



microflex™ LRF

- Performance for Screening Applications on the Bench

Great productivity, compact form



The need for confident mass determination is integral to many modern analyses in quality control applications, industry, and basic research fields. The bench-top microflex LRF has the power to address a range of applications and diverse sample types across a broad molecular weight range. With its linear and reflector modes of operation, polymers, peptides, and oligonucleotides may be readily analyzed, and with 15,000 mass resolution, the spectral details necessary for applications such as food authenticity are available for research and routine screening in many applied markets.



Reliable performance in a convenient dimension

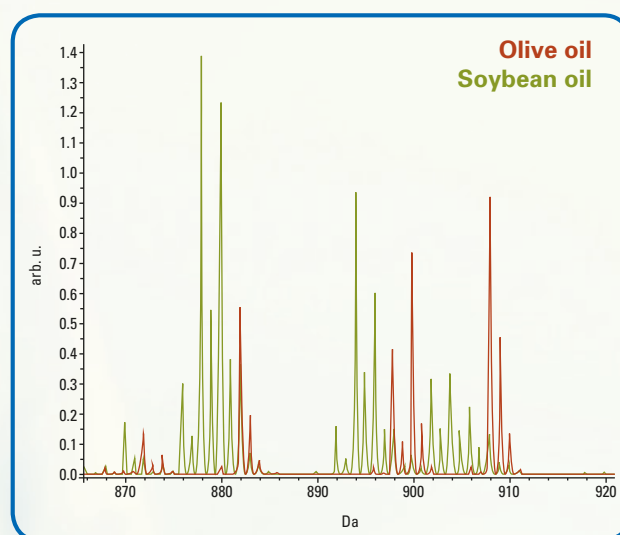
Taking advantage of Bruker Daltonics' long expertise in the design of cutting-edge mass spectrometers, the microflex LRF is designed to be a compact and affordable benchtop MALDI-TOF (matrix-assisted laser desorption/ionization) system. The unique design of the microScout™ ion source and the gridless reflectron give the microflex LRF superior resolution, excellent mass accuracy and outstanding sensitivity – unequaled in this class.

The microflex LRF also offers the benefits of quiet operation (WhisperMode™) by virtue of its no maintenance oil-free vacuum technology, and extended system self diagnostics provide confidence for the day to day stability of results.

Applied markets

Food authenticity and food safety

The world-wide financial impact by food adulteration is huge, and depending on the adulterants used, concerns for human and animal health may also be significant. MALDI-TOF analyses can deliver high value results quickly and affordably, even with samples traditionally difficult to analyze, such as lipids and oils.

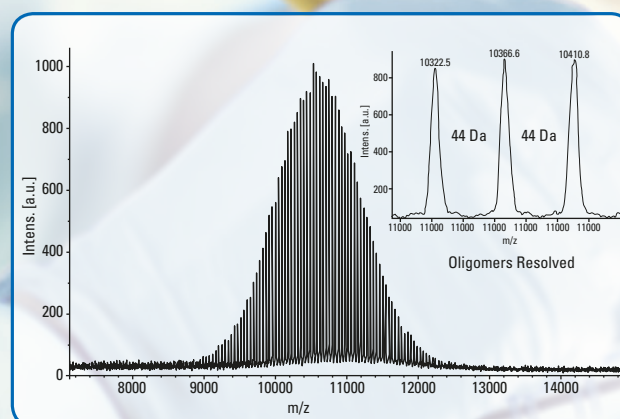


Overlay of MALDI TOF spectra for Olive Oil (red) and Soybean Oil (green), using the microflex LRF's integrated flexAnalysis™ module for automated and interactive data analysis.

The spectral features of edible oils, for example, are complex. Many potential markers can be readily detected with the microflex LRF system for differentiation among different types of oils, as in the case of adulteration, or reveal differences in their source, storage or processing.

Fast and easy QC of polymers, oligonucleotides and synthetic peptides

Simple protocols and easy-to-use software allow for analysis in minutes – from sample preparation to results. Dedicated software packages can facilitate in-depth analysis of polymers. With the on-demand option to collect data in either positive or negative ion mode, and with a linear or reflectron flight path, samples with differing ionization characteristics can be readily screened.



