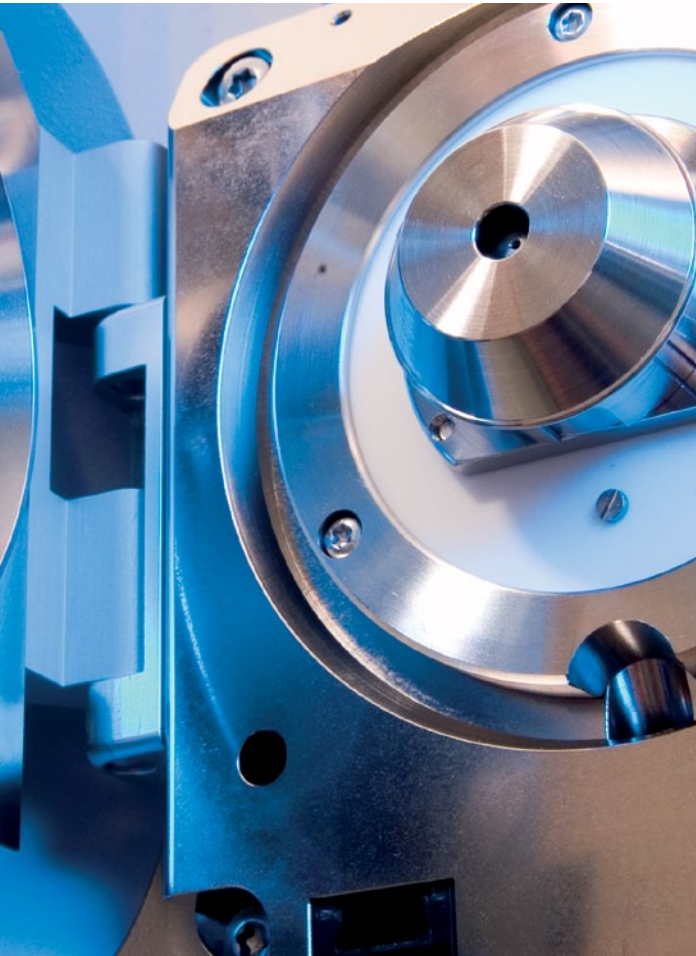




compact™

- Instant Expertise™ in accurate mass LC-MS/MS

Research-Grade Technology Meets High Productivity



The Ultra-High Resolution (UHR) TOF technology pioneered by Bruker sets new standards and expectations as to what can be achieved using accurate mass LC-MS/MS.

The power of technology demanded for research applications is now available in a compact, robust and economic bench-top system. Research-grade technology applied to every routine analytical task. The new Bruker **compact** QqTOF features:

- 50 GBit/sec sampling technology maintaining full specification resolution even during ultrafast chromatography
- Increased dynamic range for definitive trace analysis from complex, high-background matrices
- Low picogram sensitivity to rival the best triple-quadrupole sensitivity while delivering full scan, precise mass data
- Superior 1 ppm mass accuracy ensured by automated calibration

Instant Expertise

You expect the fullest possible insight into your sample. **compact** delivers the highest quality results without compromise. All specified performance parameters, simultaneously delivered in a single run with no need for tuning or optimization is what makes **compact** unique.

