

TO BE A WORLD-LEADING

Analytical Technologies

PROVIDER

Liquid Chromatography Mass Spectrometry

LC MS 3100



EPC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

Analytical Technologies Limited

An ISO 9001 Certified Company

www.analyticalgroup.net

Cost-effective LC-MS solution with top performance

LC-MS 3100 Liquid Chromatograph Mass Spectrometer is a commercial LC-MS system which meets the national standards for LC-MS and for determination of chemicals in food and environment. Our Patented heating technology and nebulizer gas technology help increase vaporization efficiency and background noise while increasing sensitivity. Powerful ChemAnalyst LC-MS chemical workstation software simplifies all operation procedures and advanced networking function enables remote control instrument and view test result.

►► Features:

- Quick scan speed (maximum 10,000 amu/s, bar chart)
- Wide scan range (10-2000 amu)
- High detection sensitivity
- Auto calibration and tuning function
- LC high pressure pump, auto sampler, thermostat, UV detector, mass spectrum
- Control and data process are integrated in the software Wireless vacuum chamber

►► Applications:

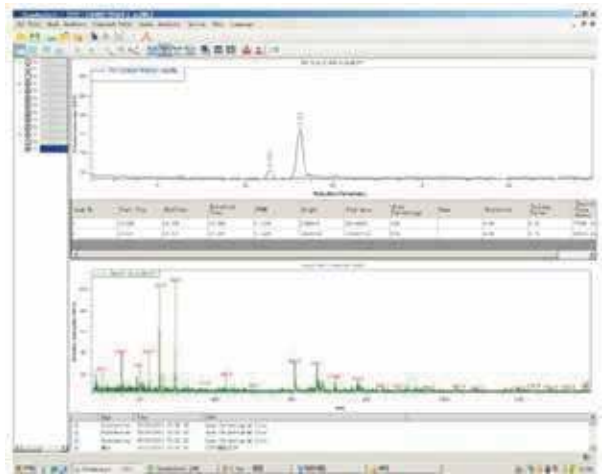
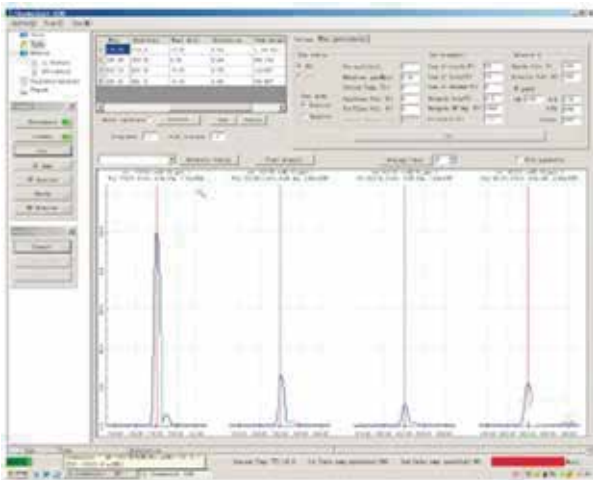
LC-MS 3100 is a necessary analytical tool for organism analysis lab, drug and food laboratory, production process control, quality control department, etc.

►► Technical Specifications:

- **MS** : ESI and APCI ion sources with hurdle free interchange options without interrupting vacuum
- **Mass Range** : 10-1500 amu (Optional:10-2000 amu)
- **Mass accuracy** : ± 0.1 amu (mass calibration range of scan mode)
- **Mass axis stability** : ± 0.05 amu/12h (under constant temp. of $\pm 2^\circ\text{C}$)
- **Scan rate : standard mode** : 15000 amu/s, fast scan mode: 15000 amu/s
- **Resolution** : unit resolution (FWHM<-0.7amu)
- **SIM signal to noise ratio** : ESI, 200 ul/min, SIM
- **Peak area Repeatability** : RSD 4.6%/0
- **Retention time repeatability** : RSD
- **Sensitivity ESI positive** : 1pg reserpine, S/N > 1000:1 (RMS)
- **Cross talk** : 0.003 %
- **Minimum pause time** : 1 msec
- **Minimum dwell time** : 5 msec
- **Dynamic range** : 6 orders
- **Vacuum system** : Highly efficient vacuum systems consist of Turbo molecular pumps followed by rotary mechanical pumps shall be provided

