LEVENTE FRIGYES GULÁCSI

National Academy of Scientist Education, 6th year

University of Szeged
Szent-Györgyi Albert Medical School, 6th year

YEAR OF BIRTH

1997

FORMER SZENT-GYÖRGYI PUPIL

no

RESEARCH UNIT

University of Szeged

SZENT-GYÖRGYI MENTOR

József Kaszaki

JUNIOR MENTOR

Attila Rutai

SPECIALIZATION

pathophysiology, Intensive therapy

SECONDARY SCHOOL

Krúdy Gyula Secondary Schcool

NAME OF TEACHER

Tibor Gergely

LANGUAGES

English/intermediate

IMPORTANCE, AIMS AND POSSIBLE OUTCOME OF RESEARCH

During the hyperinflammatory immune response to infection, neutrophil granulocytes are activated and form neutrophil extracellular traps (NETs) composed of DNA, histones and proteases, which are used to eliminate pathogens by trapping them. At the same time, NETs can contribute to the tissue and organ damage that are characteristics of sepsis, by causing blood clotting disorders and thrombosis. Our goal is to investigate the process and therapeutic implications of neutrophil granulocyte activation and NET formation using in vitro cell lines and in vivo clinically relevant animal models. It is hypothesized that exogenous methane therapy, identified as an anti-inflammatory and organ protective bioactive agent, may have a beneficial effect on NET formation.

AMBITIONS AND CAREER GOALS

My research's main goal is to gain a more detailed immunopathological understanding of the pathogenesis of sepsis. In particular, I plan to investigate the process of neutrophil extracellular trap (NET) formation associated with neutrophil granulocyte activation during the hyperinflammatory immune response and the possibilities to influence their therapeutic potential usage in in vitro cell lines and in vivo clinically relevant animal models. My long-term goal as a research physician is to achieve clinical translation of preclinical results.

HONORS AND PRIZES

2022 University of Szeged: Scientific Students' Associations Conference (TDK) - 1. prize
2022 NNEP (New National Excellence Programme) scholarship
2021 University of Szeged: Scientific Students' Associations Conference (TDK) - 1. prize

PUBLICATIONS

Poles, M. Z., Nászai, A., **Gulácsi, L.**, Czakó, B. L., Gál, K. K., Glenz, R. J., Dookhun, D., Rutai, A., Tallósy, S. P., Szabó, A., Lőrinczi, B., Szatmári, I., Fülöp, F., Vécsei, L., Boros, M., Juhász, L., Kaszaki, J. (2021) Kynurenic Acid and Its Synthetic Derivatives Protect Against Sepsis-Associated Neutrophil Activation and Brain Mitochondrial Dysfunction in Rats. **Front Immunol 12:** 717157.