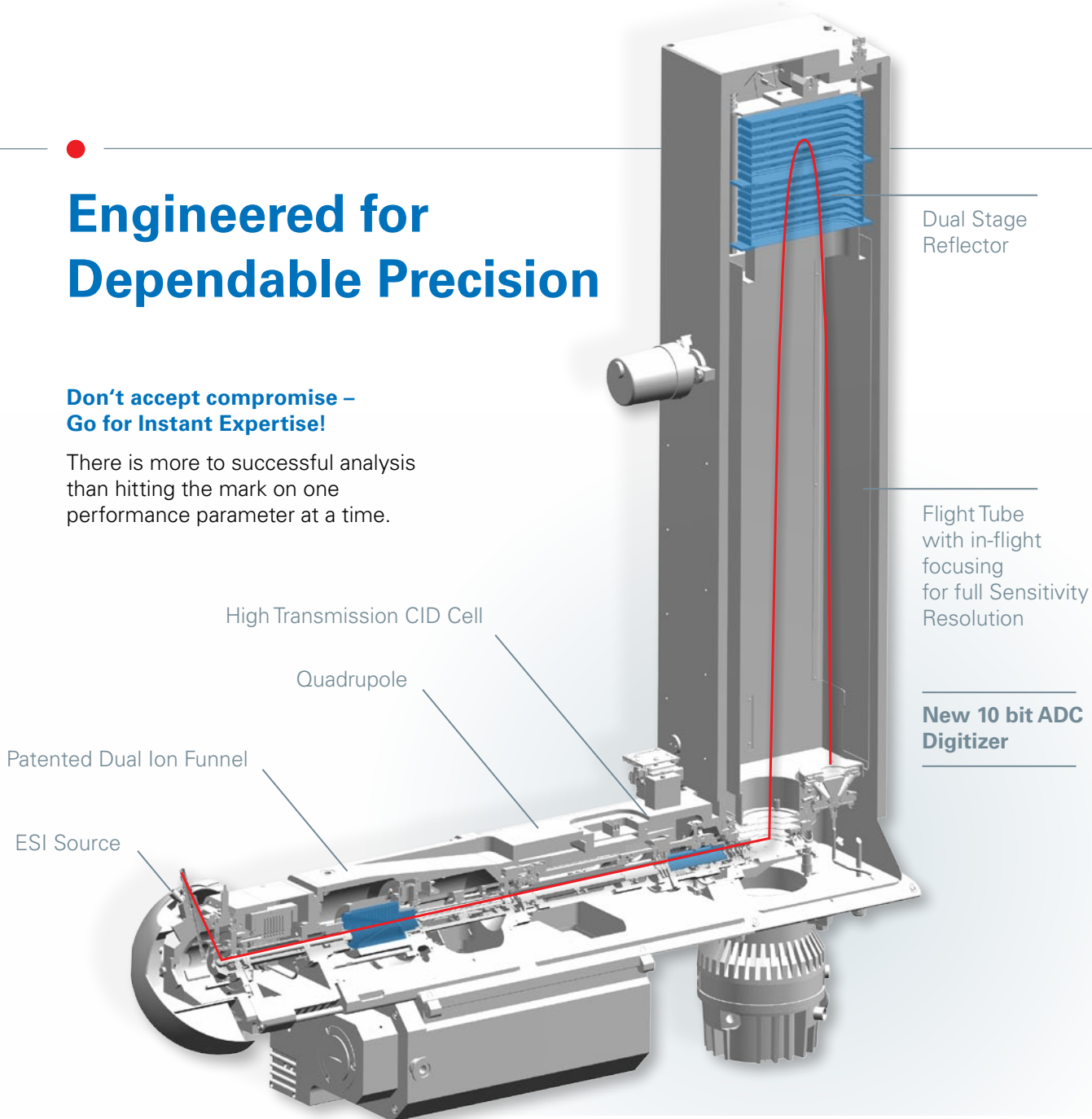
Bruker's "one-shot analysis" philosophy is embodied in **compact**, accelerating productivity by enabling every analyst to deliver expert caliber results even on the first run.

compact is teamed with world leading application solution software. Your expert partner, whatever your challenge. Synthetic chemistry confirmation, advanced screening and identification, proteomics and metabolomics, or intact protein and biopharmaceutical analysis **compact** delivers instant expertise to your laboratory.

Engineered for Dependable Precision

Don't accept compromise – Go for Instant Expertise!

There is more to successful analysis than hitting the mark on one performance parameter at a time.



Optimize your LCMS methods without compromising: compact™ delivers all specified performance parameters simultaneously to solve your analytical challenges.

Full Sensitivity Resolution – Having to choose between resolution and sensitivity on other instruments restricts depth to which you can understand your sample.

Enhanced dynamic range during real LC time scales – Greatly increased robustness to sample variation allowing reduced sample pretreatment; especially desirable in high-throughput quantitative applications.

