Multiplelabs
Turnkey Laboratories Solutions

Analytical®
Technologies Limited

GCMSMS - 3500

GCMSMS

EPCC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

Analytical Technologies Limited

An ISO 9001 Certified Company

Product Overview

GCMSMS 3500 is a completely new gas chromatography-triple quadrupole mass spectrometer (GC-MS/MS) created by Analytical Technologies Limited. It has independent intellectual property rights by adopting a series of innovative mass spectrometry technologies. GCMSMS / MS adopts the gas chromatography/mass spectrometer interface without cold point in the whole process and the design of EI ion source to ensure efficient and stable sample transmission and ionization efficiency.

GCMSMS 3500 has excellent anti-pollution ability and stability, outstanding scalability and best price value. It is suitable for the application of traditional medicine, agricultural residues, food safety, environmental monitoring and so on.Mass spectrometry workstation software developed for customers' needs and usage habits includes professional mass spectrometry control and quantitative analysis software, and combines with standard method library, intelligent batch processing and customized report output functions, which reduces the operation difficulty of mass spectrometry software system greatly. At the same time, it also has a rich application method library to meet the application needs of more mass spectrometry users.

Product Features

Ion source

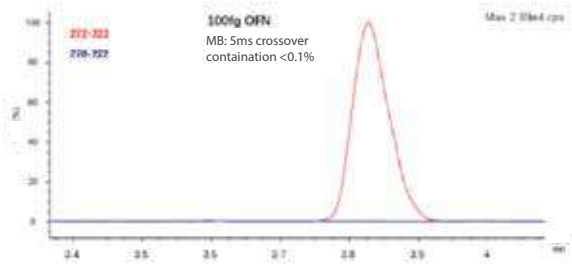
• Adopt the gas chromatography/mass spectrometer interface without cold point in the whole process and the design of EI ion source to ensure efficient sample transmission and ionization efficiency.

Collision Cell with Axial Acceleration

• Improve scanning speed

• Improve collision efficiency

• Eliminate crosstalk between ion pairs and no memory effect.



Tandem QQQ quality analyzer

• Adopting design of tandem quadrupole mass spectrometers and six pole collision pool.

• The stable dual mass analyzer can carry out various mass analysis scans and is suitable for various mass spectrometry research work.

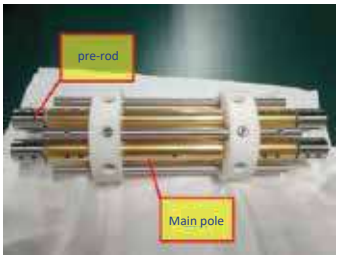
• Efficient collision pool for maximum ion transport.

• Including full scan, SIM, SRM, product ion scan, precursor ion scan, neutral loss scan and MRM.

Pure molybdenum quadrupole Mass Spectrometers

• Pure molybdenum quadrupole has the best material stability to ensure the stability of the quality axis.

• Gold plating on the surface and inert treatment to eliminate organic deposition.



Intelligent MRM

• The intelligent MRM function provides users with the convenience of method editing and modification.

• Be able to analyze more target compounds in a single run for more efficient use of instrument analysis time and increased sample throughput.

Excellent sensitivity

• High ionization efficiency and ion transport efficiency.

• The innovative technology of axial acceleration collision pool improves the collision efficiency greatly

• The patented technology of pulse counting detection can detect ion signals without loss and filter noise interference effectively

Excellent stability

• The patented closed-loop adaptive adjustment technology of dual-channel RF power supply improves the stability of quadrupole RF power supply

• The patented anti temperature and humidity alternating technology is suitable for a wider range of temperature and humidity applications

Mass Expert mass spectrometry workstation

• Mass Expert mass spectrometry, the control and analysis software developed for customers' needs and usage habits, are simple to operate. The function of one-click automatic tuning and quality calibration reduces the complexity of instrument control and the threshold of instrument use. Mass spectrometry analysis software and report template can be customized according to different application fields and different users to meet the use needs of various application fields.

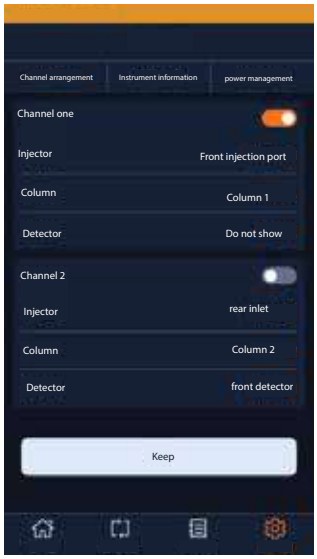
GCMSMS 3500 is equipped with GC3000 gas chromatograph, which adopts advanced electronic flow control system, microfluidic plate control technology, high-precision independent temperature control system and highsensitivity detector, with flexible and friendly user interface, high-speed sampling frequency and signal processing speed, meetting the user's requirements for instrument analysis capability, reliability, stability and advancement.