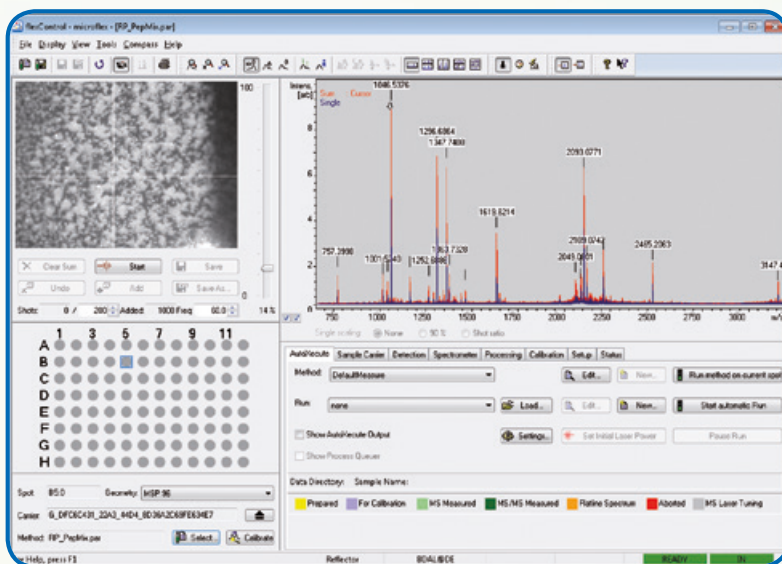
Spectra of a 10 kDa synthetic polymer (Poly-Ethylene Glycol, PEG), collected in reflectron mode.

Easy operation and ready method development

Intuitive instrument control

The microflex LRF operates through the integrated Compass™ software, used throughout our entire MALDI MS product line. The fuzzy-logic based AutoXecute™ engine within the flexControl™ module provides automated optimization of spectral quality for both routine screening and novel sample analyses.

flexControl also offers versatility for data collection, as users may choose manual operation – with total control of spot position, laser power applied, and the number of shots collected – for specific applications.

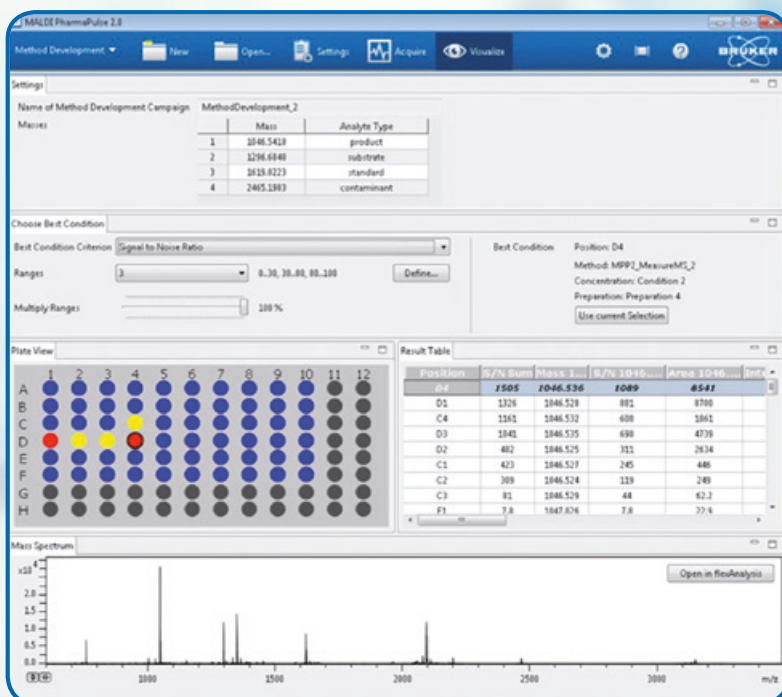


The flexControl dashboard permits both instrument control and rapid data review for a given sample in real time.

Method development made easy

Matrix selection, matrix:sample ratios and the selection of solvent(s) used for sample preparation can be critical to a successful MALDI-TOF MS measurement. Automating the procedures of finding the best conditions for a given analyte saves valuable time and money.

With a new software option method development is rapid and easy. On-the-fly data analysis provides the results already filtered for optimum conditions, and an interactive result display allows the user to browse the data and change the selection criteria at any time.