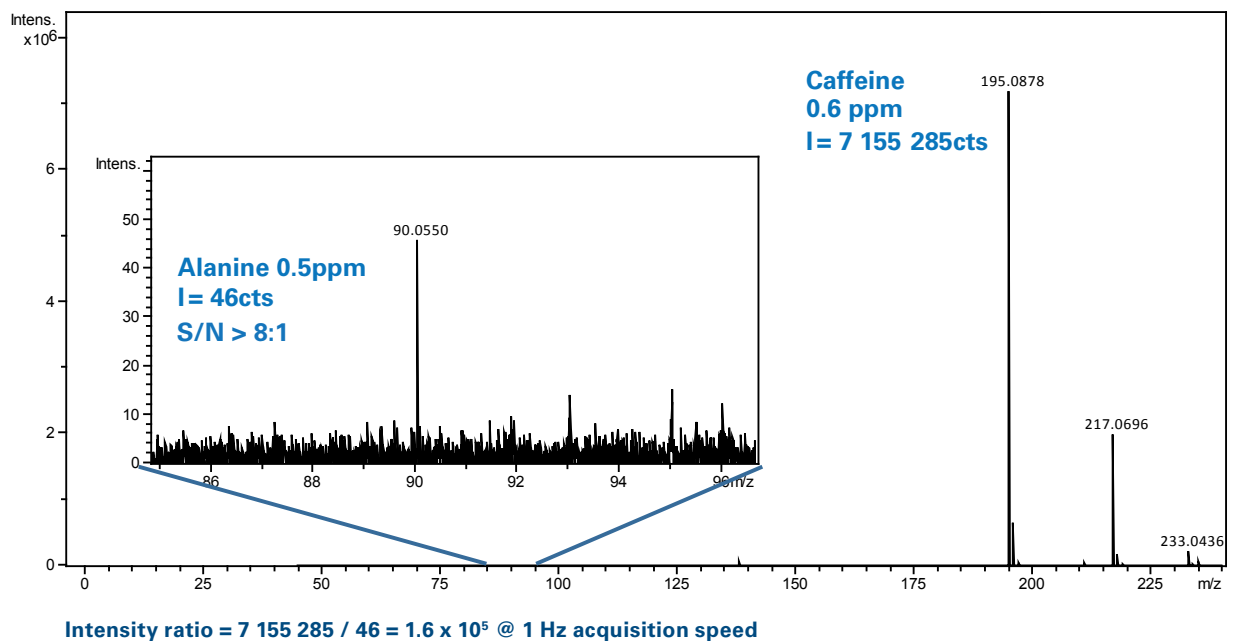
One shot plug & play acquisition with triple-quad standard sensitivity – Ensuring qualitative and quantitative results in one LC run with fastest time-to-success.

Let the compact™ achieve your goals in:

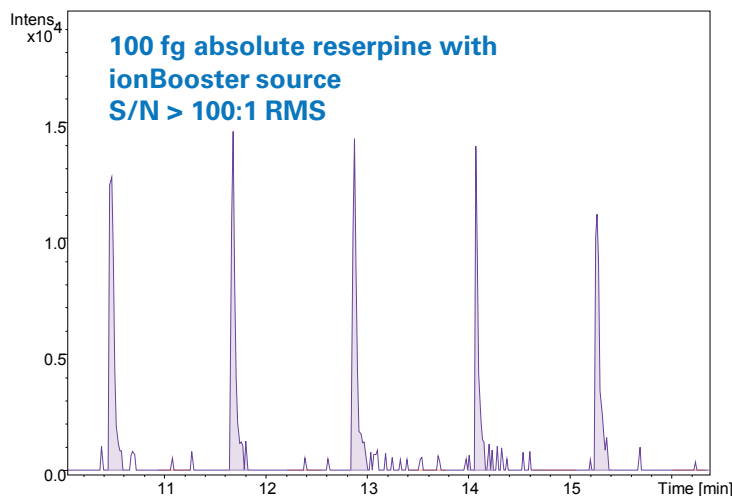
- Synthetic chemistry support
- Forensics and doping control
- Drug metabolite, degradant and impurity identification and quantitation
- Biomarker discovery and validation in proteomics and metabolomics
- Intact protein analysis and characterization of biopharmaceuticals

The Key to Sensitivity and High Dynamic Range

5 orders of magnitude intrascan dynamic range at LC speed



Repetitive injection of reserpine displayed as BPC of m/z 609



Advantages of the new compact™ time-of-flight detection system

Very fast detection and digitizing technology is key to maintaining full resolution at all acquisition speeds and providing high dynamic range to detect the smallest peaks in the presence of high-abundance background matrix. The new 10 bit ADC digitizer also delivers Bruker's renowned True Isotopic Pattern, an essential feature for *de-novo* chemical identification using SmartFormula 3D™.

Ultimate sensitivity

Groundbreaking sensitivity improvements bring **compact's** trace analysis capabilities to levels usually associated only with targeted assays on triple quadrupole LC-MS/MS. Now, the benefits of full-scan data and precise mass confirmation can be brought to all routine screening assays.

Your Partner in Chemistry Support

Your in-lab, publication-ready facility for synthetic chemical confirmation delivered and managed!

Compass OpenAccess™ provides an automated walk-up accurate-mass system for chemical formula identification, confirmation and general LC-MS measurements.