Intelligent instrument control, which is simple and easy to use

• The host monitoring software is developed based on the intelligent system of the micro-kernel processing architecture. It is equipped with an 8-inch full-fit high-resolution capacitive touch screen and an image UI, combined with intelligent functions such as self-diagnosis reminder, self-detection of leakage, and self-saving of carrier gas, reducing the difficulty of use and maintenance, and easily grasp the status of the instrument.

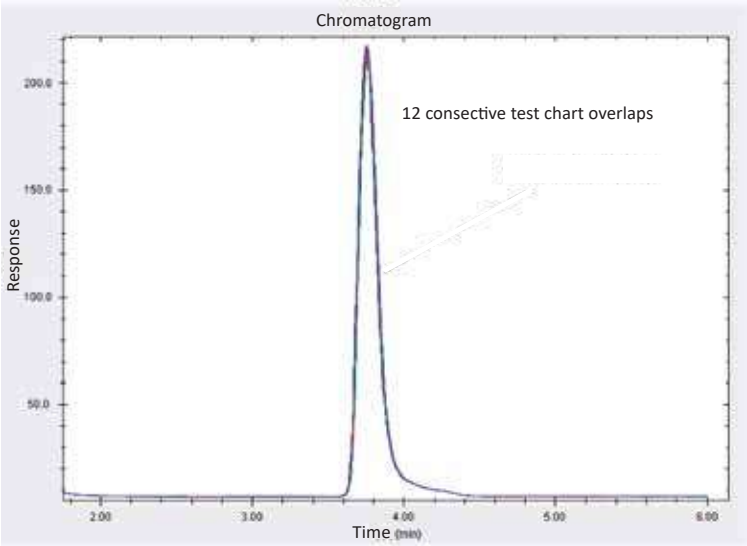
• The system innovatively adopts a multi-core collaborative processing architecture, and task instructions are automatically allocated according to the current load of each micro-core, which greatly improves the response time, execution efficiency and stability of processing tasks, ensuring that the software still operates smoothly after long-term operation.

• The software follows the simple and easy-to-use design concept, retains the necessary system parameter monitoring and setting, and simplifies various unnecessary complex settings through intelligent one-key operation. At the same time, the simple and refreshing,monitoring and parameter setting interface adopt a combination of quasi-materialization and flattening and modular design,and at the same time easy to operate.



Excellent chromatographic stability

The whole flow path of the machine adopts a new generation of high-precision electronic pressure/flow control, with automatic atmospheric pressure and temperature compensation. The highest control accuracy can reach 0.01kPa, with reliable inlet and column oven temperature control module, ensuring that the system has excellent analysis reproducibility. In addition, in some specific applications, the target analyte has a high boiling point and strong adsorption, and can be equipped with a fully inert pipeline to ensure the excellent reproducibility of the system.



Retention time lock

• Excellent GC analytical techniques require consistent retention times. With the new generation of high-precision electronic pressure/flow control, reliable column oven temperature control module and convenient analysis workstation, in the case of cutting and long-term use of chromatographic column efficiency changes, the retention time can be locked in one injection, reducing repetitive editing of MS methods by experimenters and easily obtain

• high-quality gas phase data.

Consistent retention times can be obtained on the same GC or GC-MS system, or even multiple GC and GC/MS systems.

Post-column backflush technology

• he backflushing flow path is precisely controlled by auxiliary EPC, without dead volume.

• Reduce contamination by backflushing the matrix of high molecular weight compounds through split flow to avoid entering the detector; and reduce the accumulation of high boilers in the column.

• Faster cycle times, backflushing away high molecular weight compounds, reducing chromatographic run time and column temperature.

• Longer column life and reducing detector maintenance. Improve data quality and get better analytical results.

Automatic sampler

• Liquid injection

Whether standard injections, fast injections, sandwich injections or large volume injections of up to 1000 µl of liquid samples, GC3000 provide highly reliable and efficient operations, allowing you to easily have stable and reproducible analyses result and no cross-contamination or analyte discrimination. The maximum 110-position autosampler is optional, and there is no need for personnel to be on duty during high-throughput injection.

