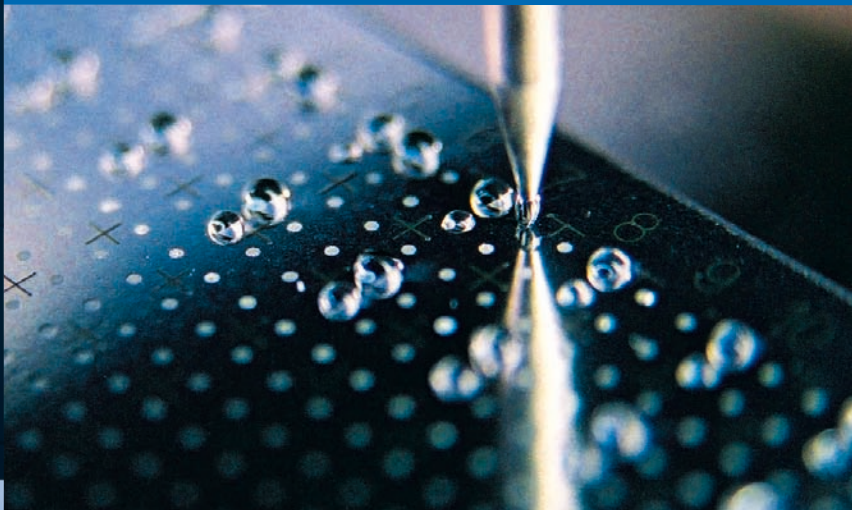
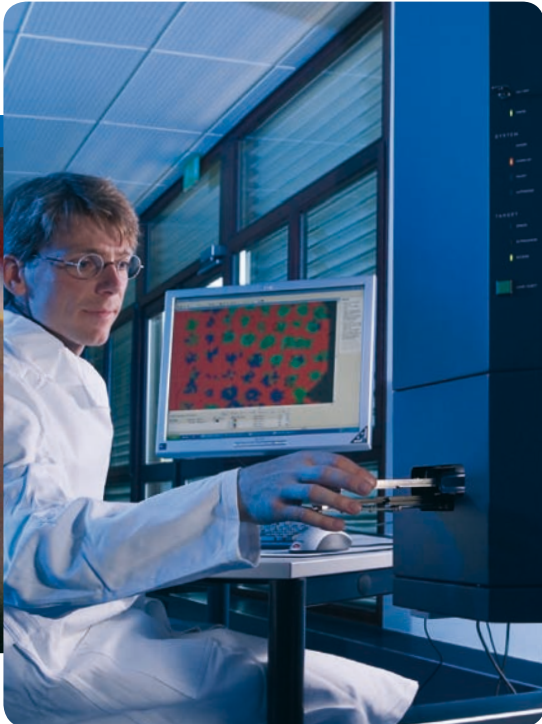


