DRAWELL
Artist of Science

Liquid Chromatography Mass Spectrometry (LC/MS)

LC-MS-2000

LC-MS-2000 meets eveiy performance index specified in the related national regulations about the verification requirements. The adoption of imported vacuum pumps with higher pumping speed has effectively reduced the chemical interference due to the background vacuum. A more compact structure design has successfully reduced one third of the instrument's whole width.

Features

The unique design of vortex gas heating at the ion source achieves an accurate control and also a uniform distribution of the temperature.

☆ Simultaneously acquiring data for analysis through multiple channels efficiently improves the analytical speed and the following works.

☆ A fast switch between positive and negative ionization modes supports flexible testing solutions.
The fastest switching time of HVPS can reach 20ms at the range of -10kV to +10kV.

☆ The patented design of the hexapole ion guide can greatly improve the transmission of ions, especially of the ion signals of high mass number.

☆ Capability of obtaining abundant mass spectrum information, including molecular mass and multiple structural information.

☆ The software of ChemAnalyst can support a powerful performance of the instrument and ensure an easy operation of it with a simple switch between Chinese and English user interfaces at one click.

☆ Provision of various and flexible solutions by combining such different ion source configurations as ESI(standard), APCI(optional), APPI(optional).

☆ Operation of the auto-sampler through the software can effectively increase the sample throughput and complete an unattended and automatic sequence detection.

Compliance with the requirements of GMP and GLP by adding a user authority management module, a data integrity module, and an audit traceability module.

Test capability of mass range of 10-2000amu.

Having improved the service life, the dynamic range, and the sensitivity of the detector by a wide margin.

Parameters

Mass Range	**m/z 10-2000amu**
Resolution	**unit mass resolution 0.7amu (≤ 1 amu)**
Mass Accuracy	**≤ ±0.2amu (within the mass calibration range of the scan mode)**
Mass Axis Stability	**≤ ± 0.2amu/12h (under that condition of constant temperature ± 2°C)**
Scan Rate	**lOOOamu/s in the standard mode, lOOOOamu/s in the fast scan mode**
Signal to Noise Ratio (SNR)	**ESI +, 10pg reserpine, S/N ≥ 50:1(RMS)**
Peak Area Repeatability	**RSD ≤ 4.6%**
Retention Time Repeatability	**RSD ≤ 1.5%**

Instrument Configuration

Sample Injection System	**LC310 isocratic system (optional configuration),including LC pump, manual injection valve (six way injection valve 7725i), column temperature box;**
	LC310 gradient system (optional configuration), including LC pumps (two pumps), high pressure gradient mixer, column temperature box, UV detector;
	Injection pump, which is integrated into the mass spectrometer (the injection speed can be adjusted in several stages, and the minimum injection speed is luL/min);
Ion source	**vacuum interface and ion optical components ESI (standard), APCI(option) ;cone; hexapole**
Mass analyzer and detector Quadrupole	**High energy dynode electron multiplier**
Vacuum system	**2 turbomolecular pumps with the pumping speed of 350L/s each; 1 mechanical pump with the pumping speed of 30m3/h.**
Add-on network communication system and computer system	**highly integrated ChemAnalyst software for data acquisition and specified post-processing workstation(applicable to Win10)**
Electronic control system	**electronic measurement and circuit control system**
Optional	**UPS (optional configuration) ,Nitrogen generator (optional configuration)**

Application

Biopharmaceutical: Synthetic drug detection (including CRO organic synthesis and biopeptide synthesis) and the detection of API (including synthetic API and traditional Chinese Medicine).

Detection for RoHS and ReachH : Super-fast screening of PAEs, PAHs, bisphenol A, PBBs and PBDEs.

Industrial Analysis: Production quality control of synthetic intermediate and finished products.

Environmental Monitoring: Monitoring and analysis of environmental pollutants.

Food Safety: Detection of food additives, food residues, pollutants, illegal additives, etc.

