

ELITE



MS² Vertical 9020

LC-MS/MS System

MS² Vertical 9020 LC-MS/MS

ELITE HPLC

Tandem Quadrupole Mass Spectrometry System

- Curved collision cell design efficiently eliminates memory effects and cross-contamination.
- High-precision, low-temperature drift quadrupole mass analyzer with a wide mass range (m/z 5-3000 amu) enables high-mass organic detection.
- The ESI/APCI ion source supports ultra-high temperature of up to 750°C to meet diverse analytical needs.



Ultra-High Performance Liquid Chromatography System

- Comprehensive EMC compatibility completely eliminates electromagnetic interference and ensures robust operation; high-pressure tolerance design with a pressure resistance of up to 1300 bar (about 18,800 psi) enhances separation efficiency.
- The chromatographic pump features a highly integrated solvent switching system, enabling dual high-pressure binary operation of the high-pressure binary assembly and simplifying complex workflows.
- The autosampler's rapid injection mode and cooling function ensure fast and robust analysis, while online derivatization and dilution functions improve analytical efficiency.
- The column oven's frequency-conversion temperature control technology provides precise temperature regulation, ensuring analytical reproducibility.

LC/MS Workstation

- The LC/MS workstation features an interactive Chinese interface that is simple and easy to learn. It enables simultaneous control of both the LC and MS systems, realizing high-throughput qualitative and quantitative analysis and optimization, as well as efficient data processing. The software also offers customizable functions and report formats to meet specific user needs.

Application Areas

- MS² Vertical 9020 LC-MS/MS is widely used in biopharmaceuticals, clinical testing, food safety, environmental analysis, forensics, new drug R&D and QC for both chemical drug and Traditional Chinese Medicine (TCM), new materials and chemical product development.



MS² Vertical 9020 LC-MS/MS

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Tandem Quadrupole Mass Spectrometry System

Ion Source

- Heated auxiliary gas design, enabling temperature ramp-up to 650°C+ within 30 seconds.
- Flow rate range 1 μL/min – 3 mL/min, with no splitting required.
- Plug-and-play design, allowing replacement without additional tools or venting.
- Integrated exhaust trap assembly, preventing gas backflow in the sealed ion source enclosure.

Ion Transmission

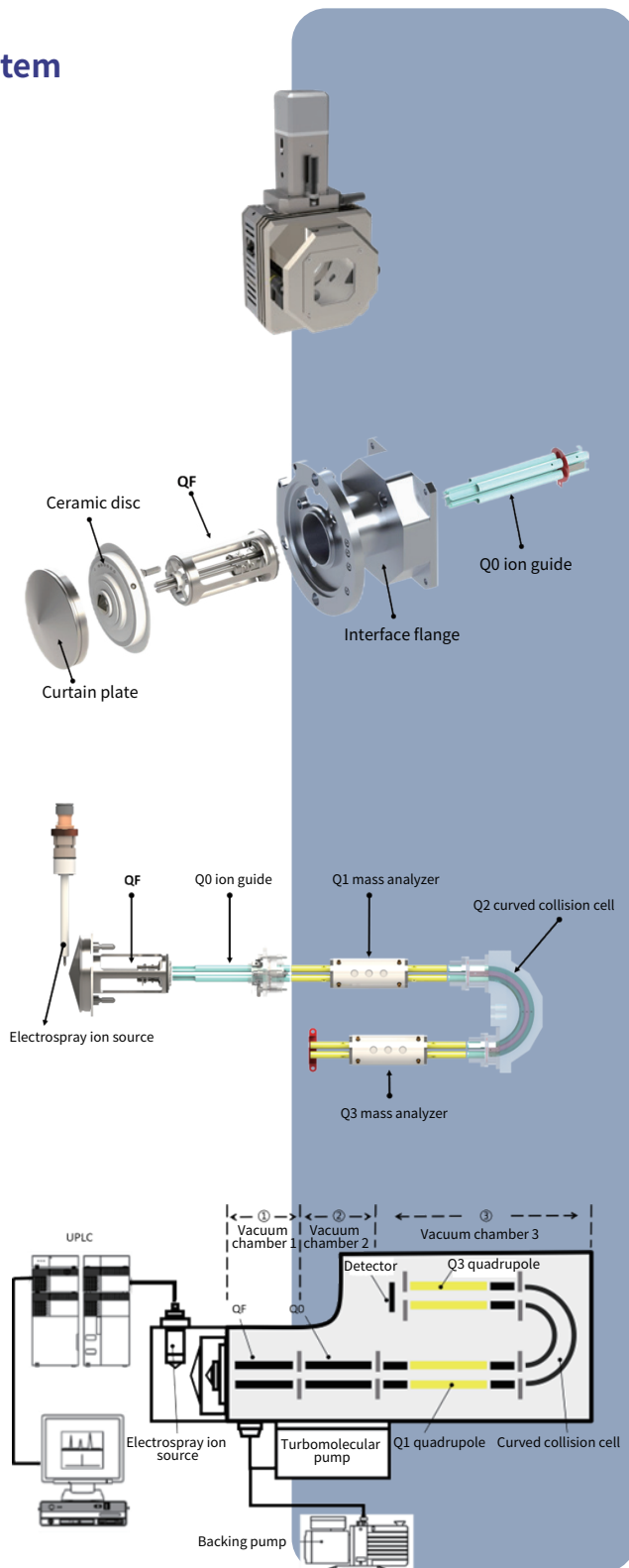
- Cone design effectively prevents sample decomposition caused by thermal fragmentation and clogging caused by condensation.
- Pre-quadrupole as an ion focusing guide device provides high contamination resistance.
- The ion source interface employs backflush technique and a removable skimmer cone.

