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RESEARCH AREA

The gastrointestinal (GI) mucosa is constantly exposed to a wide variety of luminal aggressors, including gastric acid, pepsin, bile acids and bacterial components. In order to withstand these damaging factors and maintain the integrity of mucosal barrier, several physical and chemical defense mechanisms interact in a complex manner. Numerous conditions can lead to GI ulcers by directly damaging the epithelial cells and/or by disrupting the delicate balance between aggressive and defensive factors. Our previous studies focused mainly on the pathogenesis of gastric ulcers, whereas our recent projects aim to characterize the pathogenesis of small intestinal injury (enteropathy) caused by nonsteroidal anti-inflammatory drugs (NSAIDs) or by ischemia/reperfusion. One of our main interests is to analyze the NSAID-induced changes in intestinal bacteria and bile acids, and to identify the factors contributing to alterations of the microbiota. We also aim to identify novel therapeutic options for the treatment of enteropathy.

TECHNIQUES AVAILABLE IN THE LAB

A wide range of in vivo and in vitro techniques, including
- treatment of conscious animals (rats and mice),
- various surgical procedures on anesthetized animals and analysis of intestinal blood flow with laser speckle contrast analysis (LASCA),
- immunohistological analysis of tissue samples,
- western blotting, qPCR, ELISA and other molecular biological techniques.

SELECTED PUBLICATIONS

Hutka, B., Várallyay, A., László, S.B., Tóth, A.S., Scheich, B., Paku, S., Vörös, I., Pós, Z., Varga, Z.V., Norman, D.D., Balogh, A., Benyó, Z., Tigyi, G., Gyires, K., **Zádori, Z.S.** (2024) A dual role of lysophosphatidic acid type 2 receptor (LPAR2) in nonsteroidal anti-inflammatory drug-induced mouse enteropathy. **Acta Pharmacologica Sinica 45:** 339-353.

Zádori, Z.S., Király, K., Al-Khrasani, M., Gyires, K. (2023) Interactions between NSAIDs, opioids and the gut microbiota - Future perspectives in the management of inflammation and pain. **Pharmacology & Therapeutics 241:** 108327.

Hutka, B., Lázár, B., Tóth, A.S., Ágg, B., László, S.B., Makra, N., Ligeti, B., Scheich, B., Király, K., Al-Khrasani, M., Szabo, D., Ferdinandy, P., Gyires, K., **Zádori, Z.S.** (2021) The nonsteroidal anti-inflammatory drug ketorolac alters the small intestinal microbiota and bile acids without inducing intestinal damage or delaying peristalsis in the rat. **Frontiers In Pharmacology 12:** 664177.

Lázár, B., László, S.B., Hutka, B., Tóth, A.S., Mohammadzadeh, A., Berekméri, E., Ágg, B., Balogh, M., Sajtos, V., Király, K., Al-Khrasani, M., Földes, A., Varga, G., Makra, N., Ostorházi, E., Szabó, D., Ligeti, B., Kemény, Á., Helyes, Z., Ferdinandy, P., Gyires, K., **Zádori, Z.S.** (2021) A comprehensive time course and correlation analysis of indomethacin-induced inflammation, bile acid alterations and dysbiosis in the rat small intestine. **Biochemical Pharmacology 190:** 114590.

László, S.B, Lázár, B., Brenner, G.B., Makkos, A., Balogh, M., Al-Khrasani, M., Hutka, B., Mohammadzadeh, A., Kemény, Á., László, T., Scheich, B., Szabados, T., Kenyeres, É., Giricz, Z., Bencsik, P., Varga, Z.V., Novák, J., Helyes, Z., Ferdinandy, P., Gyires, K., **Zádori, Z.S.** (2020) Chronic treatment with rofecoxib but not ischemic preconditioning of the myocardium ameliorates early intestinal damage following cardiac ischemia/reperfusion injury in rats. **Biochemical Pharmacology 178:** 114099.