

KATA VÁRADI



National Academy of Scientist Education, 3rd year

University of Pécs,
Medical School, 3rd year

YEAR OF BIRTH

2001

FORMER SZENT-GYÖRGYI PUPIL

no

RESEARCH UNIT

University of Pécs

SZENT-GYÖRGYI MENTOR

Péter Balogh

JUNIOR MENTOR

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SPECIALIZATION

immunology,
developmental biology,
morphology

SECONDARY SCHOOL

Illyés Gyula High School,
Vocational High School and
Technical School, Budaörs

NAME OF TEACHER

Ágota Gruberné Szilágyi

LANGUAGES

English/advanced
French/intermediate

IMPORTANCE, AIMS AND POSSIBLE OUTCOME OF RESEARCH

Nkx2-3 is a homeodomain transcription factor that plays a crucial role in the normal ontogeny of, among others, small intestinal lymphoid tissues and the spleen. In mice, the targeted deficiency of Nkx2-3 causes morphological abnormalities, with the mutant spleen being smaller and irregular in structure. In particular, alterations in the vascular pattern of the red pulp and marginal zone and the appearance of ectopic HEV-like PNAd-positive postcapillary venules and LYVE-1/Prox1-positive lymphatic vessels are observed. It is not known at present in which vascular patterning cells the alterations are present, and the role of ectopic lymphatic vessels in the lymphocyte migration of the mutant spleen is also unknown. The aim of this study is to characterize the process of lymphocyte migration in the spleens of Nkx2-3-deficient mice and to investigate the limitation of Nkx2-3 deficiency to endothelial cells.

AMBITIONS AND CAREER GOALS

The science of today is the magic of yesterday, and the magic of today can be the science of tomorrow. And with the right skills, knowledge and tools, yesterday's idea can become tomorrow's discovery.

My goal as an undergraduate researcher is to get a closer look at the workings of the human as an extremely complex - and incredibly precise - biological system. I believe that by unravelling the precise molecular mechanisms of the 'human machine', I can contribute to the advancement of medicine and to a better understanding of our fellow human beings. I would like to make discoveries that can be passed on to future generations in the form of general knowledge, and from which they can generate their ideas themselves.

HONORS AND PRIZES

- 2024 Excellent Student Prize - University of Pécs, Medical School, Department of Behavioural Sciences
- 2022 Honorary Award, Budaörsi Illyés Gyula High School
- 2021 Innovation Award, Budaörsi Illyés Gyula High School

PUBLICATIONS

Barabás, K., Makkai, B., Farkas, N., Horváth, H. R., Nagy, Z., Váradi, K., Zelena, D. (2022) Influence of COVID-19 pandemic and vaccination on the menstrual cycle: A retrospective study in Hungary. *Front Endocrinol.* **13**: 974788.