Mass Analysis

- Cylindrical quadrupoles manufactured from high-purity molybdenum with gold-plated surfaces, ensuring exceptional mass axis stability. Pre-ion guide design effectively eliminates fringe field effects, enabling
- superior ion focusing and anti-contamination functions. Curved collision cell design efficiently eliminates memory effects and
- cross-contamination.

Vacuum System

- Turbomolecular pump with reliable vacuum-seal interface, enabling high-stability multi-stage gradient vacuum.
- Ion source removable under vacuum, ensuring long-term robustness and experimental efficiency.
- Automatic power-off protection, with no additional water cooling required.



Ultra-High Performance Liquid Chromatography System

ELITE HPLC

Superior Efficiency, Faster Analysis

- Patented injector design with unique wash mechanism ensures ultra-low carryover.
- Sample tray cooling enhances analytical stability.
- Ballistic Injection mode enables injection cycles as short as 1 second.
- Micro-Injection mode also exhibits excellent accuracy.

Superior Robustness, Better Pressure Resistance

- Patented low-pulsation, high-precision high-pressure constant-flow pump with dual-plunger in-series design minimizes pulsation.
- Multi-level microporous mixer with labyrinth design provides more homogeneous mixing and reduced pulsation.

Superior Intelligence, Simpler Operation

- Selectable temperature control modes - Heating, Cooling, or Intelligent - allow users tailor settings to their needs.
- Peltier-based temperature control combined with air circulation enables faster cooling.
- Optional selection valve allows unattended experiments with selection of up to 6 columns; a two-position, six-port valve is also available for multi-system switching.



LC-MS/MS Software

ELITE HPLC

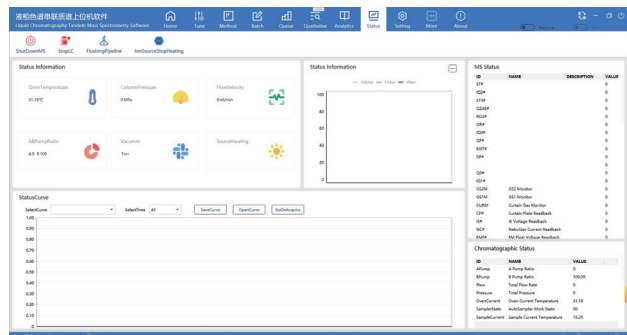
The MS platform software with a fully Chinese interface allows data acquisition, data processing, qualitative and quantitative analysis, automatic calibration, and fully automated analysis.

