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RESEARCH AREA

Thyroid hormones (TH) produced by the thyroid gland are involved in the regulation of most of our organs and physiological processes and responsible for the maintenance of normal function and development of most tissues. Furthermore, THs play critical role in the regulation of metabolism, food intake, glucose homeostasis and energy expenditure. The relatively steady circulating levels of TH that is necessary for the preservation of normal function of the brain and peripheral organs is maintained by the hypothalamic pituitary-thyroid (HPT) axis. In our lab, we mainly focus on the endogen regulation of TH levels and HPT axis. We examine the central regulation of negative feedback regulation of HPT axis in mice, in addition the effects of endocrine disruptors on TH action during embryonic development.

TECHNIQUES AVAILABLE IN THE LAB

- Various tissue-sectioning methods
- Laser capture microdissection
- RNA, DNA isolation
- Quantitative real-time PCR
- Radioactive in situ hybridization
- Immunohistochemistry
- ELISA
- TSE Phenomaster System metabolic measurements
- Behavior tests

SELECTED PUBLICATIONS

Sinkó, R., Katkó, M., Tóth, G., Kovács, G. L., Dohán, O., Fülöp, T., Costa, P., Dorogházi, B., **Kóvári, D.**, Nagy, E. V. et al. (2024) Novel biomarkers reveal mismatch between tissue and serum thyroid hormone status in amiodarone-induced hyperthyroidism. *J Clin Endocrinol Metab* **110**(2): 374-386.

Ruska, Y., Peterfi, Z., Szilvasy-Szabo, A., **Kovari, D.**, Hrabovszky, E., Doroghazi, B., Gereben, B., Toth, B., Matziari, M., Wittmann, G. et al. (2024) GLP-1 Receptor Signaling Has Different Effects on the Perikarya and Axons of the Hypophysiotropic Thyrotropin-Releasing Hormone Synthesizing Neurons in Male Mice. *Thyroid* **34**: 252-260.

Kóvári, D. (2023) Central regulation of the HPT axis. (Doctoral dissertation)

Sinkó, R., Mohácsik, P., **Kóvári, D.**, Penksza, V., Wittmann, G., Mácsai, L., Fonseca, T. L., Bianco, A. C., Fekete, C., Gereben, B. (2023) Different hypothalamic mechanisms control decreased circulating thyroid hormone levels in infection and fasting-induced Non-Thyroidal Illness Syndrome in male Thyroid Hormone Action Indicator Mice. *Thyroid* **33**: 109-118.

Kóvári, D., Penksza, V., Szilvász-Szabó, A., Sinkó, R., Gereben, B., Mackie, K., Fekete, C. (2022) Tanycyte specific ablation of diacylglycerol lipase alpha stimulates the hypothalamic-pituitary-thyroid axis by decreasing the endocannabinoid mediated inhibition of TRH release. *J Neuroendocrinol* **34**: e13079.