Multiplelabs
Turnkey Laboratories Solutions

Analytical®
Technologies Limited

HPTLC - 3000i Series

Thin Layer Chromatography HPTLC

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

Analytical Technologies Limited

An ISO 9001 Certified Company

www.analyticalgroup.net

HPTLC Imaging System:

• Light source control function: the computer can select the wavelength of the light source, the opening and closing time and the light quantity adjustment;

• Operation management function: it can manage operator permissions,analysis time, location, instrument conditions, analysis methods and support electronic signatures;

• Image optimization function: Correct the image color according to the light source condition to make it more realistic, remove the uneven illumination caused by the light source, the darkness caused by the lens and the wide-angle barrel deformation;

• Image editing function: crop the image, partially or fully enlarge, reduce,rotate and text mark;

• Background optimization function: Multiple images can be overlapped and merged to remove background interference, and the blank plate can be imaged, and the influence of unevenness of the adsorbent can be removed, and the interference can be removed multiple times at intervals;

• Image comparison function: Image comparison function: It is possible to compare the plates between two layers of windows or multiple windows, and to compare the tracks of different samples between different plates or one-to-many comparison with standard tracks. Each track can be reorganized and sorted for parallel comparison; different tracks can be compared and overlapped, and a standard track generation template can be used for template comparison;

• Dynamic calculation function: After the origin and leading edge are set, the Rf value of each spot can be dynamically displayed, and the chromatogram, background, peak height and peak area can be visually compared;

• Data analysis function: The standard equation can be calculated by single point method, two point method and multipoint method, and the content of speckle material can be calculated by external standard method, internal standard method and normalization method;

• Fingerprint function of traditional medicine: cluster analysis of different samples, obtain the fingerprint of TM, guide the similarity analysis and blending guidance between samples;

• Image post-processing function: It can adjust the image format, pixel, color and exposure of the image, change the contrast, saturation and brightness,remove the flaw of the image, and is a good helper for publishing professional articles

Specification :

Imaging size	mixmum 200×200mm
Image sensor area	≥1 inch
Image sensor image quality	≥20,000,000 pixels
Exposure time	0-10s
Communication method	USB
Controller	6 USB interfaces
System	Windows10

• Imaging wavelength ：standard UV254nm, UV365nm, white light 400-700nm, the remaining wavelengths can be customized

• Lighting time: Any computer setting between 0-600min, it will be automatically turned off at the time. If you do not consider the lamp life and safety factors, you can expand to 0-∞min any time

• Color depth ：24bit, the number of levels is 16777216

• Professional display system ：with 16 bit data processing capability,can display 1.07 billion colors, 4G memory, 2G memory

Atomatic TLC Sampler :

Use of the instrument :

Spot sampling the most critical step in TLC analysis, which determines the accuracy and repeatability of quantitative analysis.Fully automatic spot sampling can not only obtain perfect spot spline bands, but also has hinh automation, convenience and rapidity.

Instrument Composition :

- Mein unit (spot arm, Positioning device, Gas control device, USB serial port)
- Autosampler (including :Vial punture device)
- TLC sempling workstation software

Spotting method	Contact and spray type
Spot shape	dot, strip, square
Spot length	0-195mm
Spotting platform	20×30cm thin layer
Spotting volume	10nL-2mL
Spot accuracy	±1.25nL
Syringe specifications	10μL、25μL、50μL、100μL
Syringe drive	6400 steps / turn, 3200 steps / mm, 6400 steps / μL
X-axis drive	1600 steps / turn, 200 steps / mm
Y-axis drive	mm 1600 steps/turn, 400 steps / mm
Air pressure	0.4MPa(nitrogen or compressed air)
Gas flow rate	2-3L/min
Heating accessories	heating chassis: room temperature 60 °C, accuracy ± 1 °C; heating nozzle: 30~80 °C
Automatic Sampler	2mL* 96

TLC Scanner:

Instrument Indicators

• Measurement methods ：reflection absorption method, transmission absorption method and fluorescence method.
• Light source ：halogen tungsten lamp, deuterium lamp, mercury lamp (automatic switching)
• DAC: 24-bit A/D, 8-channel, 20μs, 2-time conversion
• Measurement room lighting: standard 254, 365nm 8W, white light can be selected
• Filters: 6 filter positions, other filter
wavelength can be customized.
• Slit size: 0-8mm in length, 0-4mm in width, continuous variable, arbitrary combination, computer automatic control
• Data acquisition: data acquisition speed 30000DPS, data transmission: 2000000baud

