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RESEARCH AREA

Mapping the signaling pathways involved in cartilage development and understanding the signaling changes caused by osteoarthritis. A narrower research interest includes a more detailed study of the neuropeptide PACAP and its effects on cartilage development and during mechanical stimulation. Furthermore, the potential protecting effects of PACAP on cartilage injuries are continuously being investigated in rat and mouse models, as well as human samples

TECHNIQUES AVAILABLE IN THE LAB

Procedures for tissue culture, high density cultures, establishment of limb bud tissue cultures, induction of osteoarthritis in rat and mouse models.

Molecular biology techniques:

Western blot, RT-PCR, Q-PCR, proliferation and viability assays, enzyme activity measurements.

Histological examinations and stainings, use of confocal microscope, polarization microscope, and light microscopes.

SELECTED PUBLICATIONS

Matta, Cs., **Juhász, T.**, Fodor, J., Hajdu, T., Katona, É., Szucs-Somogyi, Cs., Takacs, R., Vago, J., Olah, T., Bartok, Á., Varga, Z., Panyi Gy., Csernoch, L., Zakany, R. (2019) N-methyl-D-aspartate (NMDA) receptor expression and function is required for early chondrogenesis. **Cell Communication and Signaling 17**: 166.

Szegeczki, V., Bauer, B., Jüngling, A., Fülöp, D. B., Vágó, J., Perényi, H., Tarantini, S., Tamás, A., Zákány, R., Reglődi, D., **Juhász, T.** (2019) Age-related alterations of articular cartilage in pituitary adenylate cyclase activating polypeptide (PACAP) gene deficient mice. **GeroScience 6**: 775-793.

Szentlélek, E., Szegeczki, V., Karanyicz, E., Hajdú, T., Tamás, A., Tóth, G., Zákány, R., Reglődi, D.*; **Juhász, T.*** (2019) Pituitary Adenylate Cyclase Activating Polypeptide (PACAP) Reduces Oxidative and Mechanical Stress-Evoked Matrix Degradation in Chondrifying Cell Cultures. **Int J Mol Sci 1**: 168.

Józsa, G., Szegeczki, V., Pálfi, A., Kiss, T., Helyes, Zs., Fülöp, B., Cserhádi, Cs., Daróczy, L., Tamás, A., Zákány, R., Reglődi, D*., **Juhász, T.***. (2018) Signalling Alterations in Bones of Pituitary Adenylate Cyclase Activating Polypeptide (PACAP) Gene Deficient Mice. **Int J Mol Sci 19**: 2538.

Juhász, T., Matta, Cs., Somogyi, Cs., Katona, É., Takács, R., Soha, R., Szabó, J.A., Cserhádi, Cs., Szódy, R., Karácsonyi, Z., Bakó, É., Gergely, P., Zákány, R. (2014) Mechanical loading stimulates chondrogenesis via the PKA/CREB-Sox9 and PP2A pathways in chicken micromass cultures. **Cell Signal 26**: 468-482.