ANNA HEGYI

National Scientists Academy, 2nd year

University of Szeged,
Albert Szent-Györgyi Medical School, 2nd year

YEAR OF BIRTH:

2001

FORMER SZENT-GYÖRGYI PUPIL:

no

SZENT-GYÖRGYI MENTOR:

Mária Deli

JUNIOR MENTOR:

Szilvia Veszelka

SPECIALIZATION:

cell biology, pharmacology

SECONDARY SCHOOL:

Radnóti Miklós Experimental Grammar School, Szeged

NAME OF TEACHER:

Viktória Gál

LANGUAGES:

English/advanced

IMPORTANCE, AIMS AND POSSIBLE OUTCOME OF RESEARCH

In several diseases the targeted delivery of large protein cargo at therapeutically relevant concentrations is difficult due to their poor penetration across biological barriers. These barriers protect organisms from damaging agents and create homeostasis for physiological functions. The Biological Barriers Research group has an expertise in modelling and studying the epithelium of the intestinal or respiratory systems and the endothelium of blood vessels. The goal of our team is to investigate different peptide constructs to enhance the penetration of high molecular weight drugs across different biological barriers using co-culture models. In these experiments, we study the viability of the cells, the integrity and the barrier functions of the cell layers, the morphological changes of tight junction proteins and the penetration of fluorescently labeled peptide constructs. In our latest studies, we got promising results with a pentapeptide sequence which can deliver large proteins into different cell types via endocytosis. Our aim is to achieve specific targeting of biological barriers with a short, easily applied and nontoxic peptide tag which can not only facilitate the endocytosis of the protein cargo in a carrier/receptor triggered manner but also act as a shuttle for biopharmaceutics.

AMBITIONS AND CAREER GOALS

In my research, I would investigate methods by which I can broaden my knowledge about drug delivery trough barriers, thereby contributing to more effective treatment of various diseases. I consider it important to be able to align scientific research with clinical practice throughout my career because I believe both are essential areas for my future results.

HONORS AND PRIZES

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PUBLICATIONS

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