
IOCB SERVICE DAYS

Presentation of services by:
Research-Service Groups / Service Groups / Core Facilities

20
23

Biochemical Pharmacology

Helena Mertlíková Kaiserová



ÚOCHB AV
ČR
IOCB PRAGUE

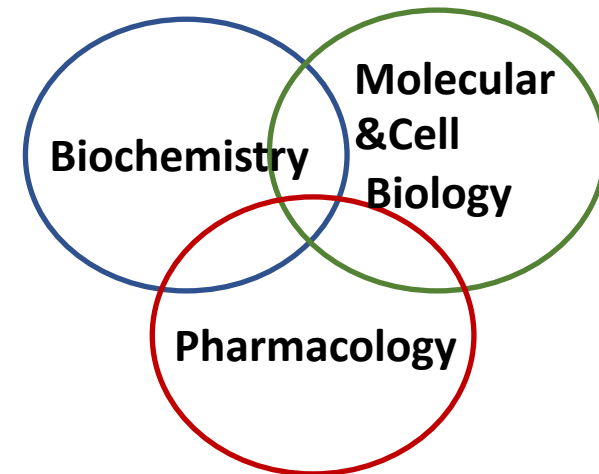


Who we are?



BIO cluster

Building A – 2nd floor,
next to Cafe Organica



*We are here to support **YOU** to do even greater science !*

Features: **Personalized/customized approach**
Drug discovery support

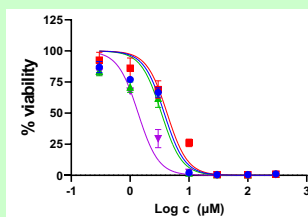
Highly qualified staff
Fast feedback (in-house collaboration)

Overview of the services

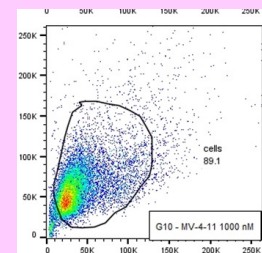
ISOLATED SERVICES

COMPLEX PROJECT SUPPORT

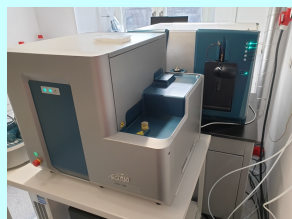
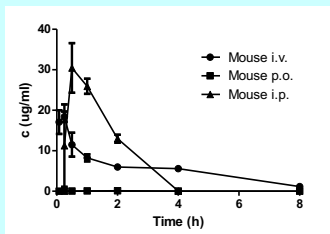
ASSAY DEVELOPMENT & SCREENING



FLOW CYTOMETRY & CELL CULTURE SERVICES



ADME/TOX (DMPK)



ANIMAL FACILITY



Assay Development & Screening



- Enzyme Assays
- Cell-based Assays
- Screening (hit identification)
- Protein production
- Miniaturization
- Automation
- Data handling
- Cooperation with IOCB Library
- Radioisotope laboratory



Jarda
Kozák



Marika
Matoušová



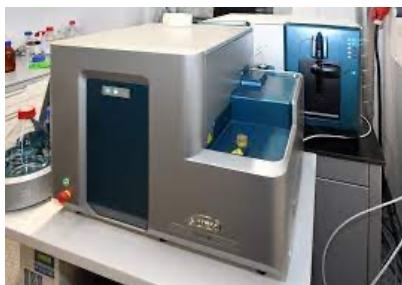
Martin
Zavřel



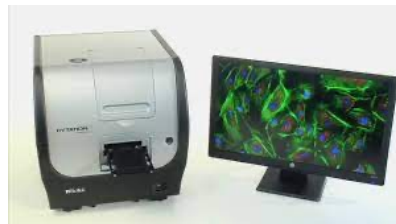
Markéta
Šmídková



Pipetting robots (BRAVO, Integra)



HT-mass spectrometer
(ECHO-MS)

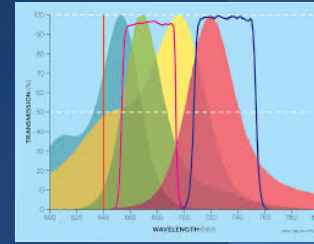


Multimode
Imaging reader



Contactless dispensers (ECHO 550, d300e, Certus Flex)

