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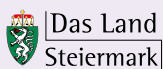
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**CBmed**  
is an internationally recognized biomarker research center with a focus on cancer, metabolism and inflammation.  
[www.cbmed.at](http://www.cbmed.at)

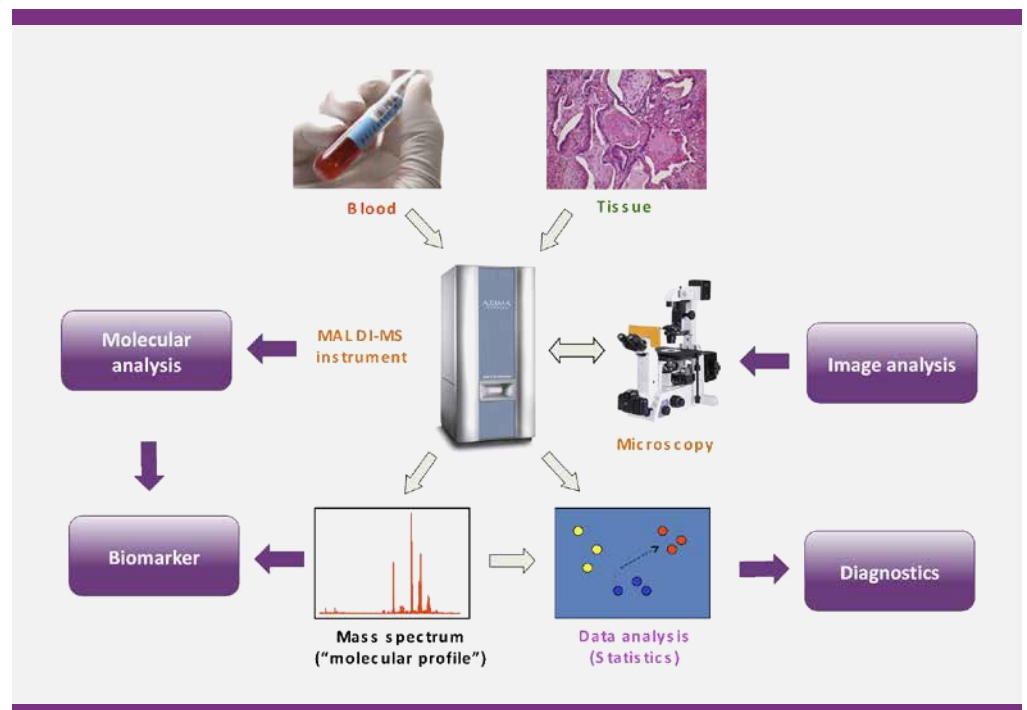
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## Clinical MALDI Applications



We have a focus on the development, optimisation and use of Matrix-Assisted Laser Desorption/Ionisation (MALDI) mass spectrometry (MS) in diverse clinical areas (e.g. cancer, CVD, neuropathology, etc.). MALDI-MS is a highly sensitive and rapid analytical technique which is ideal for biomarker discovery & monitoring. MALDI-MS allows detection of a large numbers of molecules in tissues ("imaging") or body fluids ("liquid biopsy"). Specifically we are developing methods and workflows for MALDI-MS imaging for the detection and characterisation of the immune cell distribution in cancer tissue and the detection and identification of biomarkers in blood (e.g. lipoproteins, extracellular vesicles, etc.).

We are open to the input and collaboration of academic and industry partners who are interested in the use and further development of MALDI-MS as a tool for clinical diagnostics.

## Other Resources

- Axima Performance MALDI-TOF/TOF-MS (Kratos/Shimadzu)
- TissueFAXSORT System (TissueGnostics)
- Ultracentrifugation
- Gel electrophoresis
- Thin-layer chromatography
- Solid-phase microextraction

## Our Expertise

- **Biomarker discovery and monitoring** through the use of mass spectrometry in diverse “omics” areas (e.g. proteomics, lipidomics, glycomics, etc.).
- **Development** of customized sample preparation protocols for MALDI-MS analyses.
- **Application** of MALDI-MS in diverse areas of biological & medical research.
- **Studies** – strong research background in cancer (proteomics, lipidomics), cardiovascular research (atherosclerosis, OxLDL), metabolic disorders (e.g. hypercholesterolemia), microbiology (bacterial, fungal identification), etc.
- **Incorporation** of biomarker discovery and monitoring from other CBmed labs.

## Our Methods

Fresh tissue and blood samples are subjected to in-house optimised sample preparation protocols (e.g. tissue sectioning, liquid extraction, matrix application, etc.) and subsequently analysed via our MALDI-MS platforms. This allows to obtain molecular profiles directly from tissue sections and/or liquid biospecimens followed by the identification of the underlying biomarker molecules (e.g. proteins, lipids, etc.) which can then be used as targets for in-vitro (e.g. ELISA, immunohistochemistry, etc.)

and/or in-vivo diagnostic techniques (e.g.  $\mu$ PET/SPECT imaging). Beside these techniques, based on our long-term expertise in the use of MALDI-MS, we can provide customized sample analysis upon request. Together with biostatisticians we are developing optimised workflows for the automated analysis of mass spectral data and database search with the aim to provide a MALDI-MS based solution in biomarker research and screening.