►► Advanced Software:

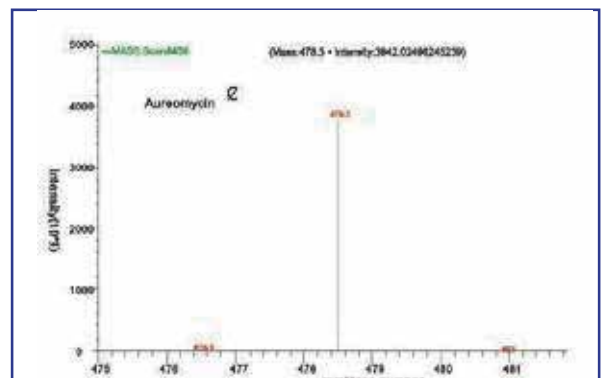
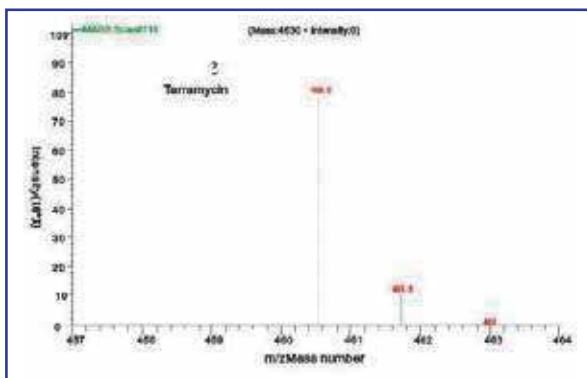
Qualitative analysis- Full scan mode for qualitative analysis of target molecules in the sample
 Quantitative analysis- Selected ion monitoring mode (SIM mode) for quantitative analysis of target molecule
 With higher detection ability-SIM mode is used to analyze low concentration or low ionization efficiency samples while Full scan mode is able to analyze higher concentration or high ion efficiency unknown sample
 The multi-channel acquisition function of LC-MS 3100 enables to analyze more compounds in a single sample scan. During analysis users can select positive or negative ionization mode, selective ion monitoring (SIM) and full scan mode are or use all modes in a single test, thus greatly improving analysis speed and working efficiency



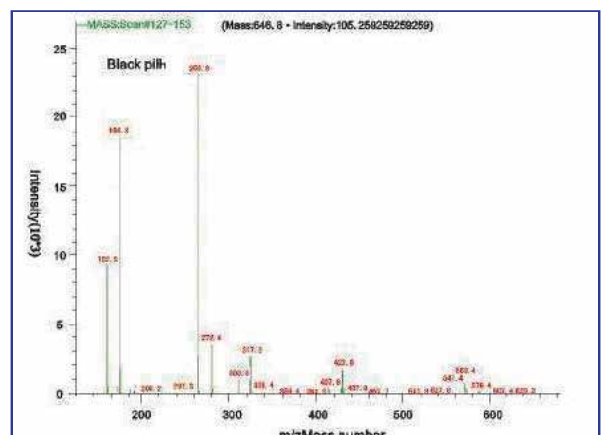
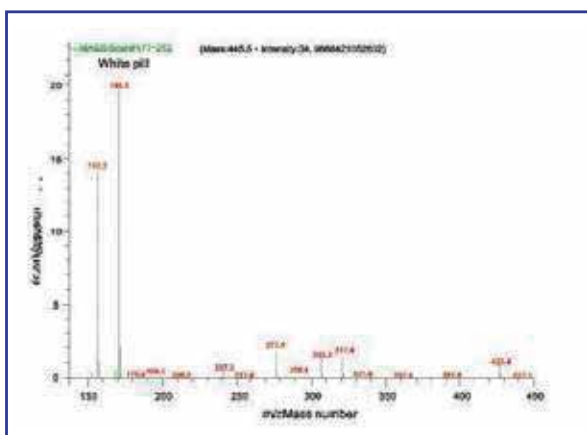
Power LC-MS chemical workstation software (chemAnalyst) simplifies all operation procedures from tuning to method set, sampling to qualitative and quantitative data analysis. Advanced networking function enables you to remote control instrument and view test results.