Instrument Composition

• Host (including light source, grating monochrometer, mobile platform, USB serial port)
• TLC Imaging System
• Professional TLC Fingerprint Workstation
• Automatic TLC Sampler

Spectral range	190nm~900nm(continuously adjustable)
Monochromator	holographic grating (1200lines/mm)
Spectral bandwidth	5nm、10nm、20nm optional
Wavelength accuracy	±0.5nm
Wavelength reproducibility	better than 0.1nm
Minimum displacement resolution	10-50μm
Imaging wavelength	254nm、365nm、254nm, 365nm, white light (automatic control)
Measuring platform	200mm×200mm chromatographic plate
Scanning speed	0-120mm/s
Detector	Photomultiplier
Scanning mode	linear scanning
Operating System	WIN7/8/10
Power Interface	USB 220V 300W

Fully Automatic GPC Gel Purification System:

Gel Permeation Chromatography (GPC) can separate compounds with different molecular sizes. It is the most convenient sample purification technology. In the analysis of small molecular organic compounds in food, animal tissue, soil and traditional medicine, the extracts of general samples contain a large number of macromolecular substances, such as fat, pigments, etc., which will greatly interfere with the results of detection. Using GPC to purify the sample can remove the interfering substances such as fat, protein and pigment, and ensure the stability of the analysis results.

Analysis of the drugs :

Recombinant hepatitis B vaccine, diphtheria antitoxin,lyophilized diphtheria antitoxin, tetanus antitoxin, polyvalent gangrene antitoxin, botulinum antitoxin, anti-viper serum, Anti-Cobra serum, anti-anthrax serum, anti-rabies serum, human blood albumin, human immunoglobulin, antivenom serum Human Hepatitis B Immunoglobulin, Human Rabies Immunoglobulin, Human Tetanus Immunoglobulin, Human Immunoglobulin for Intravenous Injection, anti human T cell Porcine Immunoglobulin, anti human T cell immunoglobulin, recombinant human erythropoietin, injection recombinant human interferon alpha 1b, recombinant human interferon alpha 2a for injection, recombinant injection Human interferon alpha 2b, human interferon gamma for injection, recombinant human interleukin-2 for injection, recombinant human granulocyte stimulating factor injection, recombinant human granulocyte macrophage stimulating factor for injection, recombinant bovine basic fibroblast growth factor external solution, recombinant human epidermal growth factor for external use, recombinant streptokinase for injection, injection Anti-human T cell CD3 mouse monoclonal antibody was used.

Instrument Composition :

- Double plunger type high pressure chromatography pump
- Full wavelength ultraviolet detector
- Dedicated GPC column
- Fully automatic fraction collector
- Fully automatic sampler (including injection pump)

Main Indicators :

- 0-10mL/min
- Flow rate: 0-10mL/min
- Automatic injection volume: standard 5mL loop, other specifications can be customized
- Collector: standard 15 x 150mm test tube, 160 holes
- UV detection wavelength: 190-800nm
- Column: 25 x 400mm, filler Bio-Beads S-XS, 200-400 mesh, solvent system ethyl acetate cyclohexane (1:1)

Use of the Instrument :

The main application of GelMaster
Separation and Analysis of Pesticide Residues, Veterinary Drug Residues, Antibiotic Polycyclic Aromatic Hydrocarbons, Polychlorinated Biphenyls, Mycotoxins and Pigments.

Accelerated Solvent Extractor :

Instrument Characterist :

• Six samples can be processed at the same time, 96 samples can be processed in one working day
• Six channels are controlled separately, and other channels can continue to operate when one channel fails
• With external air pressure detection system, leakage alarm function,over-temperature and over-voltage protection function
• Each location has separate inlet and outlet valves and pressure sensors to prevent crosscontamination
• The integrated elution function can discharge solvents into separate waste liquid containers, making cleaning more convenient
• High degree of automation reduces user operation and improves security

Instrument Composition :

• Infusion pump
• Touch screen
• Extraction cell
• Extraction furnace
• Collect bottles
• Collector rack
• Auxiliary tools

Main Indicators :

Extraction time	20min/6 (samples)
Specification of the extraction cell	10ml/20ml/40ml
Specification of the collection bottle	250 ml
Cleaning position	6
Temperature	Room temperature 200°C (±0.5°C)
Pressure	0-20MPa,(±0.3MPa)
Pump flow rate	0.1-50mL/min
Power consumption	maximum 1.7Kw
Power supply	100-240 VAC + 10%, 50-60 Hz
Gas	0.4-1MPa(laboratory grade nitrogen)
Mixer	(Solvents)
Size (wxdxh)	770mmX608m mX755mm
Weight	95kg

Use of the instrument

The determination of semi-volatile organic compounds in soils and sediments by gas chromatographymass spectrometry.It is widely used in the fields of environment,food, pharmacy, chemical industry and agriculture. It is especially suitbale for the analysis of pesticide residues in environmental solid samples and the analysis of fats and oils in food. This is an ideal choice for solid or semi-solid sample pretreatment in environmental, food, pharmaceutical and agricultural systems

Handle multiple samples at the same time :

In order to improve the extraction rate of pretreatment and fast processing of multiple samples.