The client-server based software supports a wide variety of workflows—especially for synthetic and medicinal chemists—with no MS expertise required. Immediate, publication-quality accurate mass data reports are automatically emailed to the user, transmitted to e-labbook and archived.

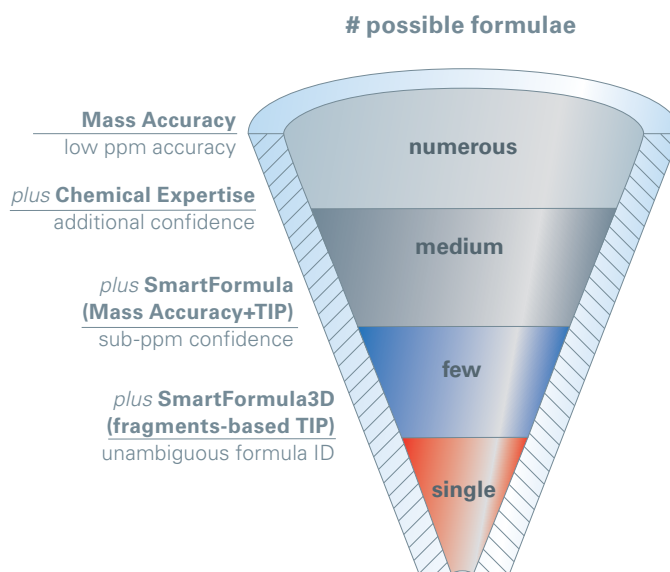
Compass OpenAccess has full group facility management tools, vastly reducing the management burden of a multi-user core facility, whether in industry or university settings.

SmartFormula determination

Three dimensions of information simultaneously raise your analytical tasks to unrivaled heights of confidence:

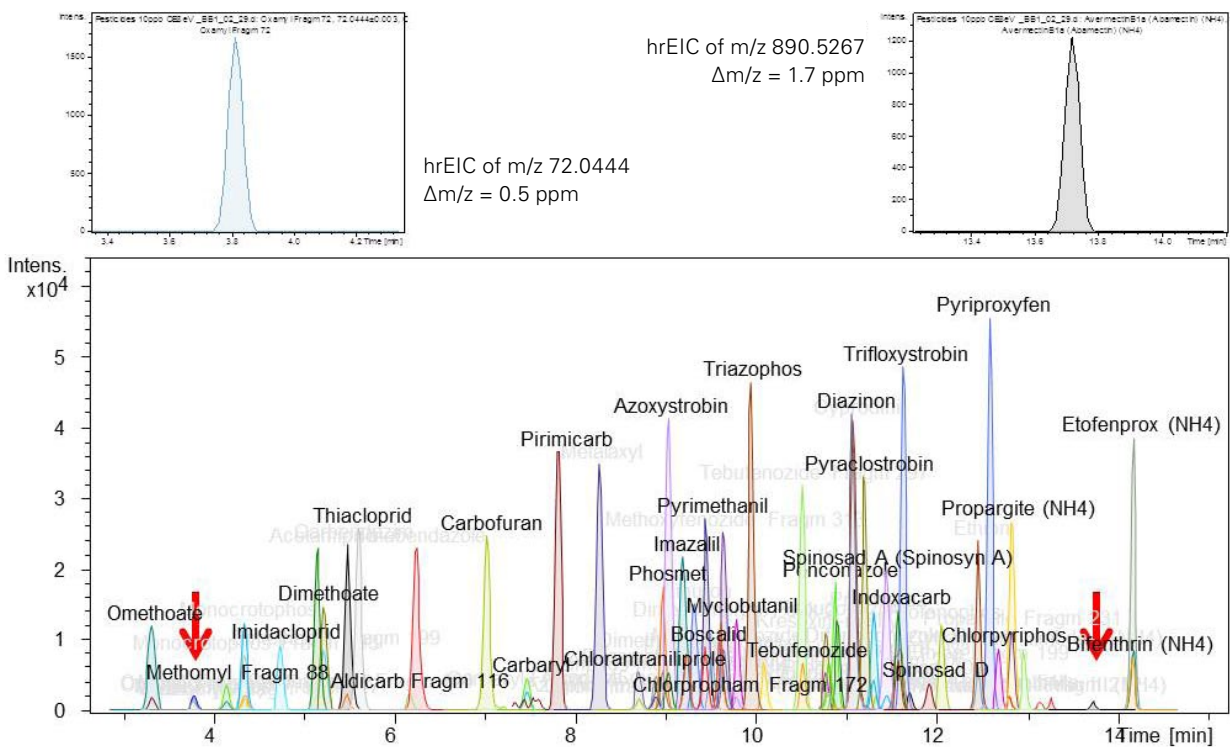
- Measure with superior accurate mass
- Validate with True Isotopic Pattern (TIP) analysis
- Also benefit from accurate mass and TIP in analysis of fragments in MS/MS mode

Mass accuracy, chemical knowledge and SmartFormula 3D™ clearly limit the number of possible formulae in molecular formula generation: for confident determination of the elemental composition of a given peak.



