
Scientific research groups

Cardiovascular Pharmacology - CardioTox In Vivo

Head [doc. PharmDr. Martin Štěrba, PhD.](#) The cardiotoxicity of anthracycline cytostatics has been studied with the aim to elucidate the molecular mechanisms responsible for this organ-specific toxicity and subsequently the cardioprotective effect of the evaluated compounds.

Our research group focuses on the cardiovascular toxicity of anticancer drugs and the possibility of pharmacological cardioprotection in vivo. Our primary interest is in the cardiotoxicity of anthracycline cytostatics (e.g., doxorubicin or daunorubicin) and, more recently, in the toxicity of newer biologically targeted drugs (e.g., tyrosine kinase inhibitors or proteasome inhibitors). In particular, we aim to elucidate the molecular mechanisms responsible for developing this organ-specific toxicity and, consequently, for the cardioprotective effect of the studied compounds. Our goal is to provide high-quality experimental and translational research in cardio-oncology.

[More about CardioTox In Vivo](#)

Hepatic Pharmacology - LivPharm.

Head [prof. MUDr. Stanislav Mičuda, PhD.](#) The aim is to experimentally identify the potential therapeutic effect of various compounds in basic liver pathologies such as non-alcoholic steatohepatitis or intrahepatic cholestasis. Potential hepatotoxicity and the risk of drug interactions are also studied for new agents.

Main research focus is the evaluation of factors responsible for variability in hepatic drug excretion with special attention paid to drug-drug and drug-food/natural product interactions. Associated topic is the study of the physiology and pathology of bile formation, and consequent therapeutic possibilities for nonalcoholic fatty liver disease, and various cholestatic liver diseases including those produced by various xenobiotics.

[More about LivPharm.](#)

Clinical Pharmacology - ClinPharm.

Head [doc. Ing. Jaroslav Chládek, PhD.](#) Uses methods of individual and population modelling of pharmacokinetics and pharmacodynamics and bioindicators of therapeutic and toxic effects of drugs for individualization of pharmacotherapy. We focus on the usage of individual and population modelling of pharmacokinetics, pharmacodynamics, and bioindicators of therapeutic and toxic effects of drugs for individualization in pharmacotherapy. In the field of clinical pharmacology, we have been cooperating for 15 years with the Department of Dermatology and Venereology at the University Hospital Hradec Králové on the topic of methotrexate in curing focal psoriasis. Other areas of clinical pharmacology research are the treatment of idiopathic juvenile arthritis, Crohn's disease, and the usage of non-invasive methods of examining bioindicators in respiratory tract disease with inflammation.