

GC-MSMS DW-EXPEC5231

Gas Chromatograph-Triple Quadrupole Mass Spectrometer

Introduction

DW-EXPEC5231 Gas chromatograph-triple quadrupole mass spectrometer, integrating the capability of gas chromatograph and mass spectrometer, has sufficient sensitivity and selectivity, good stability and strong anti-interference. Therefore, it is applicable to the qualitative and quantitative analysis on high sensitivity of trace pesticides and veterinary drugs in complex matrix.

Features

- 1. EI Ion source
- 2. Collision Cell with Axial Acceleration
- 3. Tandem QQQ quality analyzer
- 4. Pure molybdenum quadrupole Mass Spectrometers
- 5. Intelligent MRM
- 6. Excellent sensitivity

Work environment

1. Work environment temperature: 18-25 °C
2. Humidity in work environment: (20 ~ 60)% RH
3. Power supply: five sets of single-phase (220 ± 20) V AC, 10A, 50 Hz power supply

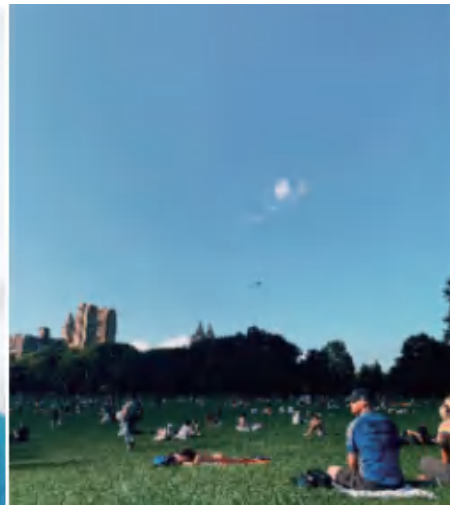
Applications



Environmental monitoring



Food safety



Biomedicine



Forensic and Toxicology



Specifications

Gas Chromatograph	
1. Column oven	
Maximum service temperature	450 °C
Heating rate	120 °C/min at maximum, typically 50 °C/min; The temperature rise program in 32 steps and 33 stages and temperature decline program is supported, with the reproducibility better than 0.5%; 5min are required for cooling from 450 °C to 50 °C;
Temperature control accuracy	within ± 0.1 °C
Holds up to 3 capillary columns	
2. Split/splitless injection ports	
Maximum service temperature	450 °C
Gas circuit system	The programmable electronic gas circuit control is adopted to provide various control modes such as constant pressure, constant flow, programmed boost and programmed upflow
Flow control	0-500 mL/min (N2); 0-1,000mL/min (He, H2)
Pressure control	0-100.00 psi (689.5 kpa)
Control accuracy	±0.001 psi, capable of realizing sample injection under pulse pressure.
Operation mode	split or splitless
3. Programmable electronic gas circuit control	
Modular design is adopted, which can support up to 18 channels of electronic pressure and flow control;	
The flow, pressure, linear speed and split ratio of the injection port are set directly through the workstation software or touch screen	
It has the function of automatic atmospheric pressure and temperature compensation.	
4. Automatic sample injector	
Support 16 bit or 110 bit automatic sample injector	
Injection volume	0.1µL-250µL (16 bit) or 500 µL (110 bits)
Sampling accuracy	± 0.01%
Injection precision	RSD < 0.5%
Mass spectrometry system	
1. EI ion source	double filament, with 10-300eV ionization energy and 150 °C-350 °C of heating temperature.
2. Sample injection interface	Non-cold point heat tracing technology is adopted for the MS/MS interface, and the interface temperature is 50-400 °C, so as to ensure the efficient transmission of GC-MS/MS samples.
3. Ion optical system	
90° deflection is adopted to effectively filter the unionized neutral particles, so as to reduce the background noise and avoid the pollution to the detector.	
No redundant transmission pole is set in the ion transmission system, and the ions can directly enter Quadrupole to avoid ion loss during transmission.	
4. Mass analysis system	
Mass analyzer	Triple quadrupole mass analyzer.
Quadrupole	Gold-plated quadrupole made of high precision pure Mo material is used, and the material can realize the best stability through deactivation; Cleanable pre- and post- quadrupoles are set to eliminate the organic deposits; and the best mass axis stability can be ensured without heating.
Collision cell	Hexapole axial acceleration design is adopted, capable of effectively eliminating the interference of ion pair and ensuring the high-throughput analysis capability. High-purity nitrogen is adopted as the collision gas (with the purity ≥ 99.999%).
Resolution	0.4-3.0amu, adjustable.
Mass stability	< ± 0.1amu/24 hours.
Scanning speed	up to 20,000 amu/s.
Number of MRM channels	100 channels/s
Mass range m/z	EI, 5 -1,100amu;
Sensitivity	EI, MRM mode: 100fg/uL OFN of 1uL, ≥ 15000:1

Full scan, selected ion monitoring (SIM), product ion scan, precursor ion scan, neutral loss scan, multiple reaction monitoring (MRM), etc.	
5. Detector	
90°off-axis electron multiplier technology, without any positive and negative ion discrimination effect, which has long service life, capable of ensuring the long-term data stability.	
Pulse-counting detector, to ensure the data reproducibility of low limit of detection.	
6. Vacuum system	Mechanical pump and dual inlet turbomolecular pump at 250 + 450L/s. A differential pumping system is formed between the ion transmission area and mass analysis area, functioning for automatic power-off protection.
7. Workstation software	
Basic features of software system	Windows 10 operating system. The software can control the gas chromatograph, liquid chromatograph and mass spectrometer, with built-in data processing and report editing functions. Besides, the software can realize the function configuration and condition optimization of the instrument automatically, the automatic quantification, the mass spectrometry data analysis, and the establishment and retrieval of spectral database.
The system has the functions of automatic correction and instrument condition monitoring.	
The GC-MS/MS operation software can be installed on the personal computer, and used for the offline processing of sample analysis data and report generation. (When bidding, the customer's on-site installation diagram of gas-liquid-triple quadrupole mass spectrometer should be provided, with the product model indicated, which should be searched on the official website of the headquarters)	

Accessory system

1. Computer system

Brand computer with mainstream configuration, 4GB memory, 1TB hard disk.

2. AC stabilized power supply

15KVA, input voltage of 140v-300v, output voltage of 220 V ± 1%.

3. Laser printer

6018L, black and white laser printer.

4. Mechanical pump

Pumping speed: 65m³/h, 220V power supply, 800W.