

QMASS LCMS 8200

LC-MS/MS System



Description:

The QMASS LCMS 8200 is a high-throughput LC-MS/MS preprocessing and analysis system designed to meet the needs of various high-throughput LC-MS/MS preprocessing and analysis, such as those in the fields of environmental monitoring, food safety, forensic science, drug development, and metabolomics research.

Features

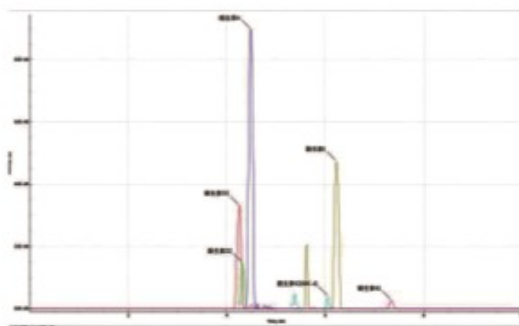
- **Enhanced Sensitivity & Range:** Provides higher sensitivity and a wider quantification range in complex matrices.
- **High-Throughput Analysis:** Fast and stable polarity switching and MRM scanning speed enhance throughput and analytical efficiency.
- **Robust Design:** Maintains excellent anti-interference capabilities and durability in complex matrices.
- **All-in-One Ion Source Technology:**
 - Proprietary High-Efficiency APCI and ESI ion sources.
 - Modular installation for easy maintenance.
 - Unique heating mode enhances matrix tolerance and improves ionization efficiency.
- **High-Performance Vacuum System:**
 - Integrated vacuum system with turbomolecular pump + dry pump combination.
 - Achieves ultimate vacuum of better than 5×10^{-7} mbar.
- **High Sensitivity Detection:**
 - High-sensitivity detector and high-speed data acquisition card.
 - Ensures the accuracy and reproducibility of trace substance detection.

- **Advanced Mass Analyzer:**
 - Proprietary RF segmented quadrupole control technology and high-precision ceramic gold-plated quadrupole interaction.
 - Wider mass range and more stable operation.
 - (Mass range configurable up to 3000 m/z based on customer needs)
- **User-Friendly Software:**
 - Proprietary QExpert workstation for method development, instrument control, data acquisition and processing, report generation, and secure audit trails.
 - Offers comprehensive data source and compliance management (compliant with FDA 21 CFR Part 11).
- **Quality & Reliability:**
 - 100% of core components are independently designed and manufactured.
 - Ensures stable after-sales maintenance service cycle and service quality.
 - Compatible with HPLC to UHPLC systems from different manufacturers and brands.

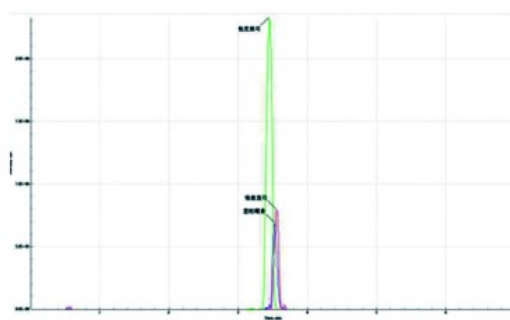
Qexpert Workstation: Feature-Rich Software for Mass Spectrometry

- **Proprietary Software Platform:** Our independently developed software empowers you with comprehensive control over method development, instrument operation, **data acquisition, processing, and report generation.**
- **Enhanced Security & Traceability:** Benefit from built-in features for secure audit trails, ensuring data integrity and compliance. Fully compliant with FDA, CFR, GMP/GLP regulatory requirements.
- **Customizable to Your Needs:** We offer customizable software solutions tailored to your specific laboratory workflow.
- **Workflow Chart: Depicts the key steps: Method Setup -> Data Acquisition (Compliance) -> Data Processing -> Report Generation**
- **Expansion Functionality:**
 - Database
 - Qualitative Analysis
 - Custom Report Templates

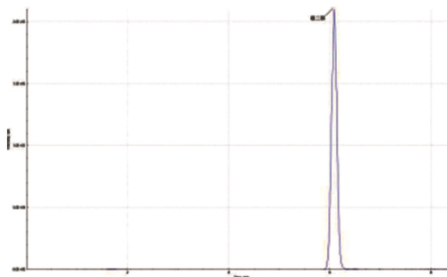
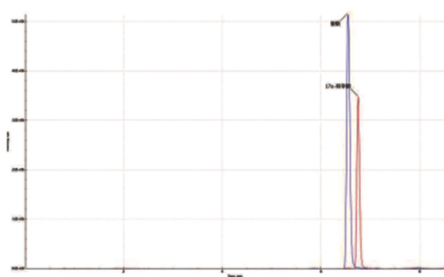
Application



Fat-soluble vitamin detection



Tacrolimus and related compounds



Hormones

I. Performance

- The system supports a four-channel UHPLC configuration, capable of automatically switching between four channels for liquid phase analysis. The software can simultaneously control the operation of the four-channel liquid phase and mass spectrometer to meet high-throughput analysis requirements.
- Simultaneously accommodates and continuously analyzes 6 x 96-well microplates. The autosampler can automatically interact with the front-end high-throughput screening system. The autosampler sample tray can be automatically ejected and closed through software.
- Maximum pressure tolerance of the system during sample analysis: 16000psi

II. Infusion Pump

- UHPLC Pump Gradient Type: Binary gradient mixing, with standard solvent switching valve, which can realize the mixing of A1 or A2, B1 or B2.
- The pump is equipped with two-channel degassing and SealWash sealing cleaning kit to improve the life of the plunger rod when using high-salt mobile phases.
- Pump flow rate range: 1ul/min-10ml/min
- Pump flow rate accuracy: $\pm 0.2\%$
- Infusion Method: Fully automatic infusion, no need to manually switch valves, software control can be used.