Bruker Daltonics



autoflex III smartbeam

- The Standard in MALDI-TOF Performance

think forward

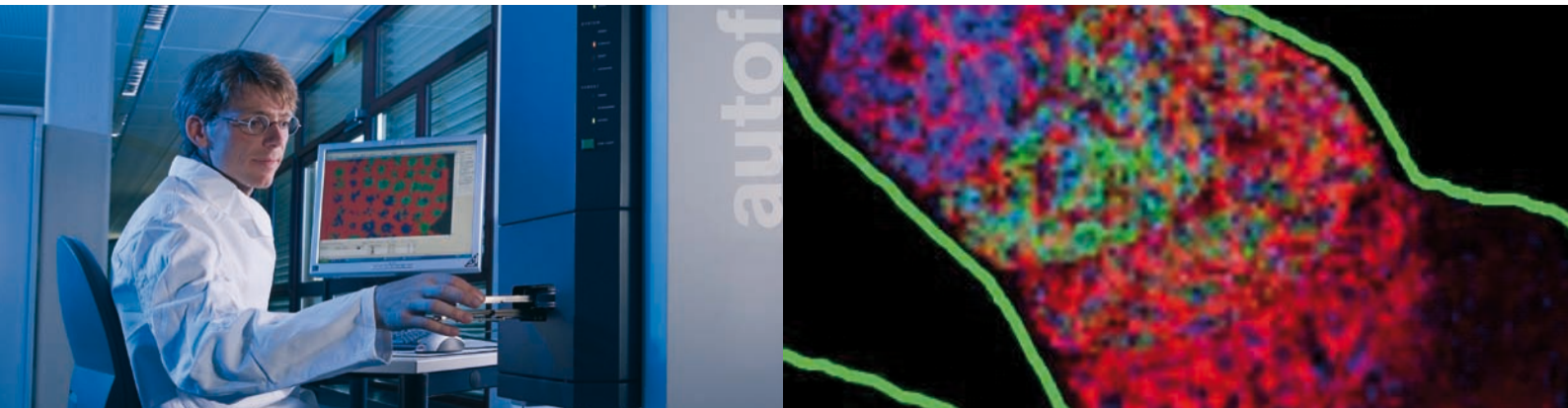
MALDI-TOF/TOF

Designed for a Routine High Level of Performance

The autoflex III smartbeam brings the power of high performance MALDI-TOF and TOF/TOF technology to a number of applications. Robust, and easy to use, the autoflex III smartbeam is an extraordinary combination of outstanding technology and instrument productivity.

Delivering maximum efficiency, the autoflex smartbeam III is a workhorse, space saving vertical design system that can be customized to readily handle both routine and challenging analytical tasks.

Richly awarded and widely deployed, the autoflex III smartbeam utilizes the latest in Bruker Daltonics MALDI-TOF technology. Featuring numerous innovations in laser technology, instrument resolution and precision, and an extended mass range of measurement, the autoflex III smartbeam gives you access to a system capable of greatly advancing your research at a value price.



- Discovery Proteomics
- Protein and Peptide Sequencing
- Protein Characterization and Measurement
- Intact Protein Analysis
- MALDI Protein Tissue Imaging
- Biomarker Discovery and Monitoring
- Polymer Analysis
- Lipid Analysis

● Innovative MALDI-TOF and TOF/TOF Technology

The smartbeam laser difference

The system incorporates our proprietary smartbeam laser technology for unmatched levels of performance in terms of mass resolution and sensitivity for MALDI mass spectrometry based applications. Capable of being focused and optimized, the smartbeam laser is a superior tool for performing many applications.

Innovation provides increased performance

Using the gridless scoutMTP™ Ion Source in conjunction with microtiter plate formatted MALDI targets, PAN™ (panoramic) broadband mass focusing allows impressive high resolution across a wide mass range and obviates the need for constant instrument tuning.

Enhanced accuracy through better calibration

HPC, High Precision Calibration provides excellent mass accuracy and ensures high levels of confidence in your results. This confidence is often expressed in excellent protein identification levels and sequence coverage in protein identification applications or enhanced confidence in the identification of unknowns.

Custom tailored for your needs

The unique modular design of the instrument provides a number of versatile instrument configurations including: linear-only for screening applications, reflectron mode for advanced molecular identification, TOF/TOF technology (LIFT™) for in-depth characterization tasks.

Enabling new applications for MALDI-TOF

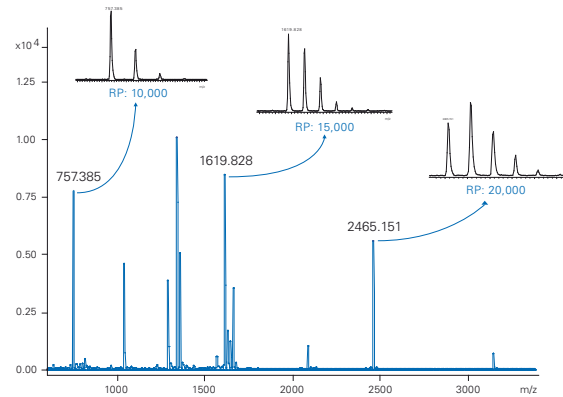
Cutting-edge technology features incorporated into the autoflex III smartbeam enable new uses of MALDI-TOF systems especially as part of powerful new techniques such as MALDI Imaging, TLC-MALDI, or NALDI technology for small molecules analysis.