• Headspace injection

The software's overlapping sample preparation function allows pre-processing such as preheating of multiple samples and analysis of GC to be carried out simultaneously to maximize the utilization of the equipment. The headspace needle is constantly heated and continuously cleaned by carrier gas purge during the process to prevent cross-contamination.

• Solid Phase Microextraction (SPME)

All steps required for SPME analysis can be fully automated, including fiber tip aging, sample extraction, fiber tip analysis, and fiber tip replacement. Derivatization can be performed directly on the fiber tip or by adding derivatization reagents to the sample prior to extraction. The mechanical stress on the extraction head is greatly reduced, increasing its service life and increasing the uptime of the instrument.

• Dynamic Headspace (Purge and Trap DHS)

Compared with static headspace, dynamic headspace greatly improves the detection limit, and retains the characteristics of good reproducibility and easy operation of static headspace. Solid sample viscous material and liquid sample headspace are blown away by inert gas, and volatile substances are transferred to replaceable adsorption wells for enrichment, and the entire process is automated GC/MS analysis.

Application

Environmental monitoring

Monitoring and Analysis of Environmental Pollutants

Food safety

Detection of food additives, food residues, contaminants, illegal additives

Biomedicine

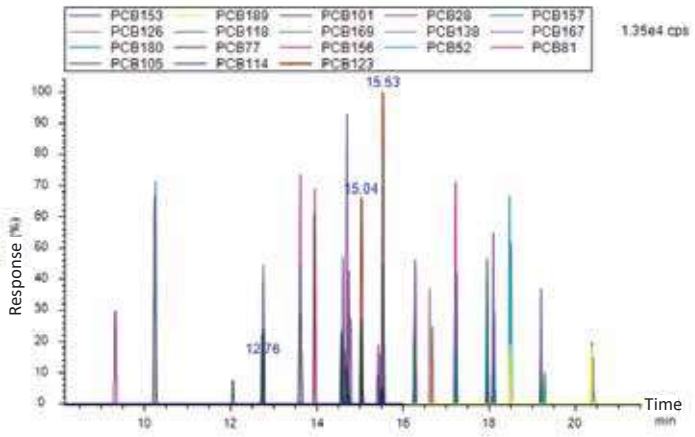
Detection of herbal medicines, synthetic APIs, medicines, and synthetic drugs

Forensic and Toxicology

Detection of illegal drugs and poison

Detection of polychlorinated biphenyls in water

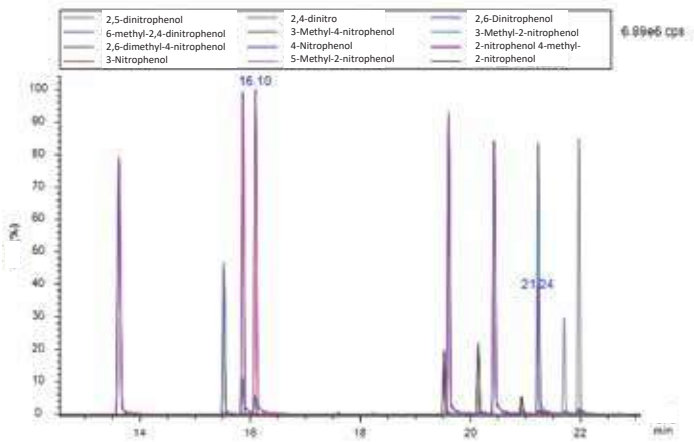
The GCMSMS analysis scheme established on the basis of "HJ715-2014 Determination of Polychlorinated Biphenyls in Water Quality-Gas Chromatography-Mass Spectrometry" effectively reduces the signal-to-noise ratio and improves the sensitivity of target compounds.



Chromatograms of 18 polychlorinated biphenyls Analysis by GC-MS/MS

Detection of nitrophenols in water

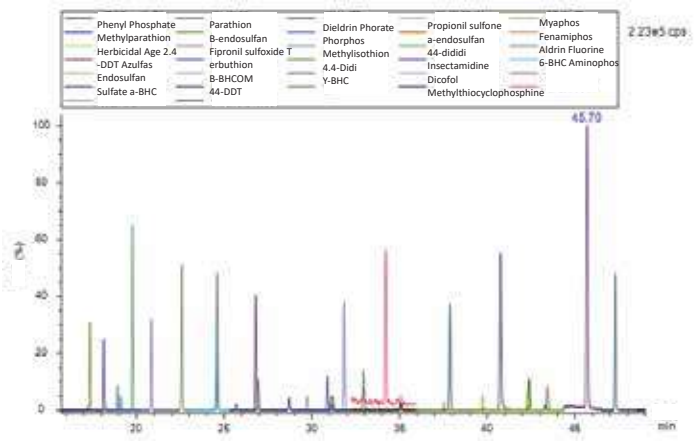
The analysis scheme established according to "HJ1150-2020 Determination of Nitrophenolic Compounds in Water Qualit; Gas ChromatographyMass Spectrometry" can provide a reference for the detection of nitrophenolic compounds in water quality.