III. Autosampler

- The autosampler is refrigeration, and the injection accuracy: $\leq 0.5\%$ RSD (1-10ul injection volume)
- Moreover, it can simultaneously place 3 x 96-well microplates or 3 standard 48-position sample vial racks.
- Injection method: full loop injection/partial injection/microliter carryover injection. Small amount of loss.

- The autosampler adopts a touch-type automatic door opening method, and the sample tray can be automatically ejected and closed through software control to facilitate interaction with the fully automatic pretreatment system.
- Quantitative Loop Volume: Standard configuration 100ul

IV. Column Oven

- Temperature Range: Room temperature +5°C to 70.0°C (when room temperature is 20°C), 0.1°C increments
- Temperature Accuracy: $\pm 1.0^{\circ}\text{C}$
- Column Capacity: 6 x 100mm long chromatographic columns and 2 sets of column switching valves (large capacity)

V. Mass Spectrometer Section

- Ion Source: Equipped with independent electrospray ionization source (ESI) and atmospheric pressure chemical ionization source (APCI), non-composite ion source, ion source switching does not need to vent the mass spectrometry vacuum system.
- The ion source adopts two-way auxiliary heating atomization gas, and the auxiliary heating gas temperature can reach 750°C, which can ensure the maximum ionization efficiency. There is an active exhaust device in the ion source.
- Ion source interface (ie ion introduction system): Conical hole design, no capillary (radius <1mm) structure, and has a heated gas curtain gas for backflushing, which can be heated up to 300°C, is not easy to block, and is easy to maintain daily.
- Collision Cell: 180-degree curved linear acceleration collision cell, effectively removing neutral particles.
- Mass Analyzer:: Triple Quadrupole.
- Quadrupole Scanning Speed: up to 40000amu/sec; Positive and negative ion switching: 10ms.
- Sensitivity:
- ESI+, MRM mode: 1pg reserpine, on-column injection, $S/N \geq 800,000:1$
- ESI-, MRM mode: 1pg chloramphenicol, on-column injection, $S/N \geq 800,000:1$
- APCI+, MRM mode: 1pg reserpine, on-column injection, $S/N \geq 500,000:1$

VI. Software Section

- The instrument control software and data processing software are independent of each other; the instrument control software can easily realize the control of the four-channel liquid chromatography and mass spectrometry system, and can realize the rapid sequence sorting of the sample disk, the simultaneous operation and automatic switching of the gradient of the four pump systems.
- The data processing software can perform data spectrum browsing, chromatogram/mass spectrum display, ion pair extraction, spectrum comparison, peak statistics (retention time, peak area statistics calculation), ion pair abundance ratio display, spectrum multiple smoothing algorithm processing, signal-to-noise ratio calculation, manual/automatic integration, batch processing method

establishment, quantitative analysis method establishment, data batch processing quickly completes qualitative and quantitative analysis and other functions, and automatically generates various qualitative and quantitative analysis reports.

- Support automatic tuning function, with audit trail, database customization and optimization, in line with FDA, CFR, GMP/GLP regulatory requirements.

- **VII. Supporting Devices**

- The whole set of instrument air supply is equipped with a nitrogen generator
- Provide supporting UPS power supply and workstation

VIII. Configuration List

- UHPLC Binary Gradient Pump
- Refrigerated Autosampler
- Two-Channel Online Vacuum Degasser
- Large-Capacity Cooled Column Oven
- Pressure Resistant to 16000psi Column Switching Valve
- Quaternary Solvent Switching Valve
- Solvent Tray
- Mobile Phase Bottle
- Installation Toolkit
- Instrument Control Software and Data Processing Software
- Supporting Workstation
- Nitrogen Generator and Uninterruptible Power Supply
- Triple Quadrupole Mass Spectrometer Equipped with ESI and APCI Ion Sources

IX. Working Environment Requirements

Name	Metrics
MS Main Unit Power Supply	200 VAC to 240 VAC
MS Main Unit Power	1500w
Auxiliary Mechanical Pump Power Supply	200 VAC to 240 VAC
Auxiliary Mechanical Pump Power	1500w+1500w (Two Units)
Nitrogen Generator Power Supply	200 VAC to 240 VAC
Nitrogen Generator Power	1100w-1200w
Liquid Pump Power Supply	100 VAC to 240 VAC
Liquid Pump Power	150w (Reference Value, Different brands have differences)
Liquid Injector Power Supply	100 VAC to 240 VAC
Liquid Injector Power	110w (Reference Value, Different brands have differences)
Column Oven Power Supply	100 VAC to 240 VAC
Column Oven Power	170w (Reference Value, Different brands have differences)
Gas Consumption	Nitrogen&Zero Air& Air
Ambient Temperature	15 °C to 30 °C (59 °F to 86 °F)
Hourly variations	Cannot exceed 2 °C (3.6 °F) per hour.
Relative Humidity Level	20% to 80% Non-Condensing
Altitude	≤2000m (6562ft)

X. Liquid Mass Spectrometer Size Parameters

Configuration Description	Equipment (Per Unit)	Height mm	Width mm	Length mm	Weight kg
Standard	Mass Spectrometer X 1	575±3	840±4	880±4	140±2
Standard	Mass Spectrometer Carton X 1	805±10	1100±10	1100±10	60±1
Standard	Roughing Pump X 2	386 X 2	353 X 2	522 X 2	59 X 2
Standard	Roughing Pump Carton X 2	570 X 2	480 X 2	800 X 2	7 X 2
Optional	LC (Typical Value) X 1	580	370	470	54±1
Optional	Nitrogen Generator X 1	700	550	720	100
Optional	Workstation X 1	750	900	3000	Recommended Load ≥400