SHIMADZU
Excellence in Science

MO432E

Benchtop Linear MALDI-TOF Mass Spectrometer

MALDI-8020

MALDI-8020: A compact footprint without compromising on performance

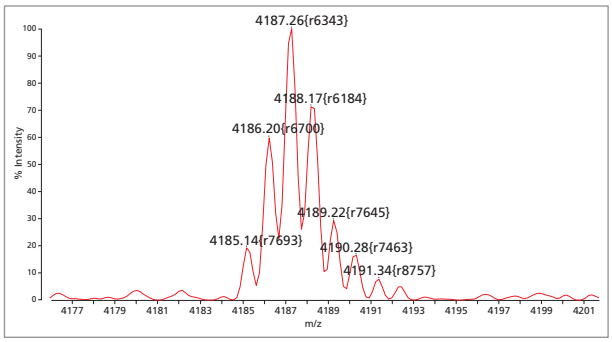
The MALDI-8020 is the latest in a long line of MALDI-TOF products from Shimadzu. This benchtop, linear MALDI-TOF mass spectrometer delivers outstanding performance in a compact footprint, making it an ideal choice for today's increasingly demanding laboratories.

Key features:

- Linear mode (positive ion) MALDI-TOF
- 200 Hz solid-state laser, 355 nm
- Load-lock chamber for fast sample introduction
- UV laser-based source cleaning (patented)
- Small footprint/benchtop design
- Quiet operation (<55 dB)
- Upgradeable to MALDI EasyCare, for automated tuning*

*requires licence

Linear mode instruments have traditionally been the instruments of choice in MALDI-TOF-based quality control (QC) and profiling workflows, and the MALDI-8020 is no exception. Peptides, proteins, polymers or oligonucleotides - the instrument is capable of delivering the performance required for QC applications. Research laboratories will also benefit from the MS capabilities of the instrument through the rapid mass-measurement of samples.

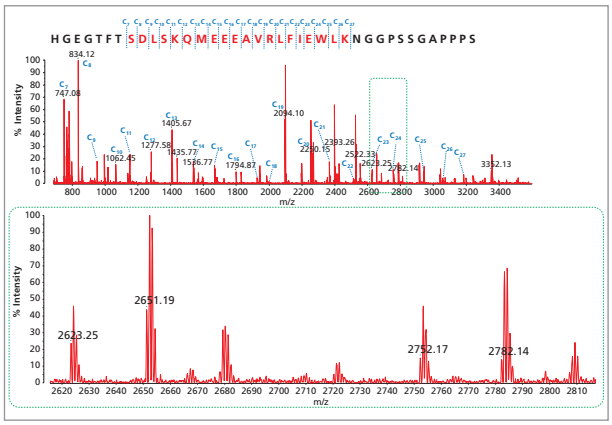


Example of a 4.2 kDa peptide demonstrating an average resolution of >5000 FWHM. Resolution, calculated by the software, is shown in brackets.

Sample target solutions

Compatible with the FlexiMass™ series of microscope slide-format sample targets, these slides provide researchers with options depending on their experimental workflow.

The individually barcoded, single-use FlexiMass™-DS slides provide a convenient solution for more routine or defined workflows. Ready-to-use, these disposable targets eliminate the need for cleaning and the risk of carryover. Alternatively, the reusable stainless steel FlexiMass™-SR sample targets provide a cost-effective, longer-term solution to sample preparation.

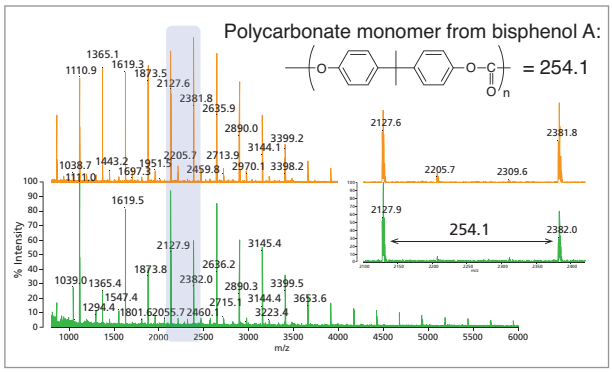


MALDI-In-Source Decay (MALDI-ISD) spectrum of native Exendin-4 (top panel) showing matched fragment ions consistent with the amino acid sequence. Bottom panel: expanded region of the mass spectrum showing the isotopically resolved fragment ions.

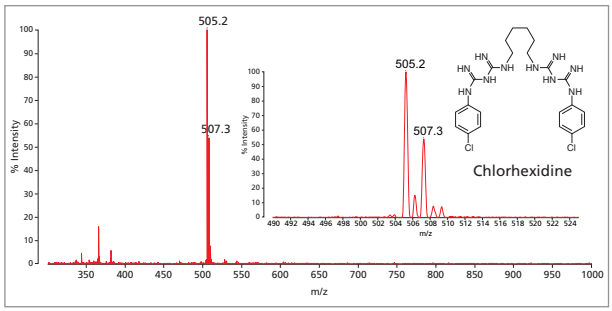
TrueClean™ automated source cleaning

To maintain instrument performance over time, the MALDI-8020 features wide-bore ion optics - a feature used on our existing MALDI-TOF products - which minimize the risk of source contamination over time, providing a robust platform.

To maximize uptime, the system is equipped with TrueClean - an automated, rapid (<10 min) UV laser-based source cleaning which can be used to clean the extraction electrode *in-situ* without breaking instrument vacuum.