Chromatograms of 12 Nitrophenols Analysis by GC-MS/MS

Detection of banned pesticide residues in herbal medicines

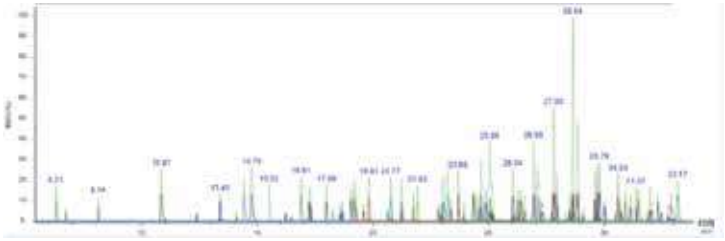
The sensitivity of the method meets the requirement of "undetectable" limit of quantification stipulated in the new pharmacopoeia. The established GC/MS analysis scheme can provide a reference for the detection of banned pesticide residues in medicinal materials.



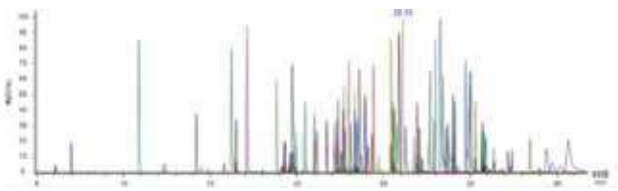
Chromatograms of 33 Pesticide Residues Analysis by GCMSMS

Detection of various pesticide residues in food

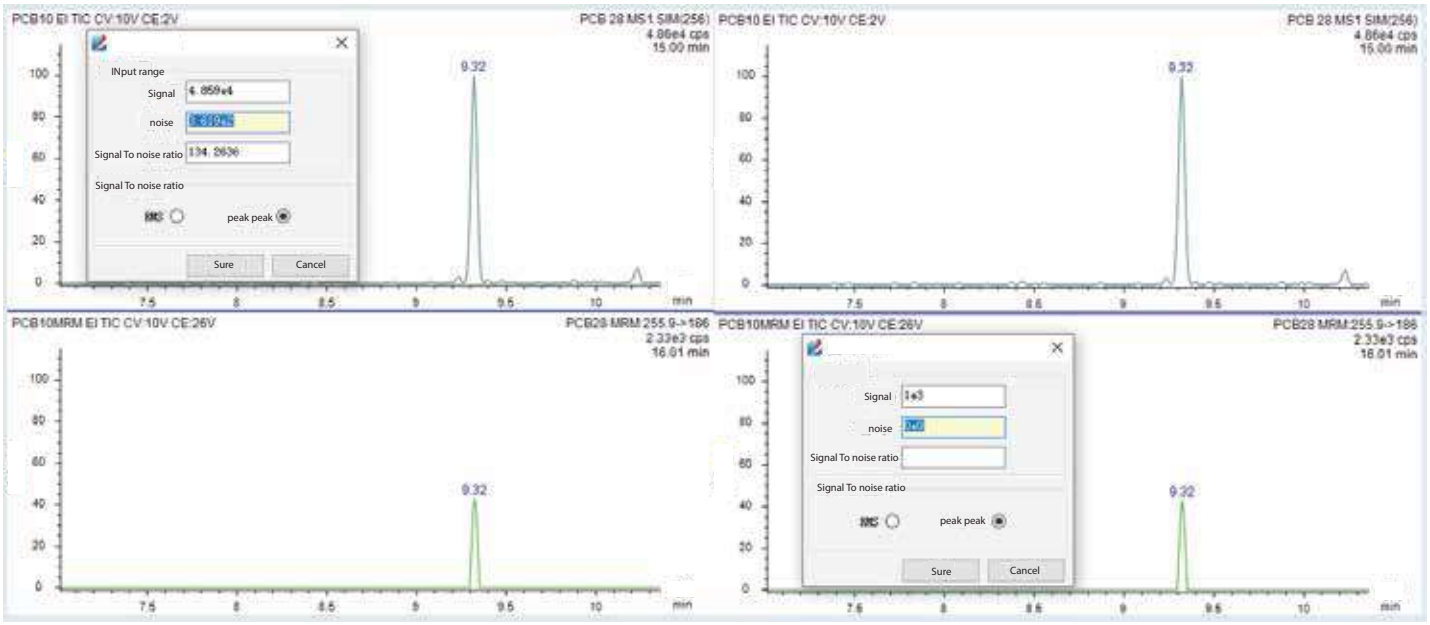
"GB23200.113-2018 Detection of Residues of 208 Pesticides and Their Metabolites in Plant-derived Foods by Gas Chromatography-Mass Spectrometry" is the first national standard to use GC-MS/MS for the detection of various pesticide residues. Compared with traditional GC or GC-MS methods, the detection throughput, selectivity and sensitivity of GC-MS/MS national stan-dard are greatly improved (the limit of quantification for many pesticides is lower than 0.01mg/kg), and it will become a powerful assistant for pesticide residue analysis in the industry. It has a database containing thousands of compounds, and adopts intelligent MRM technology (MRM optimized for retention time) to help achieve high-throughput analysis of various pesticide residues in food.