Advantage

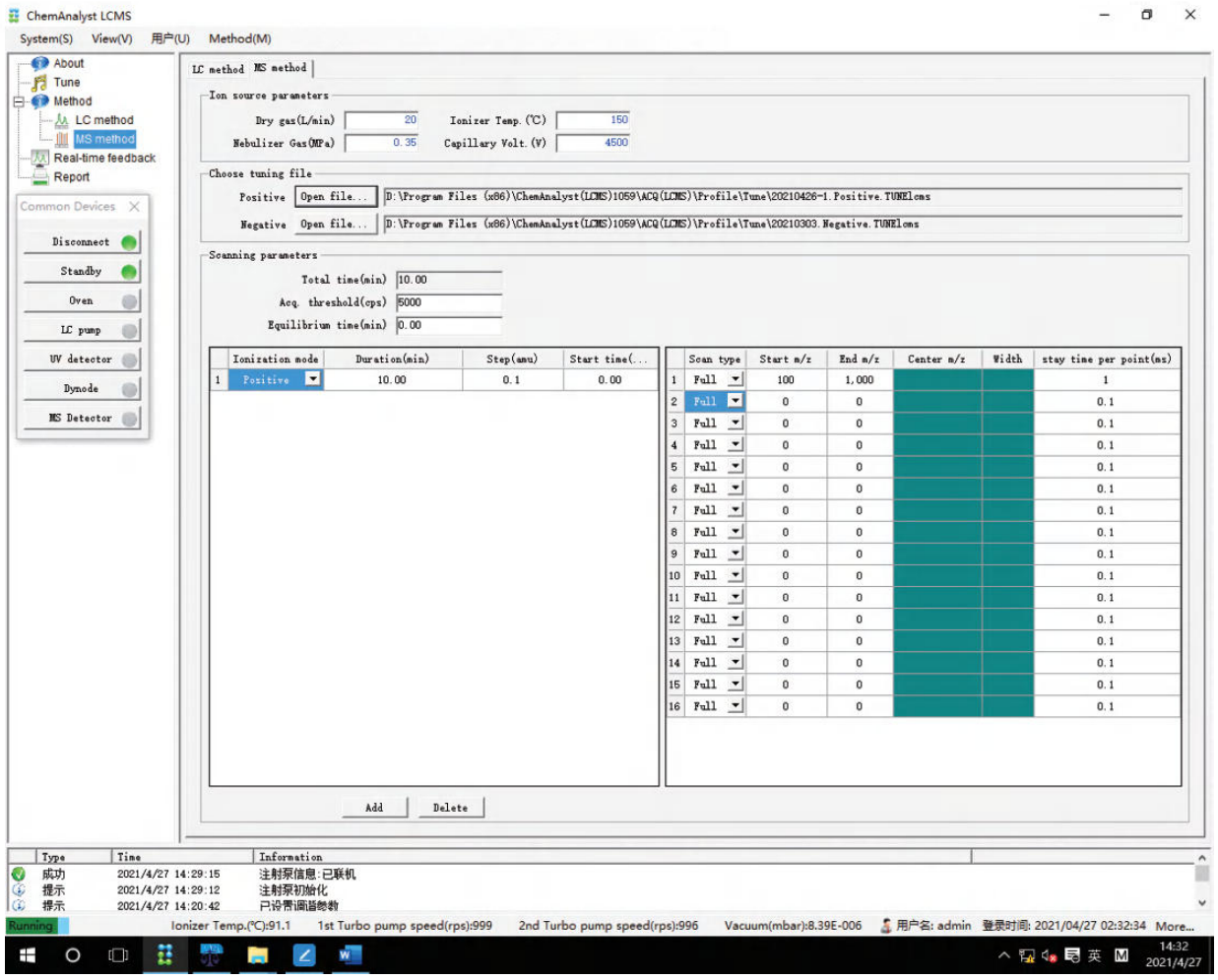
1. The unique and innovative design of the ion source

The position of the ion source spray needle can be flexibly adjusted to be adaptable to the analysis of complex samples under different flow rates.The adoption of the patented heating technology and sheath gas fluid atomization technology at the ion source atomization chamber has substantially improved the efficiency of atomization and desolvation , reduced the background noise, and increased the sensitivity of the instrument.The adoption of the ion optical off-axis design for the ion transmission at the ion source injection port contributes to a clean cone-hole for a much longer period of time and the minimization of the interference caused by the pollution, improving the ion transmission efficiency and obtaining a better sensitivity.

2. The function of acquiring data from multiple channels has raised the analysis speed and work efficiency.

Full scan mode can be applied to the qualitative analysis of target compounds for one sample injection; SIM mode can be applied to the quantitative analysis of the target compounds.The SIM mode can be applied to the analysis of low concentration compounds or low response compounds, and the full scan mode can be applied to the analysis of unknown compounds with high concentration or high ionization efficiency.Free selection and combination of positive or negative ionization modes, SIM or full scan modes can support a scanning under different conditions of data acquisition for one sample injection, and the analysis of more complex samples, substantially improving the analysis speed and working efficiency of the users.

Multi-channel scanning and data acquisition technology



3.A fast switching between positive and negative ionization modes can support a flexible test.

A higher response ionization mode can be selected and applied because of the capability of fast switching between positive and negative ionization modes, which is convenient to the optimization of the methods and conditions without affecting the integrity of the chromatography separation. It is suggested to obtain both the positive-ion and negative-ion mass spectrum for one sample injection of those compounds that can be ionized in both modes (positive-ion and negative-ion modes) for a more reliable result.

4 .Capability of obtaining abundant mass spectrum information, including molecular mass and multiple structural information.

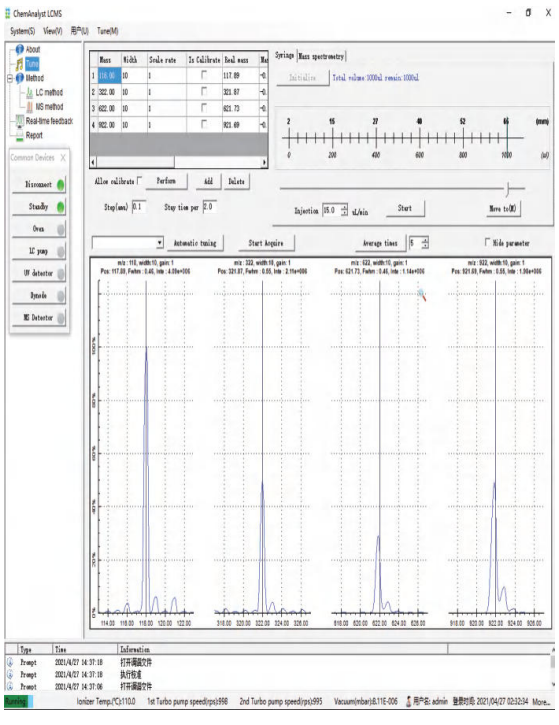
The provision of in-source collision induced dissociation (CID) function has increased the structural fragmentation information, which is beneficial to the mass spectrum analysis of target compounds.

