognizing the early cellular events of brain swelling offers the opportunity for personalized, timely intervention in order to prevent serious cerebral edema formation and the consequential drastic neurosurgical procedures.