- Independently developed core algorithms enable intelligent auto-tuning, allowing the instrument to rapidly achieve optimal performance.
- A self-developed database of over 1000 compounds supports rapid analysis of common substances.
- The next-generation embedded control system enables seamless communication between instrument modules, real-time feedback, and automatic error handling.
- Reports can be tailored to include mass spectra, chromatograms, and other results based on specific requirements.
- Supports LIS integration for clinical diagnostics.

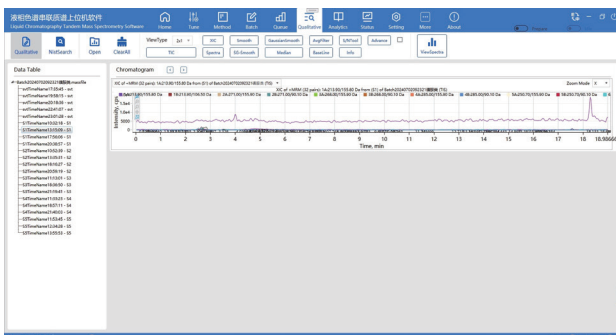
Clear homepage layout with comprehensive features



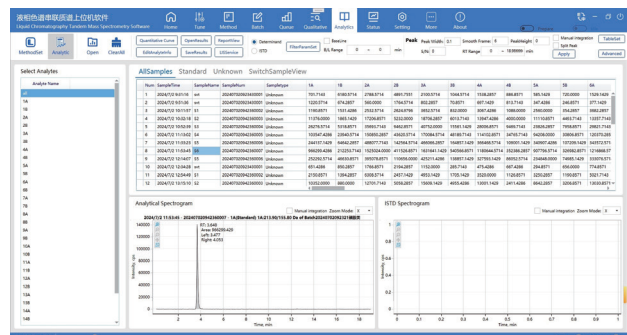
Intuitive instrument status and user-friendly operation



Reliable qualitative results with minimized false positive interference



Easy-to-read report summary

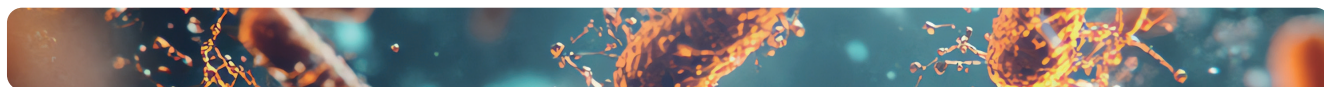


Application Areas

ELITE HPLC

Life Sciences and Healthcare

Analysis of complex biological samples such as serum, plasma, urine, tissue fluid, and cells; identification and validation of small molecule metabolites; qualitative and quantitative analysis of proteins; precise measurement of peptides, hormones, amino acids, vitamins, and other substances; clinical diagnostics and biomarker detection (including disease marker screening and newborn genetic metabolic disease screening); toxicological and forensic analysis; metabolomics and precision medicine; research on antibiotic resistance; and virus-related analysis.



Drug Manufacturing and R&D

Separation of natural products and complex compounds, peptide/protein analysis, residual solvent analysis, pharmacokinetics and metabolite identification, bioequivalence studies, pesticide residue analysis in TCM, qualitative and quantitative analysis of TCM, detection of illicit chemical adulterants in TCM formulations, QC of TCM preparation, analysis of in vivo metabolites of TCM, and determination of harmful substances in TCM.



Food Safety

Detection of food additives, analysis of pesticide and veterinary drug residues, screening for illegal additives, nutritional component analysis, mycotoxin detection, analysis of genetically modified components, detection of migrants from food packaging materials, identification of food adulteration, determination of organic acids and antibiotic residues in fermented foods.



Cosmetics

Separation and purification of active ingredients, screening of allergens, detection of prohibited substances and contaminants such as hormone and antibiotic residues, studies on formulation stability and compatibility, as well as analysis of natural and synthetic colorants.



Environmental Pollutants

Monitoring of environmental pollutants (POPs, PAHs, PPCPs, inorganic contaminants), water testing (drinking water safety, wastewater treatment, emerging pollutants), soil and sediment analysis, atmospheric pollutant research, investigation of emergency pollution incidents, and environmental toxicology studies.