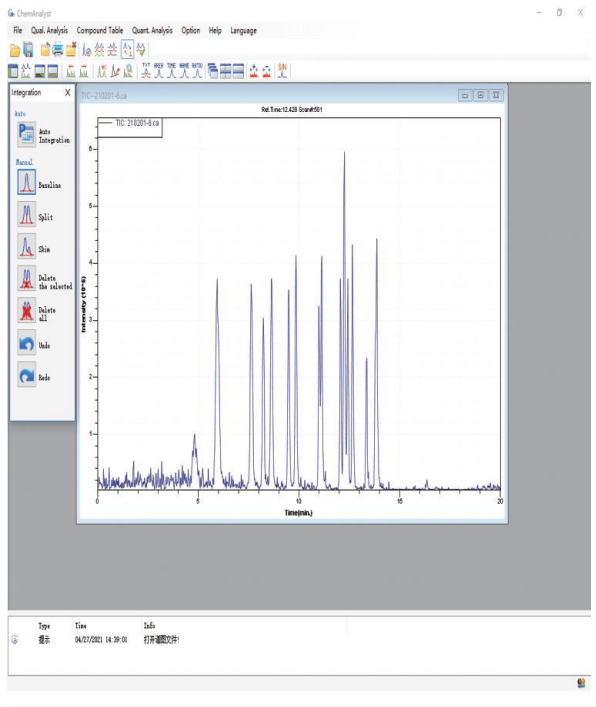
5.The ChemAnalyst software has powerful functions and its operation is simple because of the friendly user interface .

ChemAnalyst, as a powerful software of chemical workstation can simplify your data analysis work and make it become an automated processing workflow from mass spectrum calibration to methods setup, sample collection and data analysis. Advanced data-acquisition and data- processing modules support a separate use of them, which can make mass spectrum analysis much faster, easier and more efficient.