● Analytical Performance for Challenging Applications

PAN: Providing high resolution and a wide mass range – simultaneously

The autoflex III smartbeams's unique "panoramic" PAN technology enables excellent simultaneous mass resolution across a wide m/z range. This increases the confidence of your results in bottom-up and top-down proteomics/protein analysis applications. Additionally, optimum broadband resolution is achieved without the need for instrument tuning or variation of parameter settings.



PAN: Impressive simultaneous mass resolution across a wide mass range.

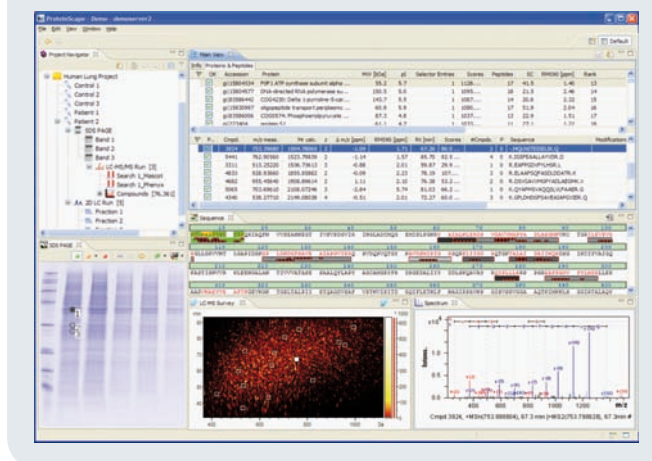
Exceptionally useful data analysis tools

The autoflex III smartbeam is supported by a series of tailored software solutions for fast and reliable data analysis. Intuitive user interfaces make protein characterization and quantitation, PTM-analysis or protein sequencing a simple task.

Easily and productively managing complex proteomics MS data

The autoflex III smartbeam can be equipped with the ProteinScope™ data management system. This data management system organizes all relevant data for proteomics projects – including LC-data, gel data, mass spectra, process parameters, search results and data evaluation. ProteinScope provides a single software platform that combines all relevant data evaluation tools for protein identification, characterization and quantitation.

Proteomics projects management

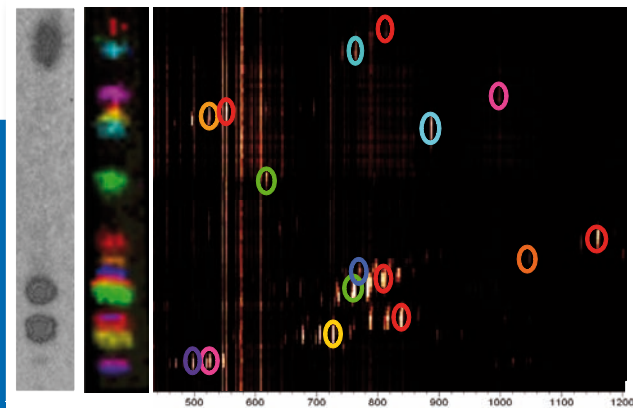


ProteinScope 2: All relevant project information is summarized to provide a perfect overview.

Lipids?

Direct analysis from TLC-plates!

TLC-MALDI is Bruker's proprietary solution for the direct analysis of samples from thin layer chromatography (TLC). TLC-MALDI detection enables highly sensitive read-out of separation traces directly from the TLC plate.



