IOCB SERVICE DAYS 2023

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

Mass Spectrometry

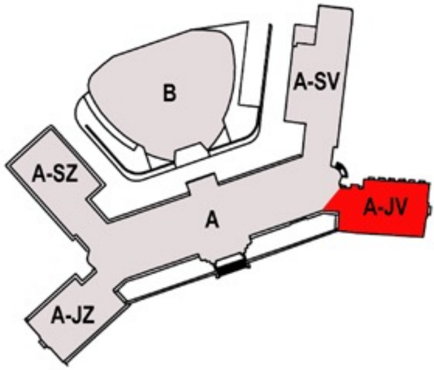
Josef Cvačka

ÚOCHB AV ČR
IOCB PRAGUE

RSG Mass Spectrometry

16 scientists and research assistants; 8 students; 1 technician

- Organic mass spectrometry
- Qualitative, quantitative
- Small, large molecules



1st floor
2nd floor

Overview of services

https://intraweb.uochb.cas.cz/
→ Science → Core Facilities → MS

Primary services

- Small molecules (mass spectra)
- Quantitative analysis of small molecules
- Lipidomic analysis
- Biomacromolecules (mass spectra)
- Proteomic analysis (identification, quantification)
- Open access GC/MS

Specialized services

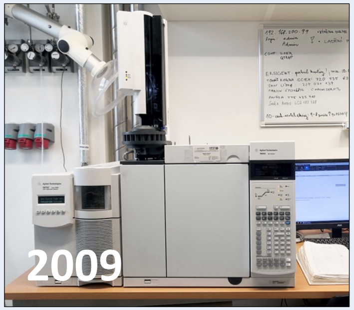
- Tandem MS of small molecules, analysis of mixtures
- Mass spectrometry imaging
- Structural proteomics (H/D exchange, crosslinking, native MS)

Instruments


2008


2003


2021


2009


2017


2008

Instruments for small molecules

Instruments for bio(macro)molecules


2011


2018


2010


2021


2011


2021

Services – small molecules

Small molecules analysis (mass spectra)

Nominal- or high-resolution ESI, EI/CI, APCI or MALDI spectra. Elemental composition from HR spectra.

Edita
Kofroňová

Kvetoslava
Kertisová

Kateřina
Nováková

Eva
Slabá

Martin
Svoboda

Quantitative analysis of small molecules

Targeted detection and quantification of small molecules.

Karel Čížek

Services – small molecules

Lipidomic analysis
Untargeted analysis of lipids based on HPLC / high-resolution ESI-MS. Relative quantification (wild type vs. knockout etc.).

Štěpán Strnad

Vladimír Vrkoslav

MS imaging (specialized service)
Mapping the distribution of chemical species on the sample surface, most often on tissue slices using MALDI-TOF.

Open access GC/MS
Quadrupole GC/MS is available for the IOCB staff to perform their own measurements.

Vladimír Vrkoslav

Services – proteomics

Proteomic analysis

Identification of proteins, their PTMs, and/or quantification of proteins either via label-free or labeling strategy. The workflows are usually based on proteolytic digestion and LC/MS analysis of resulting peptides.

Martin Hubálek

Alena Křenková

Alena Meledina

Michal Korecký

Biomacromolecules

Mass spectra of intact biopolymers like peptides, proteins, nucleic acid, polysaccharides, using MALDI or ESI.

Martin
Hubálek

Edita
Kofroňová

Kateřina
Nováková

Services

Structural proteomics (specialized service)
Structure of proteins, protein-protein or protein-ligand complexes using hydrogen/deuterium exchange, chemical crosslinking or native MS.

Martin Hubálek

Jakub Sýs

Petra Junková

Other services
Do you need a different type of analysis using MS?
Come, we will be happy to discuss your project with you.

Some statistics...