ChemAnalyst software’s convenient user interface of English version

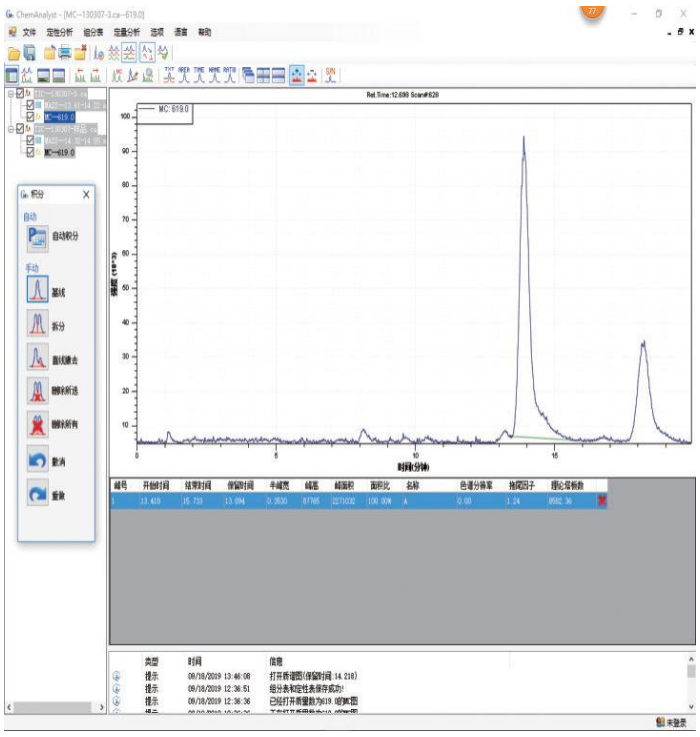
Acquisition

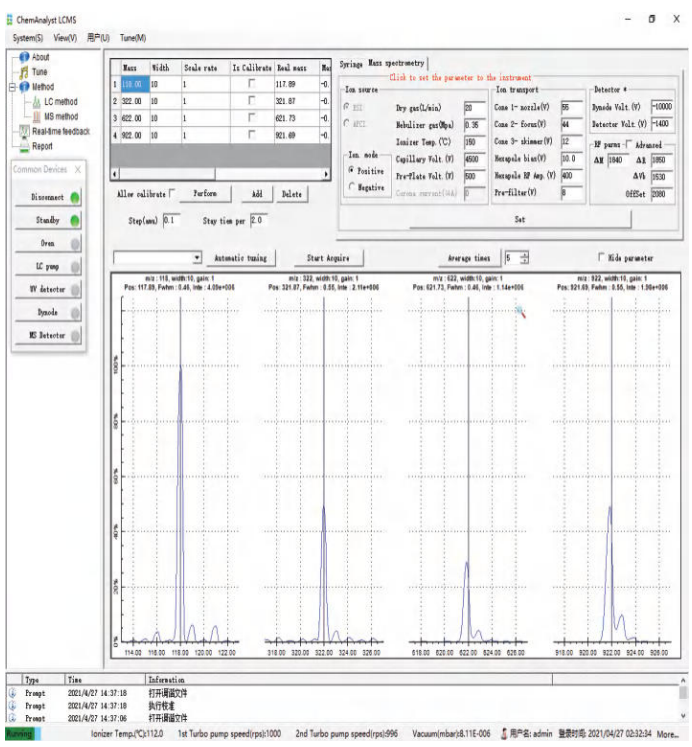




Post-processing

With pg-level sensitivity and stable repeatability

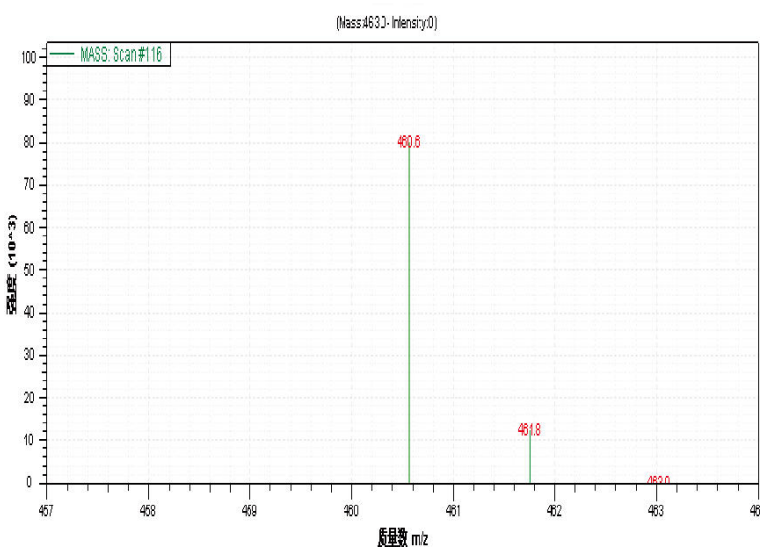


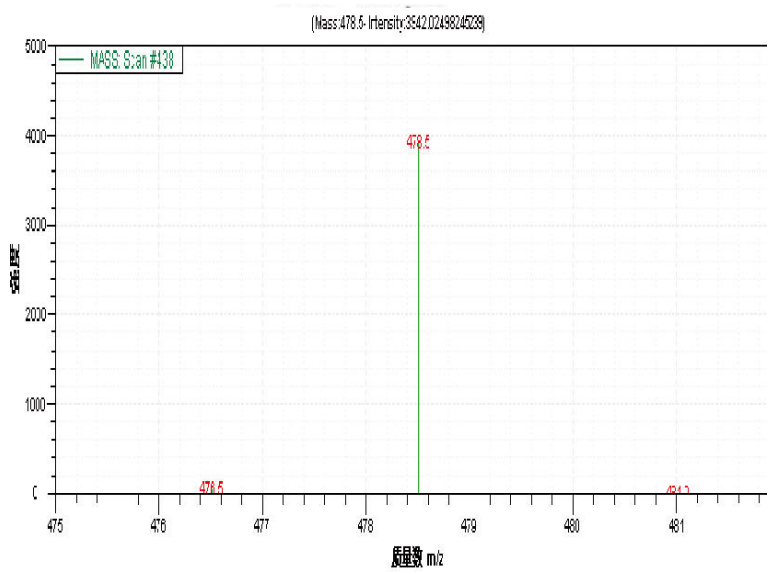


Test case analysis

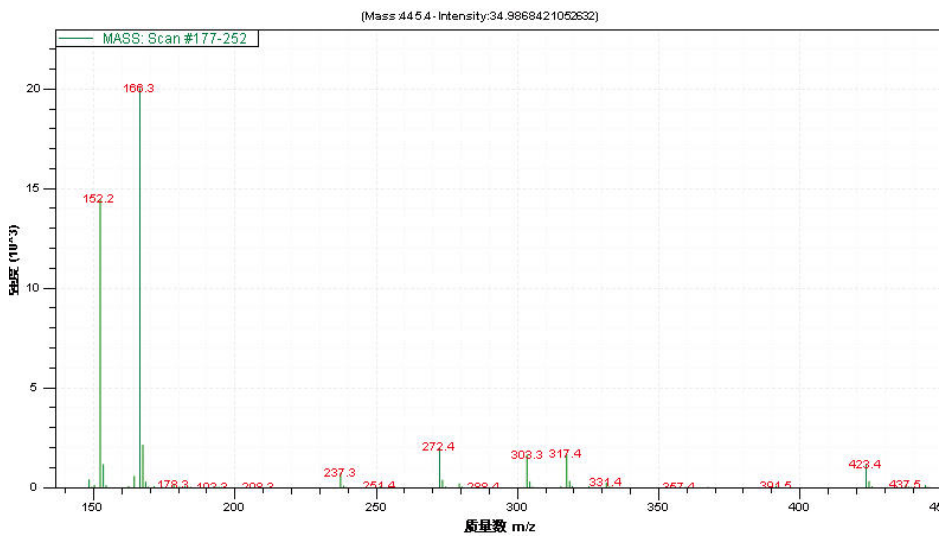
Application 1. Drug production and product monitoring