1. Medicine production monitoring

A. Antibiotics

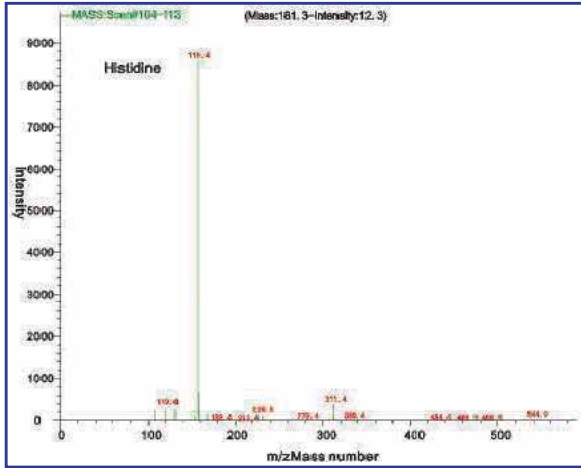


B. Bufferin

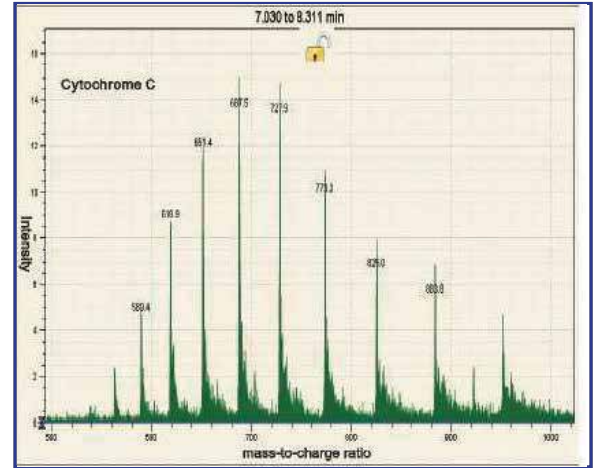


2. Biological field

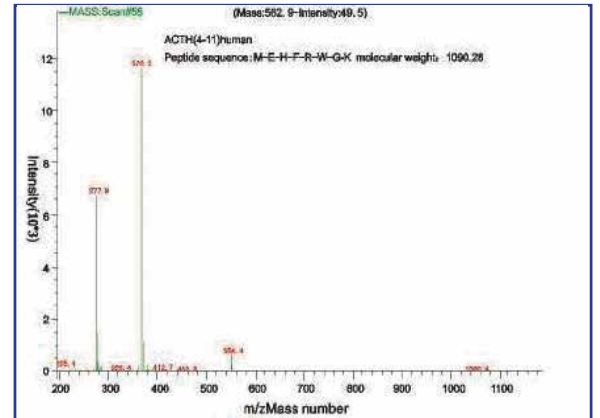
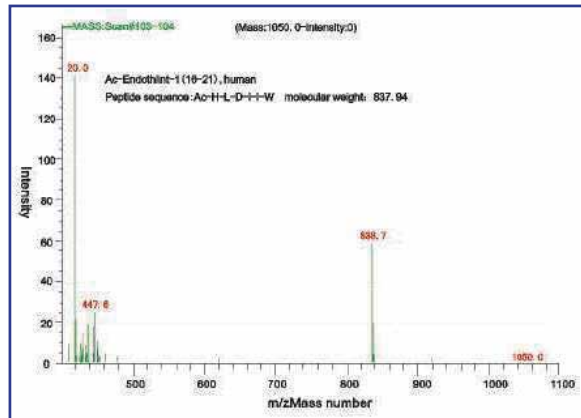
A. Amino acid



B. Cytochrome C



C. Peptide



Delivery Pump -3100 Quaternary pump

►► Online Degassing: 4-Channel (480µL/channel)