Leading the Way in MALDI Imaging

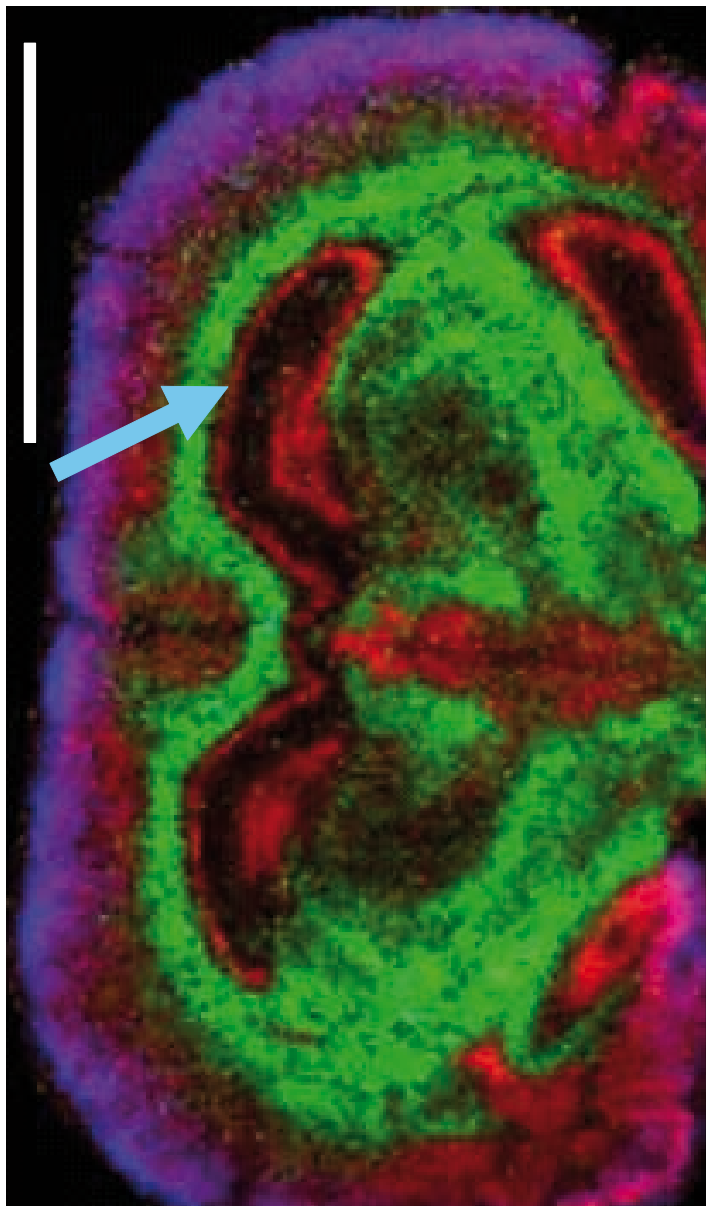
Realizing the promise of Molecular Histology

The unrivaled spatial resolution capabilities of the autoflex III smartbeam in MALDI Imaging applications are driven by a number of unique capabilities of the system. Adjustable smartbeam laser focus size allows pinpoint access to histological samples for tissue imaging applications that can deliver some of the best quality images ever seen from a MALDI mass spectrometer.

Accelerated tissue image analysis

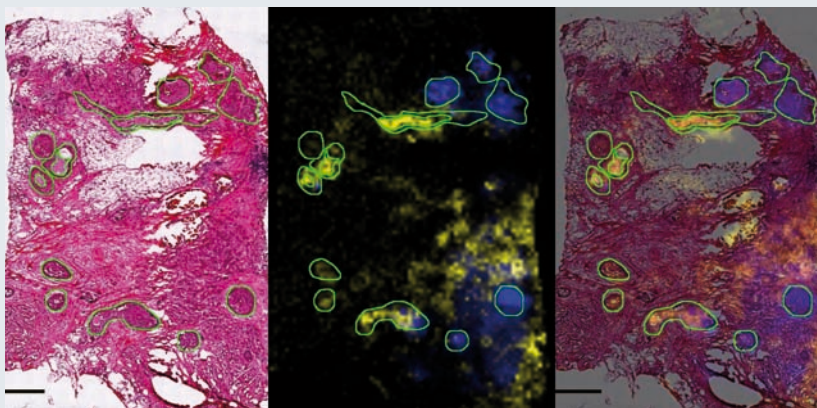
High laser repetition rates of up to 200 Hz for fast spectra acquisition speed up your analysis when scanning tissue sections for Imaging information. Normally a very tedious and time consuming process, with the autoflex III smartbeam system, results are available quickly and sample throughput is greatly enhanced.

This image shows a fine structure (~80 μm thickness) in the rat hippocampus, visualized by m/z 6230 (arrow). Overlays of different molecular signals are shown (6230 Da (red), 7843 Da (blue), 18385 Da (green)). Scalebar: 5 mm. MALDI Imaging resolution is 80 μm .



● An Optimized Comprehensive MALDI Imaging Solution

Molecular Histology



Molecular mass correlates with carcinoma structures. Several carcinomata in situ are marked with green outlines. Left: H&E stain, middle: Molecular image, right: overlay of both images; MALDI resolution: 80 μ m.