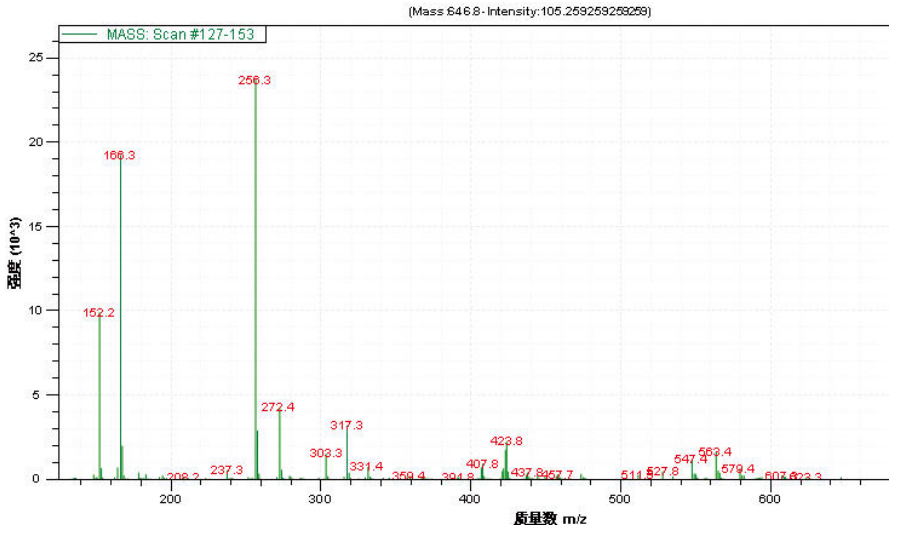
A. Antibiotic A





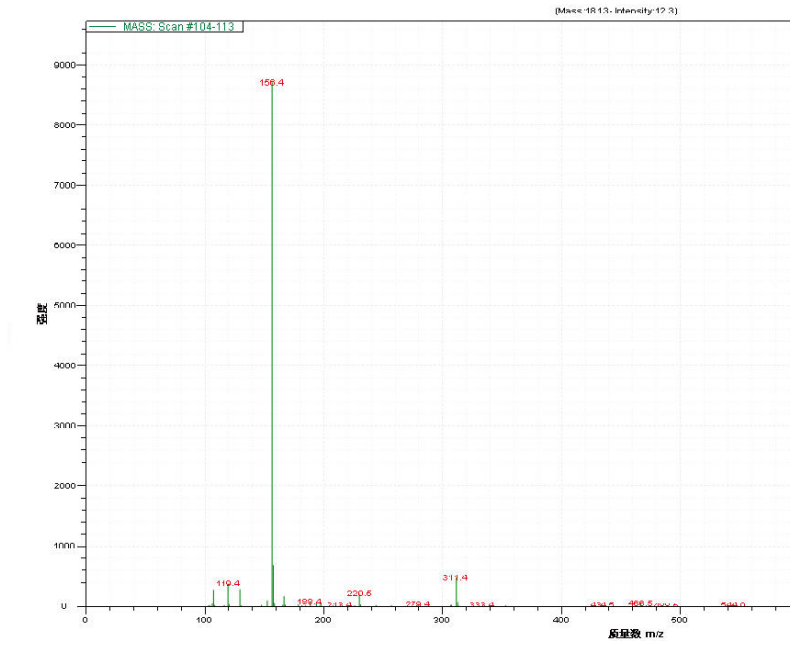
B. Paracetamol and pseudoephedrine tablets