Delivery Method: Double piston plunger, series/ parallel
 Flow Rate Range: 0.0001mL/min -10.000mL/min (increment 0.001mL/min)
 Flow Rate Accuracy: ±0.5% (@1mL/min water)
 Flow Rate precision: ≤0.025 % RSD (@1ml/min, water)(ASTM)
 Max. Pressure: with 9,000 PSI
 Pressure Pulsation: ≤1%@1mL/min, waterback pressure 60Mpa
 Gradient Accuracy: ≤0.2%SD
 Composition: precision: ≤0.15% RSD
 Solvent Composition accuracy: ±0.5%
 Pump Seal Wash: Automatic, integral, active, recirculating
 Pumping system: Software controlled
 Compressibility Compensation: Automatic and Continuous
 Solvent Setting range: 4 solvent setting range: 0-100% with 0.1% step
 Gradient mixing: Active
 Power Requirement: 100-120V, 60Hz; 200-240 V,50 Hz
 pH Range: 1 to 12
 Gradient Range of Set Concentration: 0-100% (in 0.1%steps)
 Delay volume: ≤200µL
 Plunger rinsing: Automatic and programmable
 Mode of Operation: Isocratic and Gradient
 Safety features: Leak sensor, error detection & display, safe leak handling
 Wet prime: Automatic
 Operation: 11 gradient curves
 Function: Automatic purge



►► Analytical Technologies, Auto sampler 3100

Injection modes: Full-loop Partial Loop-fill µL- pick –up
 Cross Contamination: <0.02%
 Injection volume: Programmable from 0.1 µl-100µl (increase up to 250µL)0.1µl increments
 (Sample loop for 20µL, and 100µL)
 Injections Volume Accuracy:1.0%
 Injection precision: Full-loop injection: < 0.25% RSD
 Injection: 1-99 injections per vials
 Sample viscosity: 0.1 - 5 cP
 Needle wash inside and outside needle wash with drying wash can be programed between
 injection and between vials/wells.
 Injection cycle time: <60 seconds
 Valve switching time: 60 msec
 Wetted parts: SS316, PTFE, TEFZEL, VESPEL, glass, For Bio-kit option: PEEK
 and Coalet-steel(needle) instead of SS316
 Carry-over: ≤0.0025% RSD with standard wash Typically <0.01% with extra wash Vials: 2x 100 (2 mL)
 Sample capacity: 2x100 2ml vials (Standard)(optional:192 for 2 x 96 well plate,768 for 2 x 384 well plate)
 Safety features: Leak sensor, Automatic rack and Vial recognition
 Minimum sample required: 10µl residual
 Needle rinsing: Automatic needle rinsing before and after every injection Injection
 linearity: >0.999

Injection needle wash: integral, active and programmable
 Pressure limit: with 9000 psi (15000psi sampling valve is optional)
 Dimensions: 300 x 510 x 360 mm (WxDxH)TM 300 x 575 x 360 mm for ALIAS
 Standard features: Auto dilution and auto addition 4 ° C to 35°C.
 Weight: 19 kg,21 kg for ALIASTM cool
 Max load on top cover: 65 kg
 Power requirements: 95 - 240 Volt AC + 10%; 50-60 Hz,200 VA
 Sound pressure level: LeAq < 70 Db
 Working temperature: 4° - 80°C (0.1°C increments)
 Temperature Accuracy: ±0.2°C
 Storage temperature: -25°C to -60°C
 Humidity: 20 - 80% RH
 GLP features: System have Early maintenance feedback to track instrument usage, electronic records of maintenance and errors



▶▶ Analytical Technologies: Column Oven 3100

Temperature Range: 4°C to 100° C (in 0.1°C increments)
 Temperature Accuracy: ±0.1°C
 Temperature Stability: ±0.1°C of set temperature
 Temperature Precision: ±0.05°C
 Column Length: 300mm, up to three columns,50mm guard column
 Display: 4 digits
 Power Consumption: 100-120V, 60Hz; 200-240 V,50 Hz
 Solvent Condition: pre-heating
 Column tracking: information management tracks and archives column usage history
 Switching valve: Two nine port, eight position
 Method: Peltier heating and cooling
 Safety measures: built in solvent leak sensor and high temperature cut off control etc.



▶▶ Analytical Technologies Diode Array Detector 3100

Diode Array: 1024 diodes
 Diode width: ≤1nm
 Wavelength: 190 - 900 nm
 Light Source: Deuterium lamp & Tungsten lamp
 Spectral Resolution: 0.6 nm/pixel
 Slit width: Programmable
 Bandwidth: 2-8 nm (variable)
 Wavelength Accuracy: ≤± 1 nm
 Wavelength Repeatability: ± 0.1 nm
 Wavelength Precision: ± 0.1 nm
 Noise Level: 0.6×10⁻⁵ AU
 Drift: 5x10⁻⁵ AU/h
 Linear Range: ≥5% at 2 AU
 Max. Sampling Rate: 12 channels, 100 Hz Full spectrum, 100Hz
 Data Acquisition: 120 Hz
 Flow cell Pressure: 1800 PSI
 Flow cell Light Path: 10 mm
 Flow cell Volume: 10µL (semi-micro) with minimum RI effect
 Detection Limit: 2x10⁻⁸ g/mL (naphthalene)
 Wavelength Calibration: Mercury peaks and built-in holmium oxide filter.
 Temperature Operating Range: 5 C below ambient temp to 50 C (temperature control facility)
 Lamp Hour: D2 lamp > 2000hr Lifetime



