



**FACULTY OF PHARMACY  
IN HRADEC KRÁLOVÉ**  
Charles University

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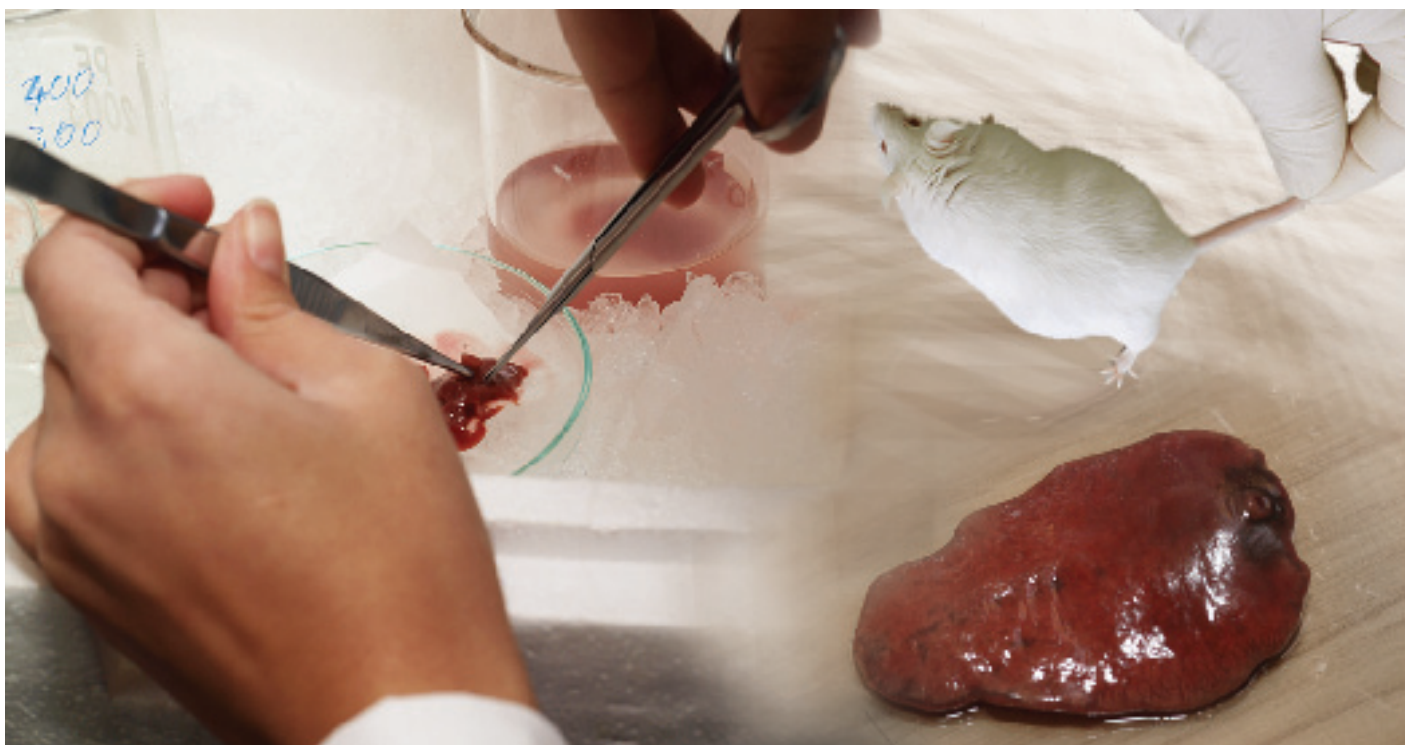
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## LABORATORY OF DRUG METABOLISM, INTERACTIONS AND RESISTANCE

### OFFER

#### DRUG METABOLISM STUDIES *IN VITRO* AND/OR *IN VIVO*

- Antiproliferative and toxicity tests using various cultures of immortalized cells.
- Tests of hepatotoxicity of drugs and other xenobiotics.
- Preparation and incubation of precision-cut liver and intestinal slices.
- Isolation and cultivation of primary cultures of hepatocytes.
- Preparation of subcellular fractions (animal and human organs, parasites, plants, cell cultures).
- Assays of enzyme expression and enzymatic activities.
- Identification of metabolites of drugs and other xenobiotics.

#### DRUG RESISTANCE STUDIES IN HELMINTHS

- *In vivo* animal studies.
- Isolation of helminths from infected hosts.
- *Ex vivo* cultivations of helminths.
- Coprological testing.

### EXPERTISE

- Drug biotransformation and transport studies in humans, animals, parasitic helminths and plants.
- Effect of drugs, dietary supplements, natural compounds and other xenobiotics on expression and activity of drug-metabolizing enzymes.
- Pharmacodynamics mechanisms of drug resistance in helminths.

**„We are open to a wide spectrum of collaboration with academic partners as well as with partners from applied research, industry and agronomy.“**



## RESEARCH AREA & EXCELLENCE

- Identification of metabolites of drugs and other xenobiotics in humans, animals, parasitic helminths and plants
- Toxicity and interactions of natural substances/ food supplements with drugs
- Mechanisms of drug resistance in parasitic helminths

## KEY RESEARCH EQUIPMENT

- Accredited vivarium.
- Cell and tissue laboratory.
- Laboratory for isolation and cultivation of helminths.
- Laboratory for molecular biology (electrophoresis, Western blotting, qPCR).
- Analytical devices (spectrophotometers, spectrofluorimeters, HPLC, LC/MS).

## ACHIEVEMENTS

Publications in respected international journals.

### SEE MORE INFORMATION ON OUR WEBPAGES:

<http://portal.faf.cuni.cz/Groups/Drug-resistance-and-drug-interactions>

**„Our mission is to get better knowledge of fate of drugs in various organisms and the factors that could affect drug efficacy and safety.“**

## PARTNERSHIPS & COLLABORATIONS

### MAIN PROJECTS

- 18-08452S “Anthelmintics in plants – interactions with polyphenols biosynthesis and antioxidant defence”
- 18-07724S “Circulation of anthelmintics in environment – does it contribute to drug resistance development in helminths?”
- 18-09946S “Metabolism of terpenes and mechanisms of their toxic effects in human liver“
- 18-07281Y “*In vitro* and *ex vivo* models to study drug-drug interactions of antiviral drugs on intestinal transporters“
- 17-11954Y “UDP-glycosyltransferases in *Haemonchus contortus* – players in drug-resistance?”
- No. P303/12/G163 “Centre of drug – dietary supplement interactions and nutrigenetics“
- UNCE18/SCI/012 “Centre of research of hosts-parasites interactions“
- PRIMUS/17/SCI/4 “Úloha mikroRNA v lékové rezistenci hlístic“