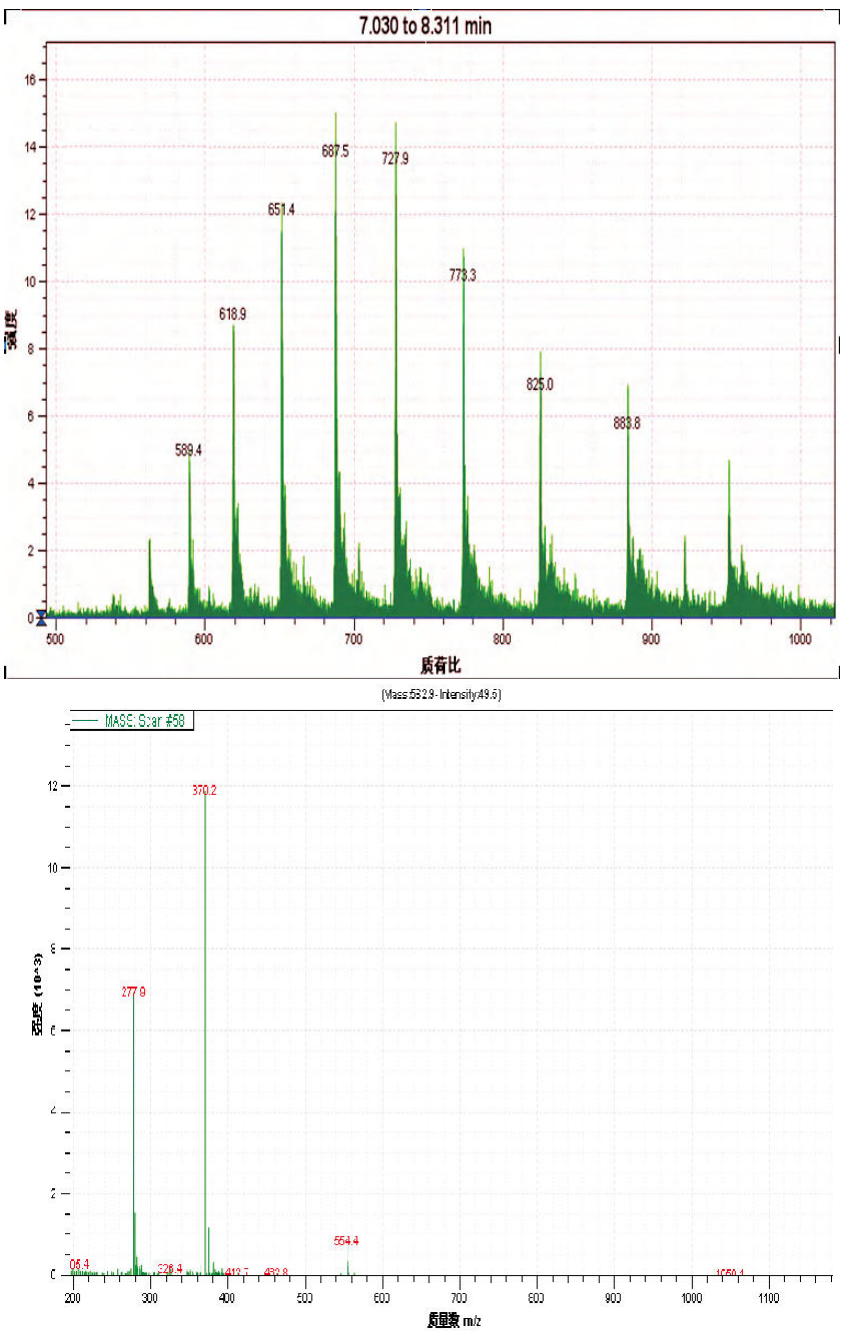


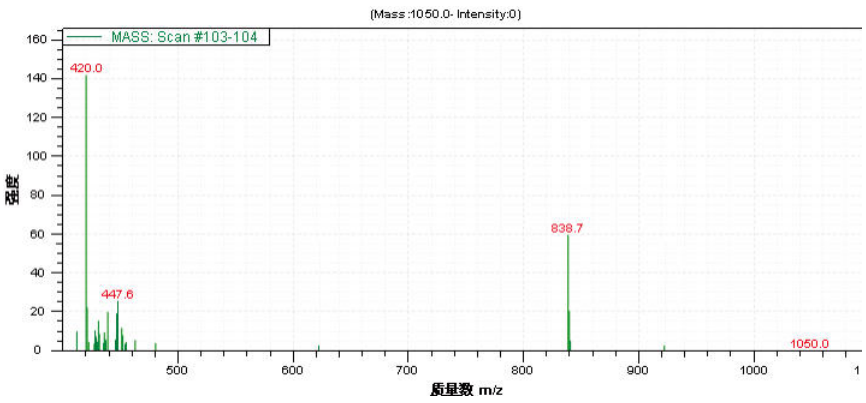
Application 2.Biological held

A. Amino acid



B. Cytochrome C

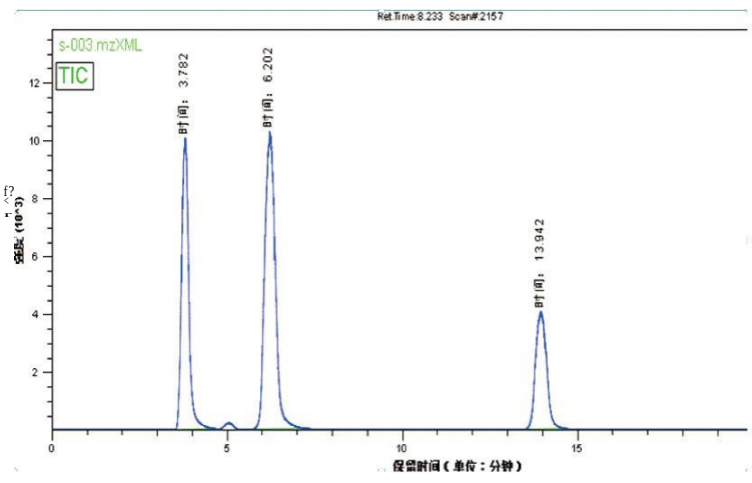


