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RESEARCH AREA

The HCEMM-SU Translational Dermatology Research Group focuses on understanding the biology of pigment producing cells (melanocytes) and melanoma cells.

Despite recent developments in the field of immuno-oncology by the introduction of immune-checkpoint blockade (ICB) in the management of melanoma, resistance to ICB therapies still poses a tremendous problem. The group aims to identify novel therapeutic approaches to overcome resistance to ICB therapies. The most common resistance mechanism, the loss of antigen presentation, might offer novel vulnerabilities to antigen presentation-independent mechanisms. The group aims to find regulators and novel therapeutic targets by creating a novel mouse model of immunotherapy resistance. This novel model of ICB resistance combined with in vivo genome-wide CRISPR screen approaches will be used to identify novel targets that may be utilized to overcome ICB resistance.

Other projects in the lab focus on mechanism of pigmentation and non-apoptotic forms of cell death in melanoma.

TECHNIQUES AVAILABLE IN THE LAB

- Basic cellular and molecular biology methods, cell culture, qPCR, DNA/RNA/protein isolation, Western Blot, plasmid cloning, plasmid isolation, bacterial transformation, lentiviral work, flow citometry
- Small pharmacologic compound screens
- Genomic modification techniques: siRNA mediated gene silencing, crispr-cas9 mediated genomic modifications
- Basic bioinformatic tools in cancer research (biomarker discovery, drug sensitivity prediction, pathway analysis)
- Basic statistical analyses
- Mouse models of melanoma

SELECTED PUBLICATIONS

Meznerics, FA., Illés, K., Dembrovszky, F., Fehérvári, P., **Kemény, LV.**, Kovács, KD., Wikonkál, NM., Csupor, D., Hegyi, P., Bánvölgyi, A. Platelet-Rich Plasma in Alopecia Areata-A Steroid-Free Treatment Modality: A Systematic Review and Meta-Analysis of Randomized Clinical Trials. **Biomedicines 10(8):** 1829.

Hermann, AL.*, Fell, GL.*, **Kemény, LV.***, Fung, CY., Held, KD., Biggs, PJ., Rivera, PD., Bilbo, SD., Igras, V., Willers, H., Kung, J., Gheorghiu, L., Hideghéty, K., Mao, J., Woolf, CJ., Fisher, DE., β-Endorphin mediates radiation therapy fatigue. **Sci Adv 8(50):** eabn6025.

Meznerics, F.A, Fehérvári, P., Dembrovszky, F., Kovács, KD., **Kemény, LV.**, Csupor, D., Hegyi, P., Bánvölgyi, A., Platelet-Rich Plasma in Chronic Wound Management: A Systematic Review and Meta-Analysis of Randomized Clinical Trials. **J Clin Med 11(24):** 7532.

Meznerics, FA., **Kemény, LV.**, Gunther, E., Bakó, E., Dembrovszky, F., Szabó, B., Ascsillán, A., Lutz, E., Csupor, D., Hegyi, P., Bánvölgyi, A., Nagy, G., Multi-biomarker disease activity score: an objective tool for monitoring rheumatoid arthritis? A systematic review and meta-analysis. **Rheumatology (Oxford)** 2022 Dec 28: keac715.

Gil, J., Rezeli, M., Lutz, E. G., Kim, Y., Sugihara, Y., Malm, J., Semenov, Y. R., Yu, K. H., Nguyen, N., Wan, G., **Kemény, LV.**, Kárpáti, S., Németh, I. B., & Marko-Varga, G. (2021). An Observational Study on the Molecular Profiling of Primary Melanomas Reveals a Progression Dependence on Mitochondrial Activation. **Cancers 13(23)**, 6066.