ABOUT US

We explore mechanisms governing regeneration of some organs and tissues. Particularly, we are focused on three fields:

• The role of stem cells in regeneration generally – we investigate, how the stem cells are stimulated to regeneration behavior, how they are attracted into site of injury, and how the regeneration process occurs.

• Application potential of stem cells in liver regeneration – we study if and how extrahepatic stem cells (i.e. stem cells out of liver) could support liver regeneration and which mechanisms are utilized – hepatodifferentiation, paracrine effect or cell fusion.

• The role of dermal fibroblasts in wound healing – we are interested in the ability of dermal fibroblasts to participate in the regulation of healing process, particularly in the persistence of chronic inflammation in the wound site.

Our laboratory is equipped with:

• Essential stuff and machines of cell culture laboratory;
• FACSAriaTM Fusion, BD Bioscience;
• FACSVersaTM Flow cytometer, BD Bioscience;
• Luminex® 200TM, Luminex;
• Inverted fluorescence microscope IX83, Olympus;
• Synergy HT and Synergy H1 Microplate readers, Biotek.

We are well trained in cell isolation and culture, immunocytochemistry, flow cytometry, proteins quantification by Luminex and ELISA methods, cell viability and proliferation analysis. At all projects we also focus on the perfect study design and statistics. To guarantee quality standard, well established methods are performed under standard operating protocols.

MEMBERS

• Lucie Vištejnová, Ph.D., M.Sc. – Research Group Leader
• Michaela Miklíková, M.D.
• Iveta Zimová, B.Sc.
• Assoc. Prof. Daniel Lysák, Ph.D.
• Monika Holubová, Ph.D.
• Assoc. Prof. Milena Králičková, Ph.D.

WE OFFER

• Isolation and cultivation of primary cells from various tissues.
• Cultivation of commercial available cell lines.
• Cell viability measurement.
SELECTED PUBLICATIONS


Cytotoxicity measurement.
• Immunogenicity measurement.
• Evaluation of material biocompatibility.
• Evaluation of cell adhesion and migration on bio-materials.
• Fluorescent and confocal microscopy, including real-time monitoring.
• Cell analysis by flow cytometry.
• Cell sorting.
• Measurement of protein expression by ELISA and Luminex techniques.
• Eukaryotic cells transformation – transfection, electroporation.
• Image analysis (e.g. objects counts, lengths, areas or angels, image stitching, picture thresholding).
• Consultation and advisory during study design.
• Statistical analysis (data distribution, testing of hypothesis).
• Cooperation on data interpretation.

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