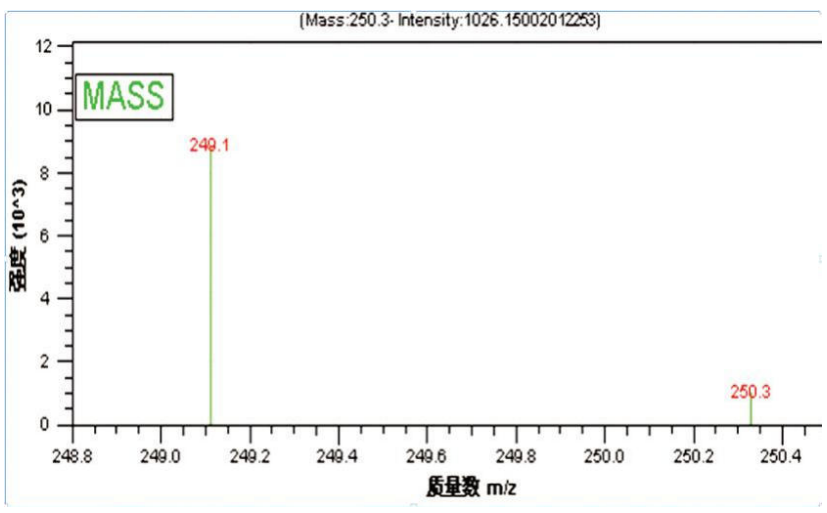


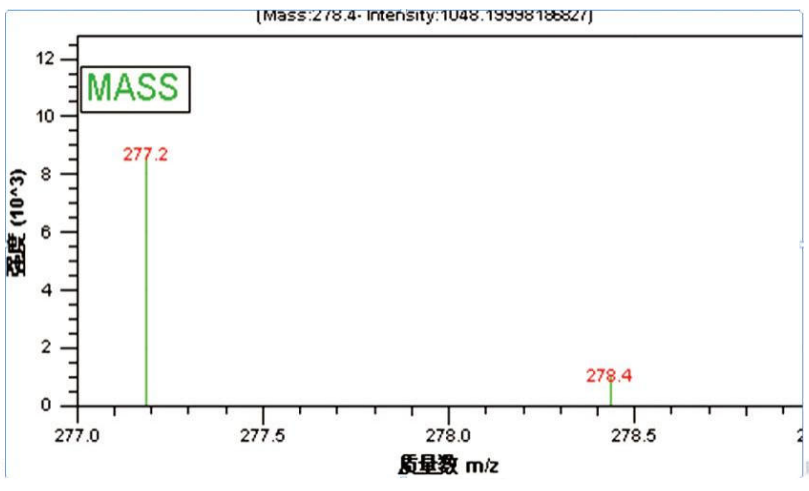
Application 3. food safety

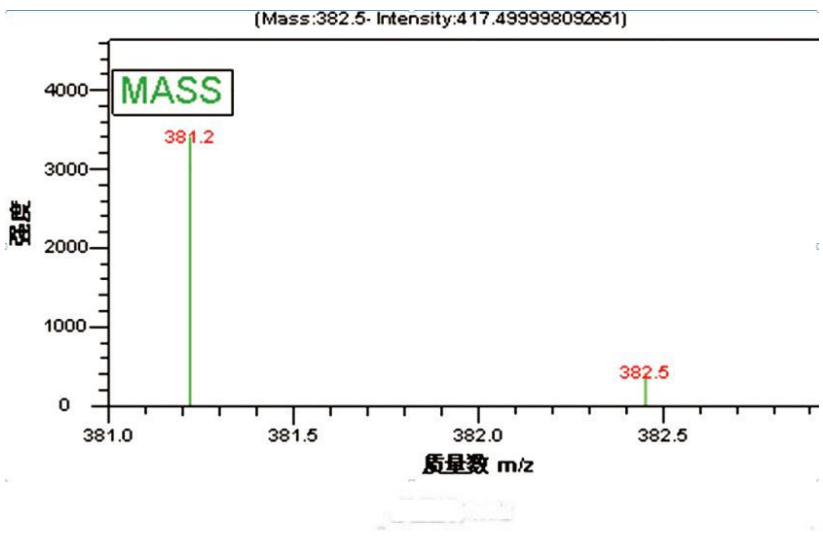
A. Food additives(illegal)