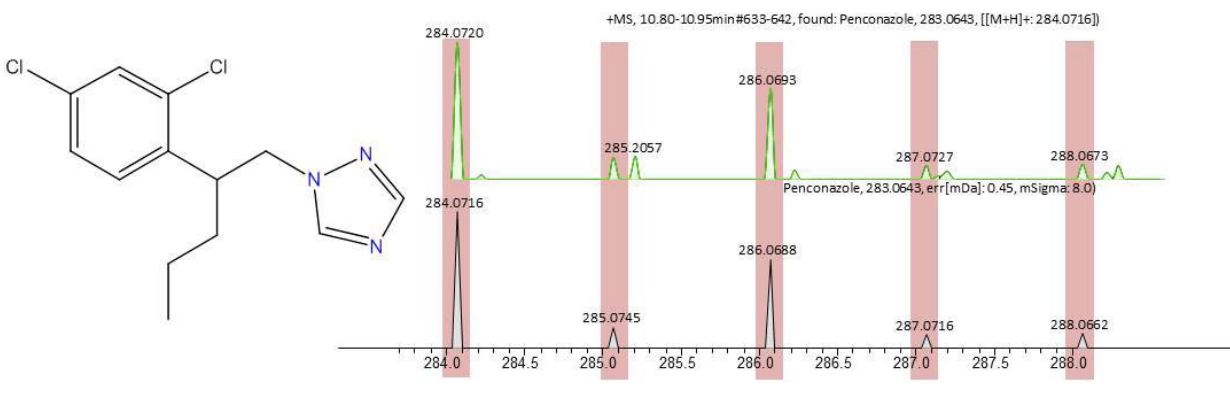
One Run Discovery and Validation of ...

Multi-target screening on 10 ppb level



High-resolution Extracted Ion Chromatogram (hrEIC) identifying 60 pesticides in a single LC-TOF run. All analytes across the entire mass range of 70 up to 900 m/z are detected with highest sensitivity maintaining full resolution at U-HPLC speed. The new CID cell with uncompromised mass transfer and sensitivity allows for small molecule screening, confirmation and quantitation in a single LC-TOF run.

Confirmation of molecular formula with instant accurate mass and isotopic fidelity

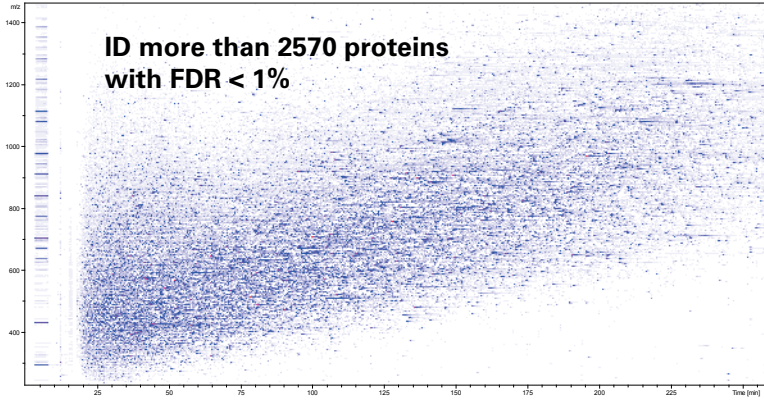


Measured (top) against theoretical spectrum (bottom) of Penconazole (C₁₃H₁₅Cl₂N₃) out of the same data set showing a perfect fit of isotopic ratios and spacing. SmartFormula™ confirms the identification in spite of matrix background signals.

