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RESEARCH AREA

Present research field: Characterisation of stem cells of dental origin, studies on tissue regeneration-, differentiation capacity and immunomodulatory effects in vitro; studies on the structural and functional differentiation of the salivary gland and its secretion and transport processes. Development of a 3D cellular model of the ameloblast, studies on its structural and functional differentiation, secretion and transport processes. Covid research. previous research field: Functional neuroanatomy of the neuroendocrine hypothalamus, mapping of stress-related CNS networks; neurobiological effects of drug withdrawal, role and effects of histamine in the regulation of feeding (nutrition).

TECHNIQUES AVAILABLE IN THE LAB

Cell culture (primary cell culture), 3D cell culture (membrane, scaffold, organoid) molecular biology methods: real-time PCR, iPSC, in situ hybridisation, northern blot, PCR, gel shift assay, plasmid design, western blot, immunocytochemistry/immunohistochemistry, short-circuit current measurement, experimental design, animal experiments (rat, mice), animal surgery (e.g. adrenalectomy, lesions), isotope labelling techniques.

SELECTED PUBLICATIONS

Futosi, K., Németh, T., Horváth, Á., Abram, CL., Tusnády, S., Lowell, CA., Helyes, Z., Mócsai, A. (2023) Myeloid Src-family kinases are critical for neutrophil-mediated autoinflammation in gout and motheaten models. **J Exp Med** **220**(7): e20221010.

Futosi, K., Bajza, B., Deli, D., Erdélyi, A., Tusnády, S., Mócsai, A. (2023) Analysis of intracellular tyrosine phosphorylation in circulating neutrophils as a rapid assay for the in vivo effect of oral tyrosine kinase inhibitors. **Front Pharmacol** **14**: 1056154.

Futosi, K., Kása, O., Szilveszter, K., Mócsai, A. (2021) Neutrophil phospholipase C γ 2 drives autoantibody-induced arthritis through the generation of the inflammatory microenvironment. **Arthritis Rheumatol** **73**: 1614-1625.

Németh, T., **Futosi, K.,** Szilveszter, K., Viliánovszki, O., Kiss-Pápai, L., Mócsai, A. (2018) Lineage-specific analysis of Syk function in autoantibody-induced arthritis. **Front Immunol** **9**: 555.

Németh T., **Futosi, K.,** Sitaru, C., Ruland, J., Mócsai, A. (2016) Neutrophil-specific deletion of the CARD9 gene expression regulator suppresses autoantibody-induced inflammation in vivo. **Nat Commun** **7**: 11004.

Futosi, K., Németh, T., Pick, R., Vántus, T., Walzog, B., Mócsai, A. (2012) Dasatinib inhibits pro-inflammatory functions of mature human neutrophils. **Blood** **119**: 4981-4991.