Materials and Chemical Product Development

QC and component analysis of chemical products, identification of trace impurities and by-products, research on polymer materials and nanotechnology, analysis of active components in catalysts, studies on reaction kinetics, development of fine chemicals; development of new energy materials, such as electrolyte composition analysis, lithium battery material analysis, and photovoltaic material analysis.

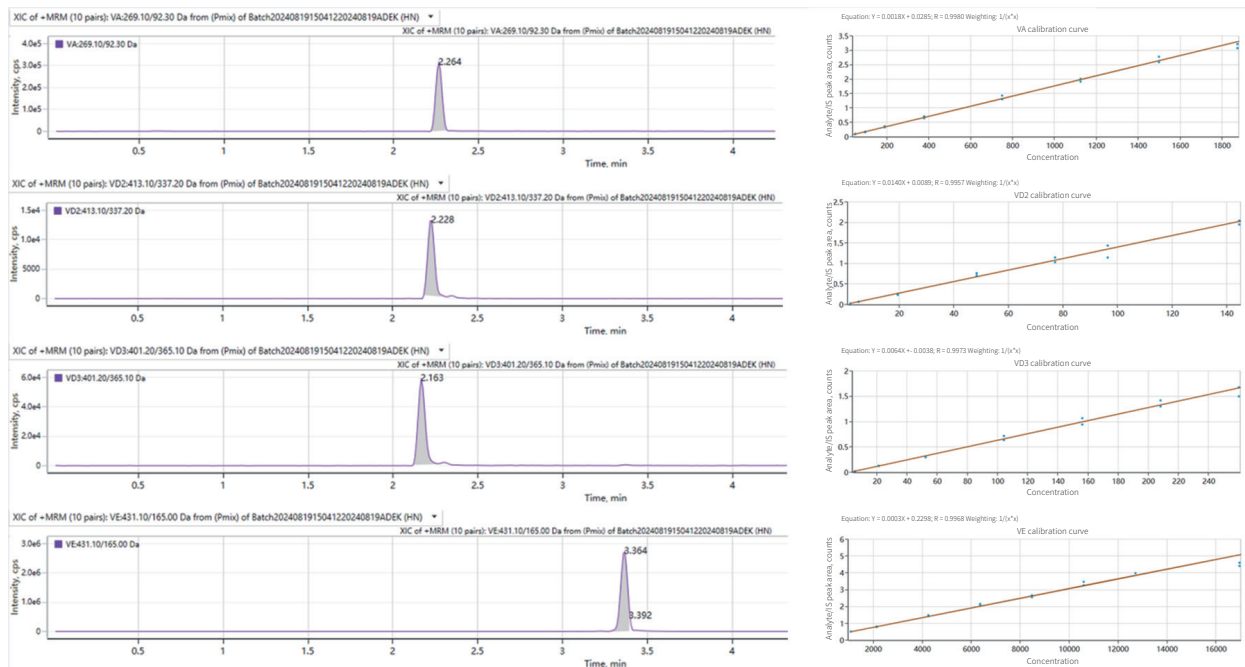


Application Cases

ELITE HPLC

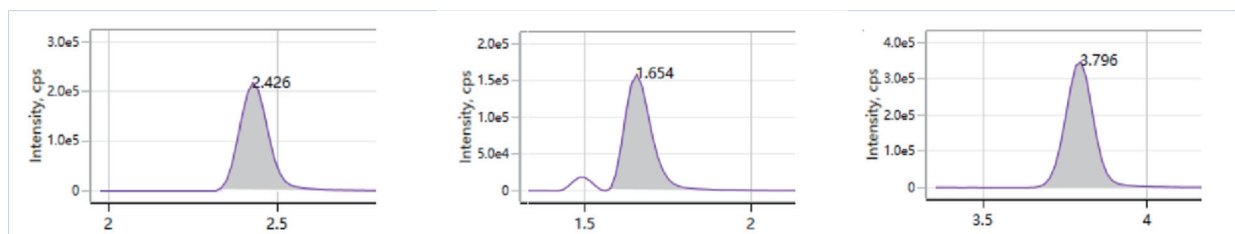
Fat-soluble Vitamin Analysis

The MS² Vertical 9020 LC-MS/MS enables precise analysis of fat-soluble vitamin levels from preconception and pregnancy through postpartum and childhood, facilitating scientific and accurate assessments of the nutritional status of women during pregnancy and children. This serves as a solid foundation for developing more personalized nutrition management strategies.