Biomarkers and Small Molecules

Introducing new universal acquisition strategies – best results run over run

In-depth identification analysis of complex proteomics samples



ID more than 2570 proteins with FDR < 1%

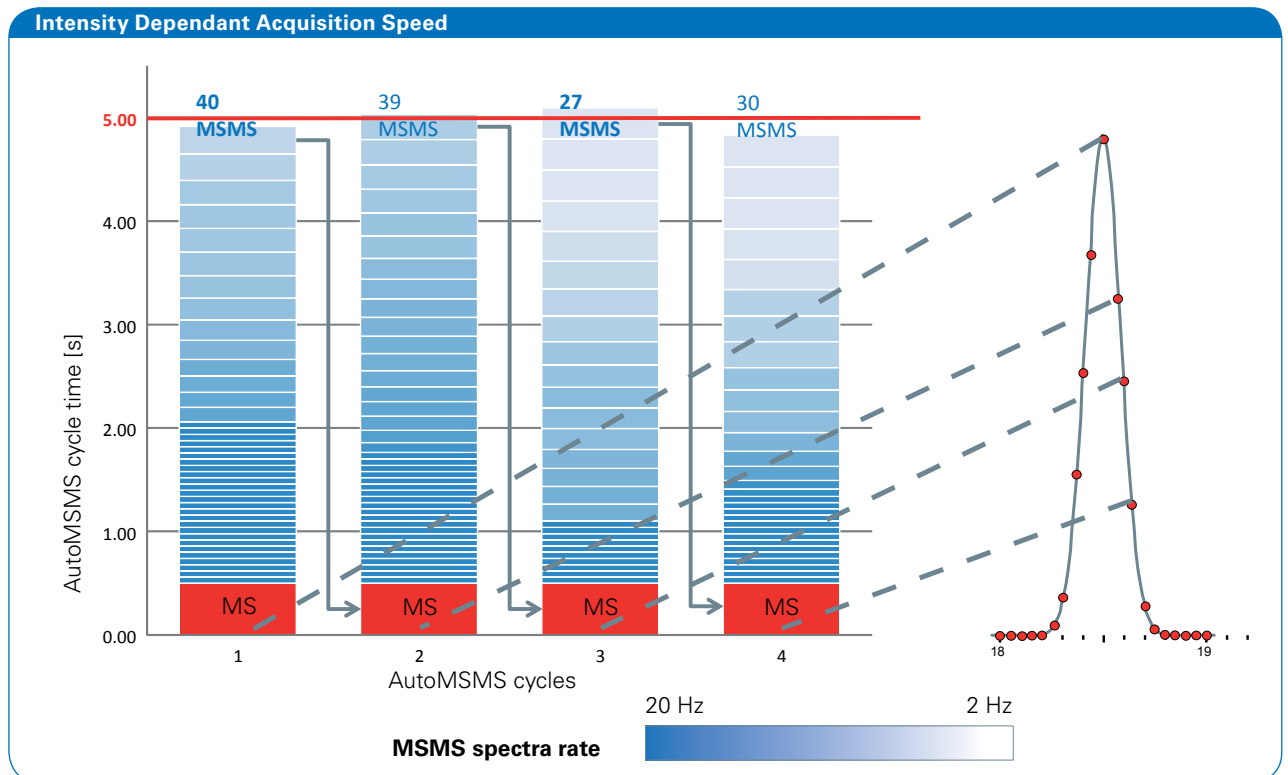
New parent acquisition / selection

IDAS

One Method Fitting All Samples

Sample amount	3 µg	20 µg
Gradient	4 h	90 min
ID @ 1% FDR	2575	631

LC auto MS/MS survey plot: A 3 µg digest of human HeLa cells was separated on a 50 cm column with 4 h gradient on a compact LC-MSMS system. The instrument was operated with new IDAS™ (Intensity **D**ependent **A**cquisition **S**peed) parent selection and acquisition strategies to obtain optimum results independent from sample complexity or amount (see Bruker App-Note LCMS-81 for more details about IDAS). This strategy enables a higher quality of acquired spectra (> 50% peptide identification rate) while the corresponding method can deliver optimum results from any sample with no adjustments.



IDAS: Illustration showing an example of time cycle handling with the Intensity **D**ependent **A**cquisition **S**peed: the number of precursors is chosen dynamically to maintain the constant cycle time and the MS/MS spectra rate is adapted to each precursor intensity.

Source Options

Wide choice of ionization and coupling techniques for a broad range of sampling including insoluble compounds:

- ionBooster source
- GC-MS coupling
- APCI II (atmospheric pressure chemical ionization) source
- Direct Probe option for solids
- APPI II (atmospheric pressure photo ionization) source
- CE-MS coupling with grounded needle
- CaptiveSpray NanoElectrospray source
- CryoSpray source

LC Options

Bruker fully supports and integrates a wide range of leading HPLC systems, autosamplers and accessories.



GC-MS coupling



Direct Probe mounted on an APCI II source



APPI II source

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

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