Flow Cytometry & Cell Culture Services



- Operation & maintenance of 4 FACS
- Multicolor panel design
- Cell sorting
 - single cell, bulk, small particles
- Data analysis – FlowJo®
- Antibody library
- Mycoplasma screen, endotoxin (LPS) detection
- Ready-to-use cells (cell lines)



Mirek
Hájek

Erika
Kužmová

Jana
Günterová

Karolína
Müllerová

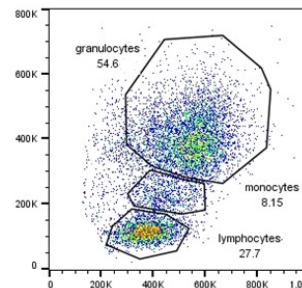
Analyzers

Sorters

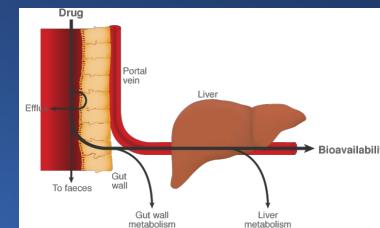
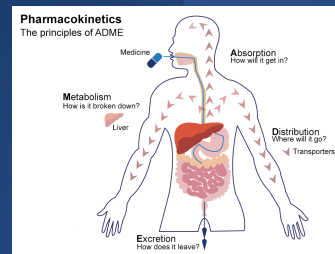


Applications:

- Transfection efficiency
- Production of clonal populations
- Nanoresearch
- Immunophenotypization
- Apoptosis, cell cycle, RNA/DNA synthesis...etc.



ADME/TOX (DMPK)



- Cytotoxicity
- Metabolic stability
 - Plasma, microsomes
- Membrane permeability
 - Caco-2, PAMPA
- Plasma protein binding
- hERG inhibition (cardiotox)
- Kinetic solubility
- Drug metabolism
- Basic PK in mice



Karel
Chalupský



Timo
Strmeň



Saša
Dvořáková

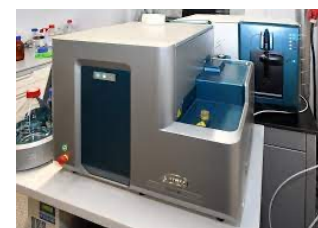


Eva
Tloušťová

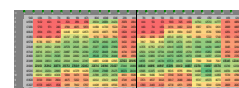
3R



In vitro
tools

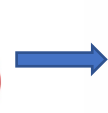


ECHO-MS

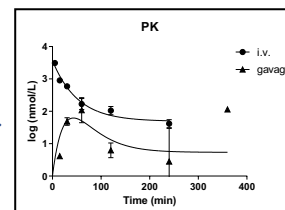


IOCB Library

TREATMENT



UPLC - MS



$T_{1/2}$, T_{max} , Cl_{int} , V_{ss} , F , ...
(PK Solver)

Animal Facility



- Housing and animal care
- Mice, rats
- **Non-barrier** facility
- IVC
- Flow box for aseptic work
- Inhalation anaesthesia device
- Metabolic cages (4)
- Animal procedures training
- Approved **project proposal** needed
- Access restricted (valid **certification**)



Ludmila
Jandová



Pavlína
Hovorková



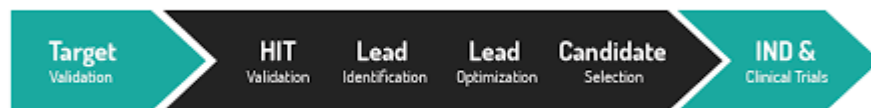
Lucka
Pospíšilová



Summary:

We have something for (almost) everyone

1. **CHEM:** I have compounds – Do they have pharmacological potential?



2. **BIO:** I have my own biological project and need to speed it up

- Can you help me with the sophisticated instrumentation?
- Can I use the animal facility? When and how to write project proposal?
- Can you help me with data interpretation? (FACS, ADME....)
- Can you assist in cell engineering process?

3. **PHYS:** I would like to do occasional experiments involving cells

- May I get ready-to-use cells?



Future perspectives

- **CRISPR/Cas9 services (k/o)**
- **Advanced metabolic models**
 - HepaRG® cells
 - Extrahepatic metabolism
 - MDCK permeability
- **Monoclonal antibody services**
 - Mouse immunization – Spleen WBC isolation – FACS
- **(Mouse models for PD studies)**

Always open to discussions with the users !

Come to visit us (A, 2nd floor, next to Café Organica) !

Thank you for your attention