- MASS SPECTRA OF SMALL MOLECULES (2022)

  8 302 requests

  214 customers from 35 groups; turnaround time 2.4 working days

- PROTEOMIC ANALYSES (2022)

  498 requests

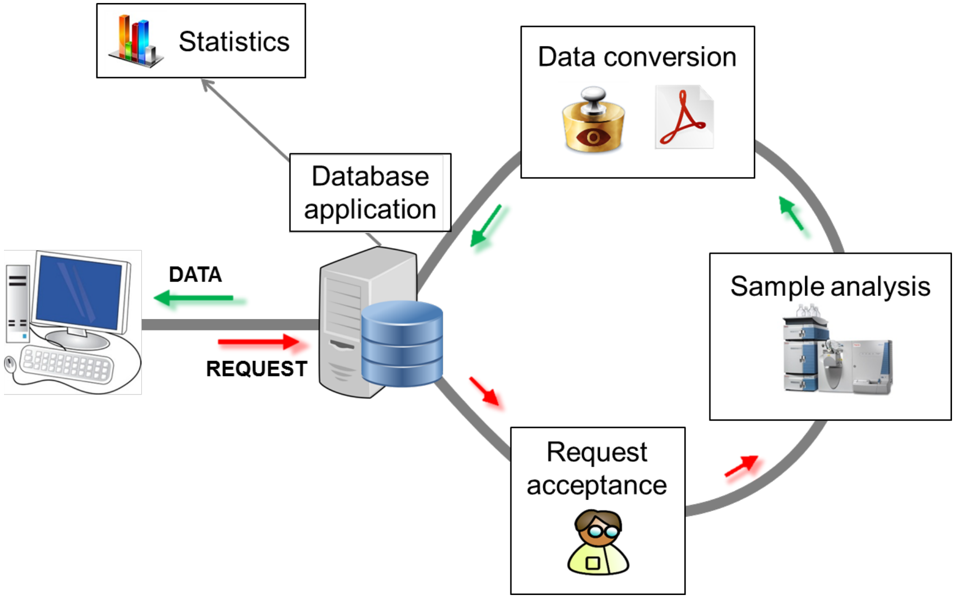
  62 customers from 19 groups; turnaround time 6.5 working days

- QUANTIFICATION BY LC/MS; LIPIDOMICS (2022)

  8 requests (2675 HPLC runs); 12 requests (173 samples)

How to submit a request & sample

ReQuest: web-based database system for management of sample analysis requests



CREATE AND SUBMIT REQUEST

⬇

PRINT THE REQUEST FORM, BRING IT WITH YOUR SAMPLES

⬇

SAMPLES TO FRIDGE/FREEZER, PRINTED FORM TO LETTER TRAY

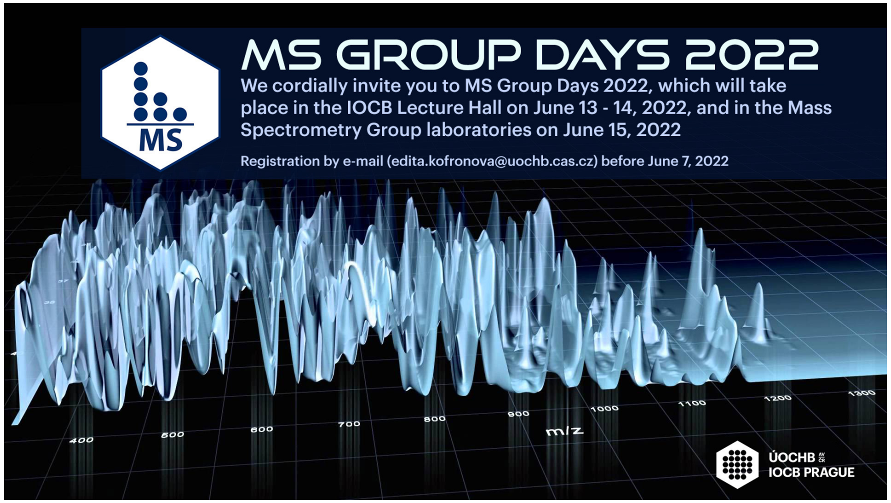
More information

IOCB
Intraweb

reQuest

☎ 303

https://ms.group.uochb.cz/en



MS GROUP DAYS 2022

We cordially invite you to MS Group Days 2022, which will take place in the IOCB Lecture Hall on June 13 - 14, 2022, and in the Mass Spectrometry Group laboratories on June 15, 2022

Registration by e-mail (edita.kofronova@uochb.cas.cz) before June 7, 2022

MS GROUP DAYS

- Every second year
- 2 days of lectures, discussions, data interpretation workshops and guided tours

Thank you
for your attention.