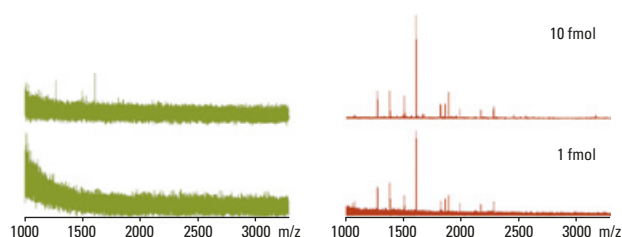


Interactive result display after measurement with automatic selection of best conditions

● Enabling Technology, Proven Performance and Reliability



Depending on the sample type, a larger or smaller diameter AnchorChip target may be selected. The examples above demonstrate crystallization of DHB to a standard stainless steel, 800 μm and 2000 μm AnchorChip targets (left to right).



Myoglobin digest using CHCA matrix on stainless steel (green) vs AnchorChip (red), dried droplet preparation.

AnchorChip technology

Many laboratory sample types, such as polymers and detergents, may spread rapidly on a standard MALDI target, making uniform sample preparation and data collection more challenging and time-consuming. Bruker's patented AnchorChip™ technology provides homogeneous, exactly-positioned samples, enabling more robust and rapid automated data collection.

Other sample types may be difficult to analyze due to their low analyte concentrations. With a 10-100 fold sensitivity increase over traditional stainless steel targets, the AnchorChip also facilitates increased sequence coverage for peptide digests, and can provide an important increase in spectral "fine print" in quality control applications.

Proven instrument performance and reliability

The microflex LRF is built to meet the demands for high performance and data quality in challenging laboratory environments in a compact and affordable package. With its unique microScout™ ion source with state-of-the-art pulsed ion extraction, a 60 Hz nitrogen laser with fiber-optic delivery and variable repetition rate, and a gridless reflectron design for high resolution and high transmission, the microflex LRF system is a powerful and robust instrument for laboratories of any size.

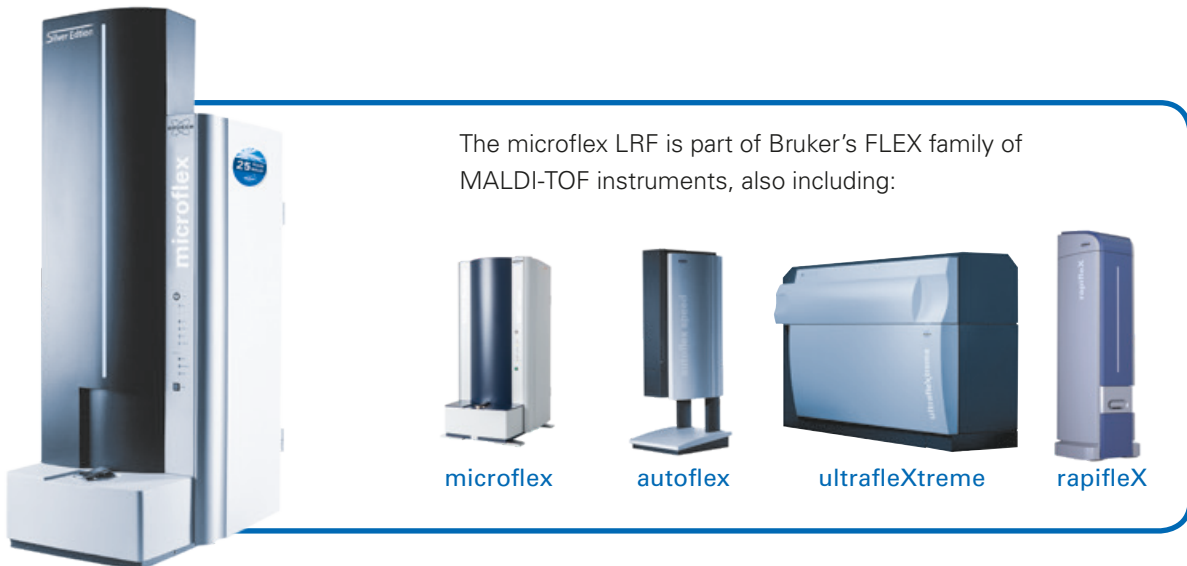
The system also includes MS/MS capabilities via autoPSD (automated post-source decay) including pre-cursor ion selection, and its Compass software suite seamlessly integrates with other software tools including *Polymerix, ProteinScape™, BioTools™, and many others. Bruker's optional Compass Security Pack is also available for 21CFR part 11 compliance in regulated laboratory environments.

Comprehensive support

Bruker Daltonics' comprehensive service concept includes automated instrument self-diagnosis routines and remote service capabilities for online support. Supplementary IQ/OQ/PV procedures are also available.



The benchtop MALDI-TOF solution



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

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