Rise Time: 0.0s - 9.9s
 Power: AC 10V / 220V, 50Hz / 60Hz
 Consumption: 110W
 Dimensions: 420mm x 280mm x 175mm
 Detection: Double Wavelength
 GLP function: Date of lamp replacement, number of ignitions, Ignition time, peak purity energy and automatic wavelength check etc.
 Flow cell design: Taperslit for reduced RI effect
 Resolution: 1.2 nm per photodiode
 Digital and Optical mode: 3D
 Safety features: Leak sensor

UV-VIS Detector-3100

Measurement range	0.0001-4.0AU
Wavelength :	190-800 nm
Light Source:	Deuterium lamp, Tungsten lamp
Spectral Width	6nm at 254 nm
Wavelength Accuracy	±1 nm
Wavelength Precision	0.1 nm
Baseline noise	±0.5×10 ⁻⁵ AU
Detection	Simultaneous Multi wavelength Two Point
Drift	≤1×10 ⁻⁴ AU/h
Linear Range	≤ 5% at 2.5AU (ASTM)
Max. Sampling Rate	120 Hz
Flowcell Pressure	1200 PSI
Flowcell Light Path	10mm
Flowcell Volume	10µL-14µL
Flowcell Design	Suitable flow cell
Detection Limit	5X10 ⁻⁹ g/mL
Lamp Hour	D2 lamp > 2000hr Lifetime
Wavelength Repeatability	± 0.1 nm.
Wetted material	SS, PEEK, Fused silica
Cell Temperature	Up to 40 °C



Time programmable Wavelength, peak width, auto balance, polarity, wavelength range, threshold, lamp bandwidth and spectra storage mode

GLP features RFID for electronics records of flow cell and UV lamp conditions & early maintenance feedback for continuous tracking of instrument usage in terms of lamp burn time with user settable limits and feedback messages, and data recovery card

Safety Features: Leak Detection, safe leak handling and excess pressure monitoring etc.

▶▶ **HPLC Servicing, Validation, Trainings and Preventive Maintenance :**

- 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 maintenance to reduce downtime of HPLC’s Trainings.
- AMC’s/CMC : We offer user training both in-House and at customer sites on PLC principles, operations, troubleshooting.
- Validations : We have protocols for carrying out periodic Validations as per GLP/ GMP/U SFDA norms.
- 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 globe. Analytical Technologies Limited is an ISO :9001 Certified Company engaged in Designing, Manufacturing, 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**



▶▶ **Regulatory compliances**



▶▶ **Corporate Social Responsibility**

Analytical Foundation is a Nonprofit Organization (NGO) found for the purpose of:



Analytical
Foundation

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 personalities 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 DETOXYFY human minds, souls and body by means of Yoga, Meditation, Ayurveda, Health Care, Awards, Media, Events, Camps etc.

▶▶ **Reach us @**



HPLC Solutions MultipleLabs Analytical Bio-Med Analytical Distributors Analytical Foundation (Trust)

Corporate & Regd. Office:
Analytical House, # E67 & E68,
Ravi Park, Vasna Road, Baroda,
Gujarat 390 015. INDIA

T: +91 265 2253620
+91 265 2252839
+91 265 2252370
F: +91 265 2254395

E: info@hplctechnologies.com
info@multiplelabs.com
info@analyticalgroup.net
info@analyticalbiomed.com

W. www.ais-india.com
www.analycalgroup.net
www.hplctechnologies.com
www.multiplelabs.com

Sales & Support Offices:
across the country :
Distributors & Channel
partners World Wide

Note : Company reserves rights to add/delete/modify the contents /technical specificationsof the catalogue without prior notice.