Catecholamines and Metabolites

MS² Vertical 9020 LC-MS/MS enables precise measurement of multiple catecholamines and their metabolites, providing a diagnostic basis for clinical conditions such as pheochromocytoma.

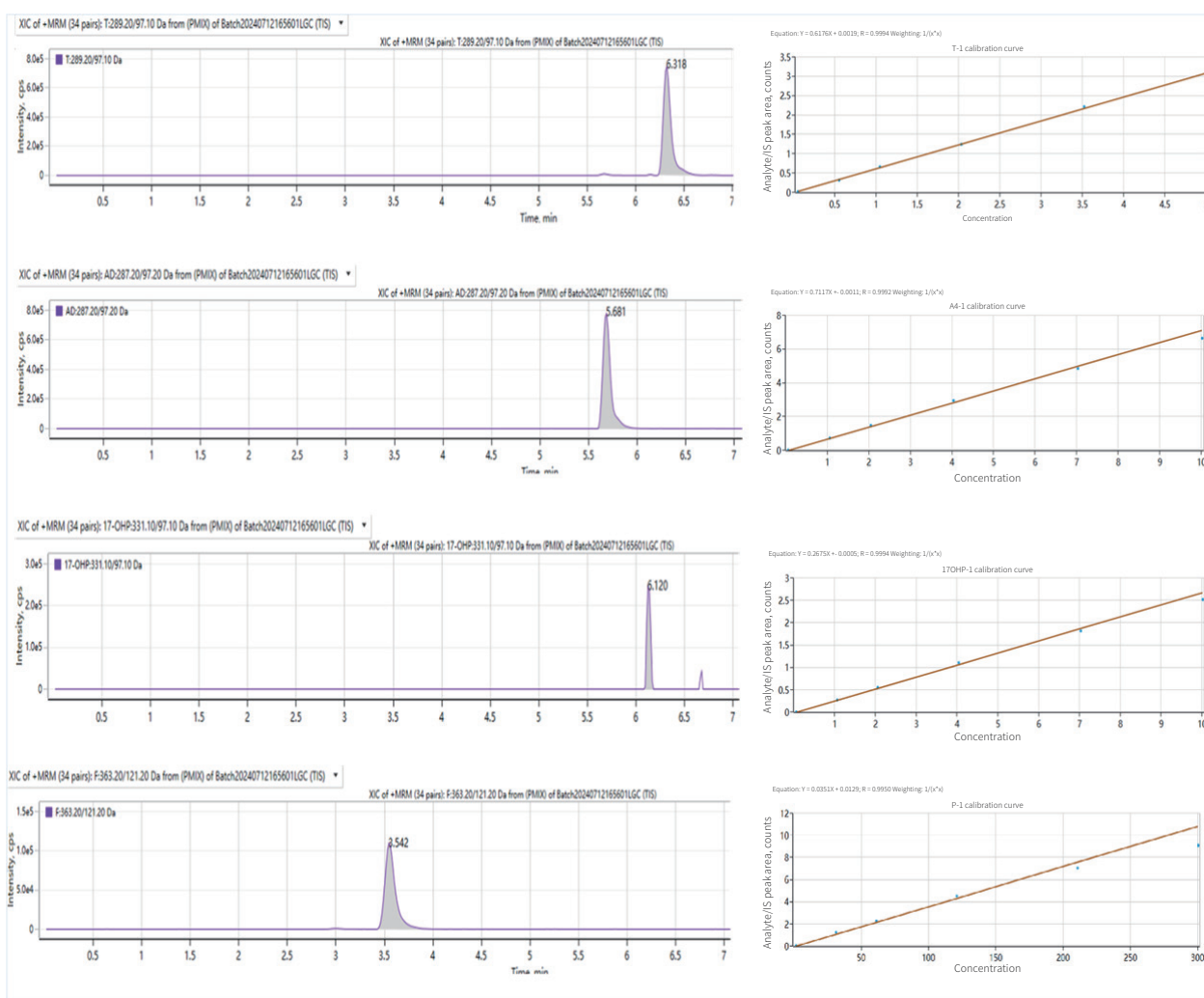


Application Cases

ELITE HPLC

Drug Concentration Testing

Key regulatory molecules that present at extremely low levels in the human body play an indispensable role in living organisms by finely regulating the metabolic balance, immune responses, and the normal functioning of various vital life activities. The MS² Vertical 9020 LC-MS/MS enables accurate measurement of multiple steroid hormones in the human body, providing reliable technical support for deeper understanding of their physiological mechanisms as well as for disease diagnosis and treatment.



