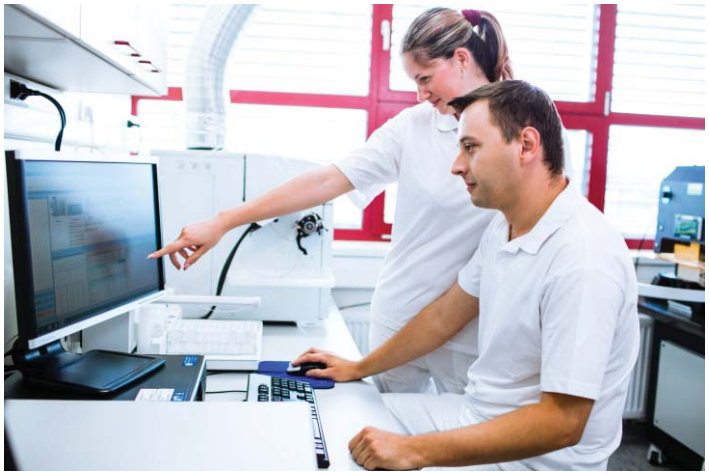
TRACE **ELEMENTAL ANALYSIS**

AGILENT 7700X QUADRUPOLE ICP-MS SPECTROMETER
GBC OPTIMASS 9500 TIME OF FLIGHT ICP-MS SPECTROMETER
PHOTON MACHINES ANALYTE G2 LASER ABLATION

Inductively coupled plasma mass spectrometry (ICP-MS) is technique of the first choice for the multi-elemental analysis of metals, metalloids and several non-metals at trace and ultra-trace concentration levels. We are capable to analyze a wide variety of samples coming from different sources, such as environment, medicine, biology, agriculture, food and pharmaceutical industry as well as geology and archeology. For bulk analysis samples need to be digested. Direct analysis of solid samples in order to investigate the lateral element distributions or their isotope ratios is performed in connection with the laser ablation (LA-ICP-MS). Our lab also provides development and validation of microwave digestion as well as ICP-MS methods under the GMP conditions.

ACQUIRED INFORMATION

- Qualitative, semi quantitative and quantitative elemental analysis (starting at ng.L^{-1} levels)
- Isotope and isotopic ratio analysis (LA-ICP-MS)
- Imaging of elements in solid samples (LA-ICP-MS)
- Speciation elemental analysis (HPLC-ICP-MS)
- Determination of metal impurities for QC of pharmaceutical production (also according to USP <232>, <233> chapters)

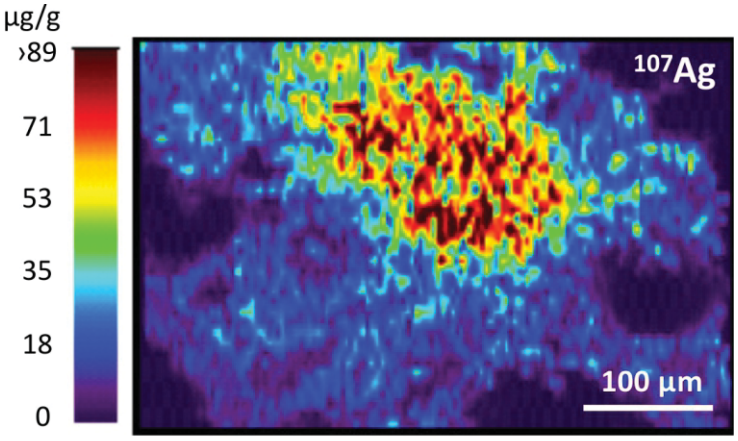


SAMPLE TYPES

- Liquids and water solutions
- Solid samples and slurries
- For LA suitable thickness and shape

MODES, CONDITIONS AND PRECISION

- Quadrupole ICP-MS equipped with ORS^3 interference removal system and high matrix introduction accessory allows reliable analyses of almost 70 elements with very good precision and trueness
- Time of flight ICP-MS due to high scanning speed of whole spectra (30,000 spectra per second in range 3-260 amu) is suitable for transition signals and isotopic ration analysis
- Preparation of samples for trace elemental analysis in clean lab condition
- Interpretation and quality assurance of results



Imaging of *Aspergillus fumigatus* infection on GMS-stained lung section (pixel size 5x5 µm)

DETAILED INFORMATION ON REQUEST

REGIONAL CENTRE OF ADVANCED TECHNOLOGIES AND MATERIALS

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