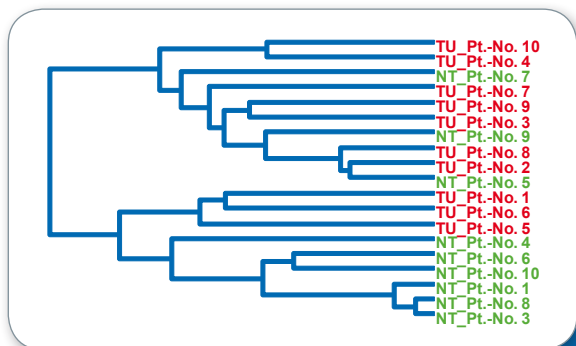
Preserve and examine the histological context of samples

The autoflex III smartbeam allows researchers to precisely correlate the molecular information obtained by MALDI Imaging with traditional histological staining information. Our unique Molecular Histology™ approach simultaneously combines information from MALDI Imaging and histology into an unambiguous and easy to interpret information package.

For more details see Application Note MT-89 and Deiningner et al. (2008). *J. Proteome Res.* 7 (12), pp 5230–5236. DOI: 10.1021/pr8005777

Generate more than just pretty pictures with sophisticated data and statistical analysis tools

Our sophisticated statistical tools allow reconstruction of MALDI images and the ability to perform hierarchical clustering with interactive exploration of the dendrograms based on spectra similarity. Integrated statistical analysis tools can also dramatically speed up analysis time for Imaging experiments.

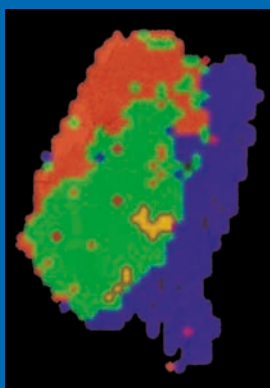


Connective Tissue

Tumor, Clone 2

Tumor, Clone1

Inflammation



Correlate molecular information to clinical information. Bruker Daltonics ClinProTools performs hierarchical clustering according to spectra similarities in minutes. The software allows fast and easy interactive exploration of dendrograms and MALDI images for fast interpretation of results.

Technical Specifications



Cutting-edge MALDI mass spectrometry technology

- smartbeam laser technology: Top performance with any chosen matrix for any sample preparation technique.
- PAN: Simultaneously highest mass resolution across a mass range from 700 to 5,000 Da.
- HPC: High Precision Calibration for best mass accuracy.

Analytical performance

- smartbeam laser with adjustable repetition rate from 1-200 Hz.
- Reflectron Mode:
Impressive resolution $\geq 20,000$ in peptide mass range.
Using PAN technology $\geq 18,000$ resolution simultaneously can be achieved for an extended mass range covering $> 3,500$ mass units.
Superb Mass accuracy of ≤ 5 ppm for peptide mass range.
- Linear Mode:
Excellent resolution $\geq 5,000$.
Brilliant mass accuracy ≤ 20 ppm for protein samples.
- Striking sensitivity in attomole range in both, MS and MS/MS mode.

Compass software suite

- flexControl for quick and easy instrument control.
- flexAnalysis for automatic and interactive data analysis.

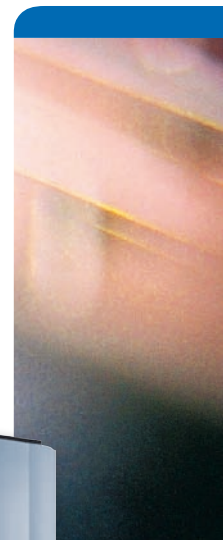
Optional packages:

- BioTools™, the cutting edge software for protein analysis.
- WARP-LC™, the LC-MALDI and protein quantitation software.
- flexImaging™, the software for MALDI Imaging applications.
- PolyTools™, Interpretation of MALDI Polymer Spectra.
- ProteinScape™ database system for proteomics project management.
- Compass Security Pack™, 21CFR part 11 compliance.

Support features

- Self diagnostics.
- Remote on-line service capability.
- IQ/OQ/PV procedures.
- Maintenance contracts in various levels available.

For research use only. Not for use in diagnostic procedures.



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