Column Information

ELITE HPLC

Supersil Series

| Name | Particle size/ μm | Pore size/ \AA | Name | Particle size/ μm | Pore size/ \AA |
|-----------------------|------------------------------|-------------------------|---------------------|------------------------------|-------------------------|
| Supersil ODS2 | 1.8/3/5/10 | 100/120 | Supersil Diol | 5 | 100 |
| Supersil ODS-B | 5/10 | 120 | Supersil CN | 5 | 120 |
| Supersil AQ-C18 | 3/5/10 | 100/120 | Supersil HILIC | 5 | 100 |
| Supersil C8 | 3/5/10 | 120 | Supersil Amide | 5 | 120 |
| Supersil Phenyl | 5 | 120 | Supersil HILIC ARG | 5 | 100 |
| Supersil Polar-Phenyl | 5 | 120 | Supersil NH2 Plus | 5 | 120 |
| Supersil PFP | 5 | 120 | Supersil NH2-S Plus | 5 | 120 |
| Supersil C4 | 5 | 120/300 | Supersil SAX | 5 | 120 |
| Supersil C30 | 3/5 | 120 | Supersil SCX | 5 | 120/150/300 |
| Supersil SiO2 | 5/10 | 120 | | | |

Coreshell Series

| Name | Particle size/ μm | Pore size/ \AA | Name | Particle size/ μm | Pore size/ \AA |
|-----------------------------|------------------------------|-------------------------|---------------------------------|------------------------------|-------------------------|
| Supersil Coreshell C18 | 1.7/2.6 | 100 | Supersil Coreshell BIO C18 | 1.7/2.6 | 300/1000 |
| Supersil Coreshell C18 Plus | 1.7/2.6 | 100 | Supersil Coreshell BIO C18 Plus | 1.7/2.6 | 300/1000 |
| Supersil Coreshell C8 | 1.7/2.6 | 100 | Supersil Coreshell BIO C8 | 1.7/2.6 | 300/1000 |
| Supersil Coreshell C4 | 1.7/2.6 | 100 | Supersil Coreshell BIO C4 | 1.7/2.6 | 300/1000 |
| Supersil Coreshell BP | 1.7/2.6 | 100 | Supersil Coreshell BIO BP | 1.7/2.6 | 300/1000 |
| Supersil Coreshell PH | 1.7/2.6 | 100 | Supersil Coreshell BIO PH | 1.7/2.6 | 300/1000 |
| Supersil Coreshell PH Plus | 1.7/2.6 | 100 | Supersil Coreshell BIO PH Plus | 1.7/2.6 | 300/1000 |
| Supersil Coreshell PFP | 1.7/2.6 | 100 | Supersil Coreshell BIO PFP | 1.7/2.6 | 300/1000 |
| Supersil Coreshell CN | 1.7/2.6 | 100 | Supersil Coreshell BIO CN | 1.7/2.6 | 300/1000 |
| ECoreshell SOS C18 | 2.7 | 90 | ECoreshell RPR C18 | 2 | 100 |

SinoPak BEH Series

| Name | Particle size/ μm | Pore size/ \AA |
|--------------------|------------------------------|-------------------------|
| SinoPak BEH T-C18 | 1.8/3/5 | 130 |
| SinoPak BEH AQ-C18 | 1.8/3/5 | 130 |
| SinoPak BEH T-C8 | 1.8/3/5 | 130 |
| SinoPak BEH Phenyl | 1.8/3/5 | 130 |

Note: Multiple column dimensions available.

Auxiliary Device

| Serial No. | Device Name | Catalog No. |
|------------|--|-------------|
| 1 | Uninterruptible power supply (UPS) | |
| 2 | Nitrogen generator for mass spectrometry | |



About Elite

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