Chromatograms of 208 Pesticide Residues (A Group) Analysis by GCMSMS



Chromatograms of 208 Pesticide Residues (B Group) Analysis by GCMSMS



Comparison of signal-to-noise ratiobetween MS1 and MRM scan modes

		Scan range/Mass Range(amu)
3500	ESI	5-1100

Analytical®
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HPLC Servicing, Validation, Trainings and Preventive Maintenance :

HPLC Servicing :HPLC Servicing : We have team of service engineers who can attend to any make of HPLC promptly @the most affordable cost.

Trainings :We also take up preventive Maintenace to reduce downtime of HPLC's Trainings.

AMC's/CMC :AMC's/CMC :We offer user training both in-House and at customer sites on HPLC principles, operations, trouble-shooting.

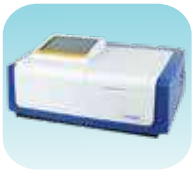
Validations :Validations :We have protocols for carrying out periodic Validations as per GLP/GMP/USFDA norms.

Instruments :Instruments :We offer instruments/Renting Services Modules like pumps,detector etc. on Rent.

About Analytical Technologies

Analytical Technologies is synonymous for offering technologies for doing analysis and is the Fastest Growing Global Brand having presence in at least 96 countries across the global. Analytical Technologies Limited is an ISO:9001 Certified Company engaged in Designing, Manufaturing, Marketing & providing Services for the Analytical, Chromatography, Spectroscopy, Bio Technology, Bio Medical, Clinical Diagnostics, Material Science & General Laboratory Instrumentation. Analytical Technologies, India has across the Country operations with at least 4 Regional Offices, 6 Branch Offices & Service Centers. Distributors & Channel partners worldwide.

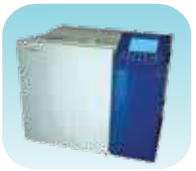
Our Products & Technologies



UV/VIS Spectro 2080+ Double Beam

Infra FTIR

Optima Gas Chromatograph 3007



Optima Gas Chromatograph 2979 Plus

Flash Chromatograph

Atomic Absorption Spectrophotometer

Liquid Partical Counter

Optical Emission Spectrophotometer

DSC/TGA

Semi Auto Bio Chemistry Analyzer

HEMA 2062 Hematology Analyzer

Micro Plate Reader/Washer

URINOVA 2800 Urine Analyzer

Total Organic Carbon 3800

Fully Automated CLIA

NOVA-2100 Chemistry Analyzer

PCR/Gradient PCR/ RTPCR

TOC Analyzer

Laser Particle Size Analyzer

Ion Chromatograph

Water purification system

Regulatory compliances

Corporate Social Responsibility

Analytical Foundation is a nonprofit organization (NGO) found for the purpose of:

1.Research & Innovation Scientist's awards/QC Professional Award : Quality life is possible by innovation only and the innovation is possible by research only, hence ANALYTICAL FOUNDATION is committed to identify such personallities for their contributions across various field of Science and Technology and awarding them yearly. To participate for award, send us your details of research / testing / publication at Info@analyticalfoundation.org

2. Improving quality of life by offering YOGA Training courses, Work shops/Seminars etc.

3. ANALYTICAL FOUNDATION aims to DETOXIFY human minds,souls and body by means of yoga, Meditation, Ayurveda, Health Care, Awards, Media, Events, Camps etc.

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