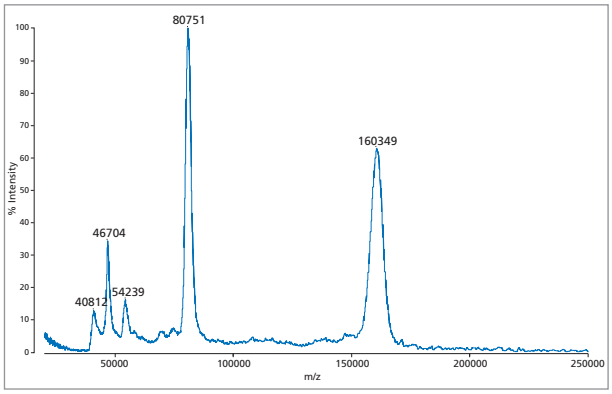
Polymer analysis: polycarbonate from a CD (green spectrum) and polycarbonate standard (orange spectrum).
Inset: expanded view of the highlighted region.



Analysis of chlorhexidine gluconate in mouthwash solution. Sample was prepared with MALDI matrix without any clean-up or dilution.
Inset: expanded view showing peak at 505.2 m/z.

User-controlled access for Data Integrity

Operating under the control of *MALDI Solutions*™ software, the software features a centralized, secure Microsoft® SQL database which can be used to store everything from sample lists and acquisition Parameter Sets to acquired MALDI data. The system is managed by an Administrator and customizable user profiles provide control over access to the database and operation of the instrument. All users require login passwords and the data in the database is encrypted.



Example of higher mass analysis using immunoglobulin A (IgA)

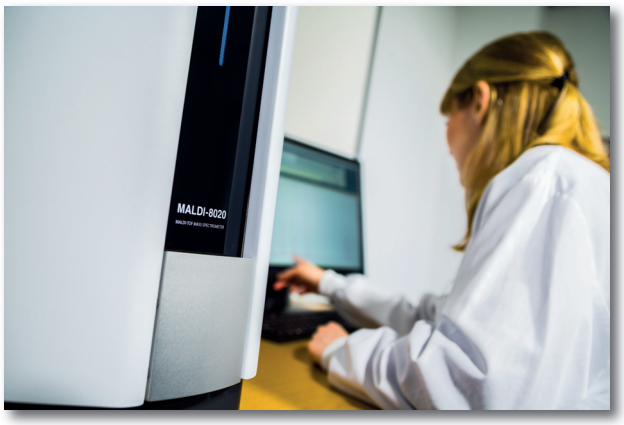
Quality as standard

As mass spectrometry moves into clinical laboratories, the MALDI-8020 is the perfect choice for researchers developing MALDI-based diagnostic methods†. The system is designed and manufactured to ISO 9001:2015 and ISO 13485:2016 quality management standards and is CE compliant.

Through the selection of components demonstrating improved longevity and performance, and by reducing the number of component parts, our engineers have created a reliable and robust platform capable of delivering outstanding performance in a small footprint.

The MALDI systems are maintained by trained service support engineers who form part of the Shimadzu global distribution and support network. Routine maintenance is simplified thanks to the instrument design, providing our engineers with easy access to commonly serviced parts.

† For Research Use Only. Not for use in diagnostic procedures.



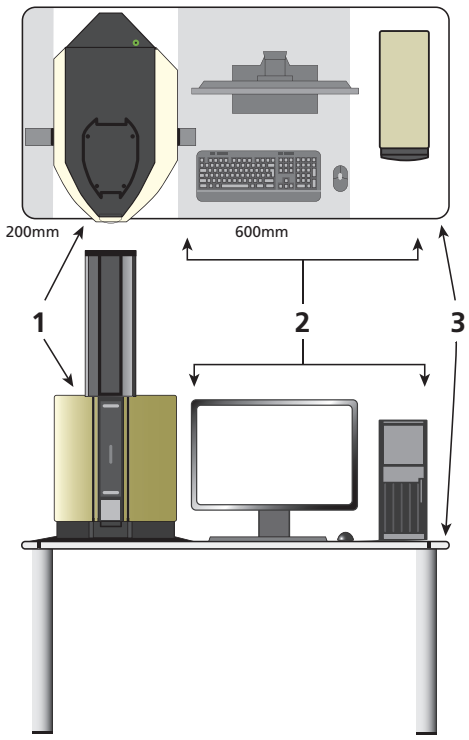
Specifications	
Mass range	*m/z* 1 - 500,000
Mass resolution	>5000 FWHM – ACTH 18-39 (*m/z* 2465)
Accuracy	<20 ppm with internal calibration
	<150 ppm with external calibration†
Sensitivity	250 fmol – bovine serum albumin (loaded)
	250 amol – Glu-1-Fibrinopeptide B (loaded)
Size (w x d x h)	450 x 745 x 1055 mm [17.7" x 29.5" x 41.5"]
Incl. stabilizer	600 x 745 x 1055 mm [23.6" x 29.5" x 41.5"]
Weight	92 kg

† Nearest neighbour external calibration on FlexiMass-SR48 target, within 30 minutes
All performance data are acquired using standard test samples on a FlexiMass-SR48 stainless steel target.

Installation requirements		
Utilities	Power	100 to 240 VAC, 50/60 Hz, 1000 VA single phase
		A 'clean', stable and continuous mains supply is required for reliable operation
Environment	Temperature range	ambient 18°C to 28°C for performance
		ambient 15°C to 32°C for operation
	Relative humidity	less than 70%, non-condensing

Installation Example

No.	Description	Dimensions (mm)			Weight (kg)
		W	D	H	
1	MALDI-8020	600	745	1055	92
2	Control PC, monitor, keyboard and mouse (reference)	850 approx.	550 approx.	500 approx.	10 approx.
3	Table (reference)	1500	750	750	



The MALDI-8020 is designed and manufactured under the Kratos Analytical Ltd. quality management system and is CE compliant, CB certified and is tested to UL standards. The MALDI-8020 is a Class 1 laser product.

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