Detection of the dye Sudan I, II, III in food

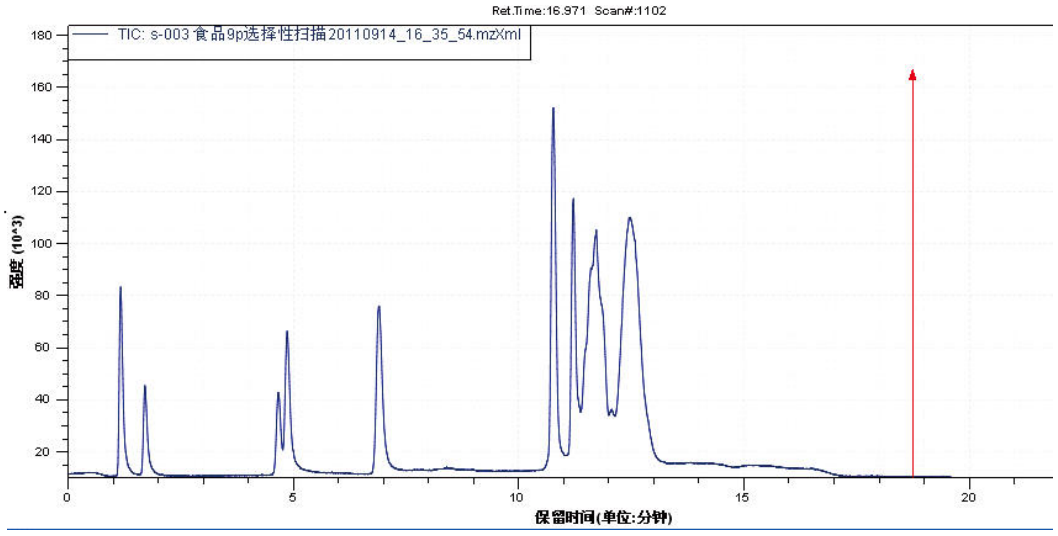


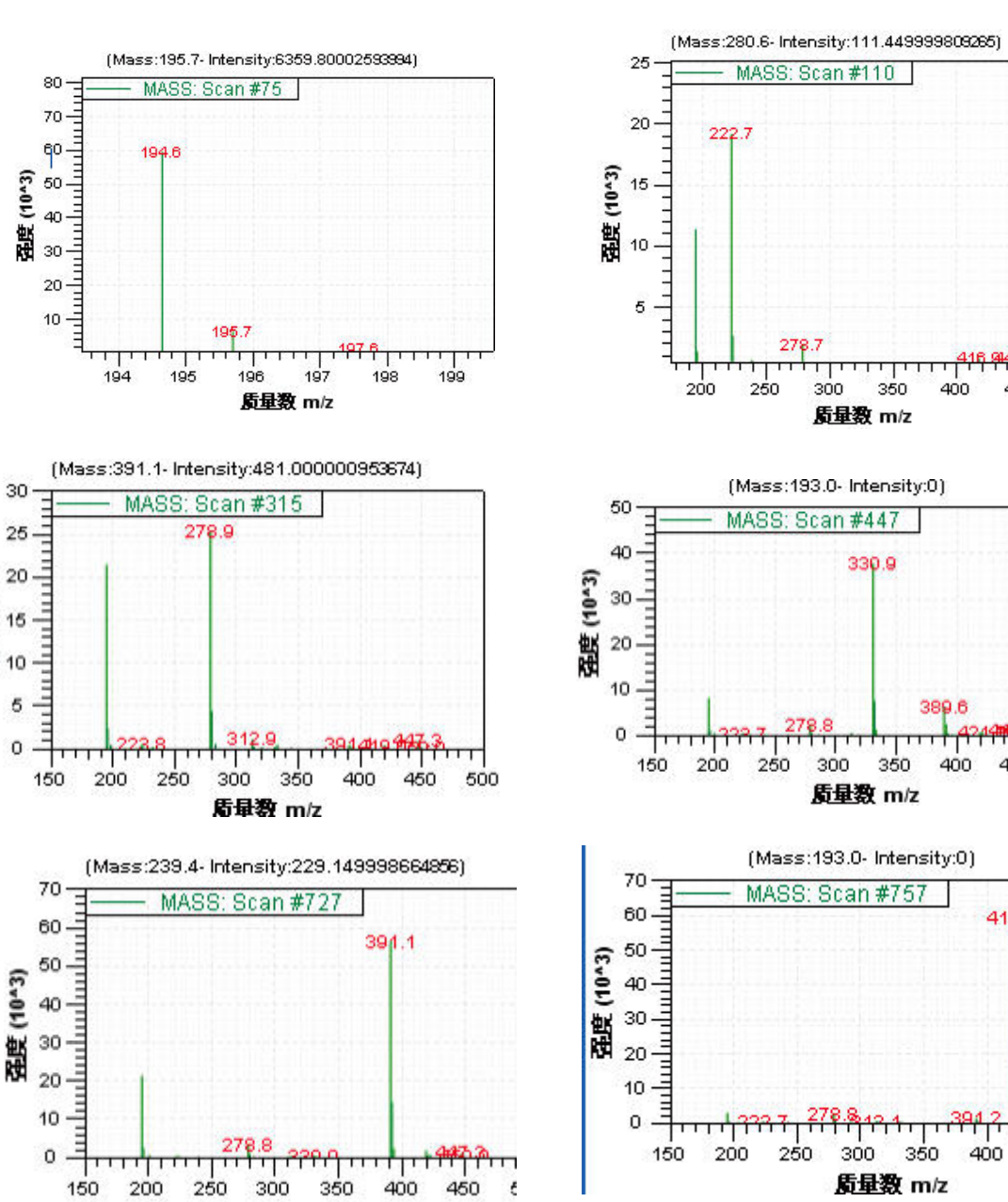






Detection of plasticizer phthalates in food (DMP, DEP, BBP, DBP, DCHP, DEHP, DNOP, DINP, DIDP)





B. Pesticide and veterinary drug residues

Detection of clenbuterol in food (clenbuterol, ractopamine, salbutamol)