VIKTÓRIA VENGLOVECZ

University of Szeged
Albert Szent-Györgyi Medical School
Department of Pharmacology and Pharmacotherapy

Address: Dóm tér 12., H-6720 Szeged, Hungary

RESEARCH AREA

Disruption of epithelial ion transport plays a central role in the development of many diseases, such as cystic fibrosis or diarrhea. Research in recent years has shown that altered ion transport processes are also involved in the pathomechanism of inflammatory or cancerous diseases of the esophagus (eg Barrett's esophagus or esophageal adenocarcinoma), although their role is not fully clarified. The incidence of esophageal diseases is increasing worldwide, placing a huge and costly burden on health-care systems. However, the pathomechanism of these diseases is largely unknown, which makes it difficult to develop effective therapies. The goal of our working group is to investigate the role of ion transport processes in the development and progression of esophageal diseases and to identify novel therapeutic targets that can be a promising starting point in the treatment of these diseases.

TECHNIQUES AVAILABLE IN THE LAB

Isolation of primary esophageal epithelial cells, establishment of organoid cultures and cell culture methods. Confocal and fluorescent microscopy (intracellular pH and Ca2+ measurements), functional and morphological examination of mitochondria, patch clamp technique. Molecular biological methods such as immunofluorescence staining, conventional and real-time PCR, Western blot, different cell assays (proliferation, migration, adhesion, cytotoxicity assay) and histological examinations.

SELECTED PUBLICATIONS

Korsós, MM., Bellák, T., Becskeházi, E., Gál, E., Veréb, Z., Hegyi, P., **Venglovecz, V.** (2021) *Mouse organoid culture is a suitable model to study esophageal ion transport mechanisms.* **Am. J. Physiol-Cell Physiol. 321:** C798-C811.

Becskeházi, E., Korsós, MM., Gál, E., Tiszlavicz, L., Hoyk, Zs., Deli, MA., Köhler, ZM., Keller-Pintér, A., Horváth, A., Csekő, K., Helyes, Zs., Hegyi, P., **Venglovecz, V.** (2021) *Inhibition of NHE-1 increases smoke-induced proliferative activity of Barrett's esophageal cell line.* **Int. J. Mol. Sci. 22:** 1058

Becskeházi, E., Korsós, MM., Erőss, B., Hegyi, P., **Venglovecz, V.** (2020) *Oesophageal ion transport mechanisms and significance under pathological conditions.* **Front Physiol. 11:** 855

Laczkó, D., Rosztóczy, A., Birkás, K., Katona, M., Rakonczay, Z. Jr., Tiszlavicz, L., Róka, R., Wittmann, T., Hegyi, P., **Venglovecz, V.** (2016) *Role of ion transporters in the bile acid-induced esophageal injury.* **Am J Physiol Gastrointest Liver Physiol. 311:** G16-31.