LEVENTE SZOLYKA

National Academy of Scientist Education, 2nd year

University of Debrecen
Faculty of Medicine, 2nd year

YEAR OF BIRTH:

2004

FORMER SZENT-GYÖRGYI PUPIL:

no

SZENT-GYÖRGYI MENTOR:

György Vámosi

JUNIOR MENTOR:

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SPECIALIZATION:

cell biophysics,
cell biology,
cell signaling

SECONDARY SCHOOL:

Szent Miklós High School and College, Nyíregyháza

NAME OF TEACHER:

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LANGUAGES:

German/intermediate

IMPORTANCE, AIMS AND POSSIBLE OUTCOME OF RESEARCH

The dipole potential is an electrostatic potential that results from the dipole moment of the membrane molecules and their associated water molecules. This electrical property may strongly influence the conformation of membrane proteins. Its value can change with the composition of the membrane. Metabolic diseases such as Gaucher's disease and SLO syndrome can disturb the lipid homeostasis of the body, leading to changes in the composition of the plasma membrane and causing immunological symptoms, too. Interleukin-2 (IL-2) and its receptor (IL-2R) play a key role in regulating the immune system. They are essential for the division and differentiation of T cells, and therefore play a significant role in the development of various diseases, including multiple sclerosis and T-cell leukaemia. The aim of this research is to perform biophysical measurements to establish a correlation between changes in dipole potential and IL-2R signalling. This will provide a deeper understanding of the relationship between lipid metabolism and immune-related diseases.

AMBITIONS AND CAREER GOALS

My future plans are to graduate from the general medical program while participating in the MD-PhD program. After completing my specialist training in internal medicine, I plan to conduct research in addition to clinical practice. I believe that a strong scientific background is essential for providing proper patient care. I also believe that translational medicine is particularly important. The translation of basic research findings into clinical practice can lead to breakthroughs in disease treatment, providing opportunities for more accurate diagnoses and more effective therapies.

HONORS AND PRIZES

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PUBLICATIONS

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