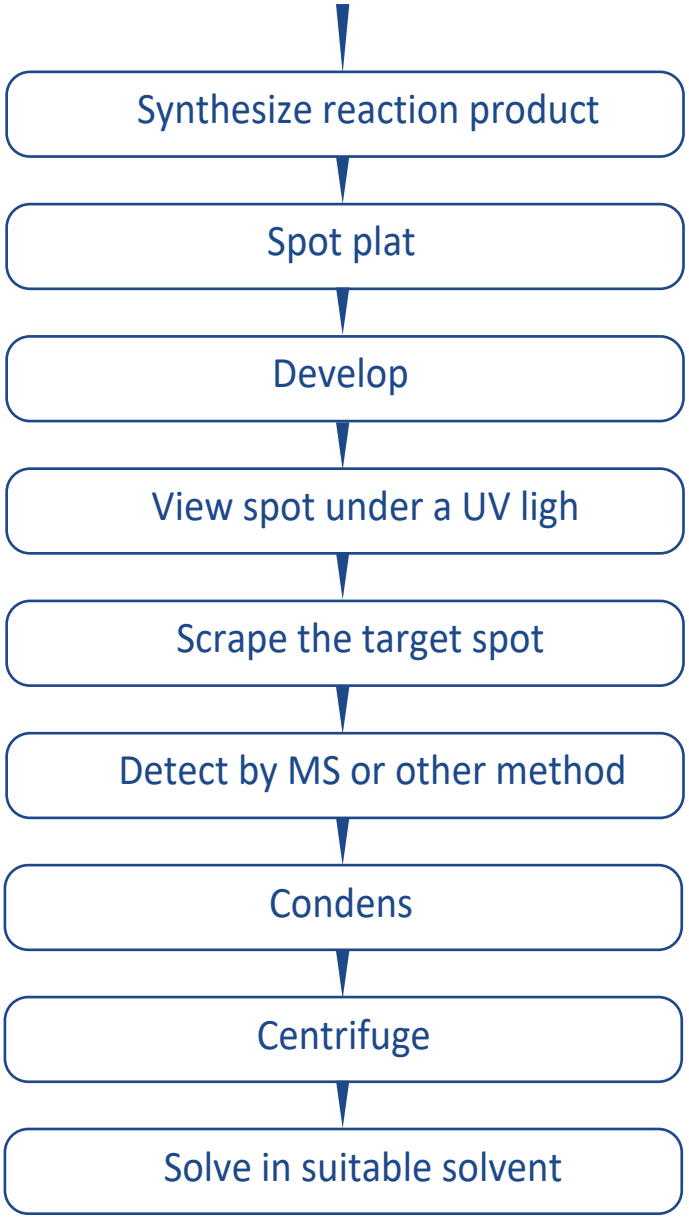
It can process six samples simultaneously, saving time, high efficiency and consuming less solvents. Touch screen design, online cleaning, simple and convenient, price concessions, suitable for batch processing.

HPTLC-HPTLCMS

Thin layer chromatography - Mass spectrometry interface instrument :

Chromatography originated in the early 20th century. Filled a glass tube with calcium carbonate and eluted the extract of plant pigment by petroleum ether. After eluting for a period of time, the plant pigment was separated in the calcium carbonate column, and dispersed from one band into several parallel bands. Scientists invented thin layer chromatography (TLC)on the basis of chromatography. The advantage of TLC is its ability to quickly separate complex mixtures, which is a very useful means of reaction tracking, and can also be used for solvent selection in column chromatography separation.
This method is now widely used in chemical laboratories, such as organic synthesis, natural product analysis and other fields.

Sample extract method for classic TLC



Classic TLC method :

Classic sample spot analysis of TLC plate requires scraping off the target spot, dissolving in a suitable solvent, centrifuging to separate the upper supernatant, air drying and dissolving in a solvent used for GC-MS or LC-MS and then perform mass spectrometry analysis.The whole procedure takes time from a few hours to a few days. So it is time-consuming and laborious, with a low efficiency!

TLC-MS method

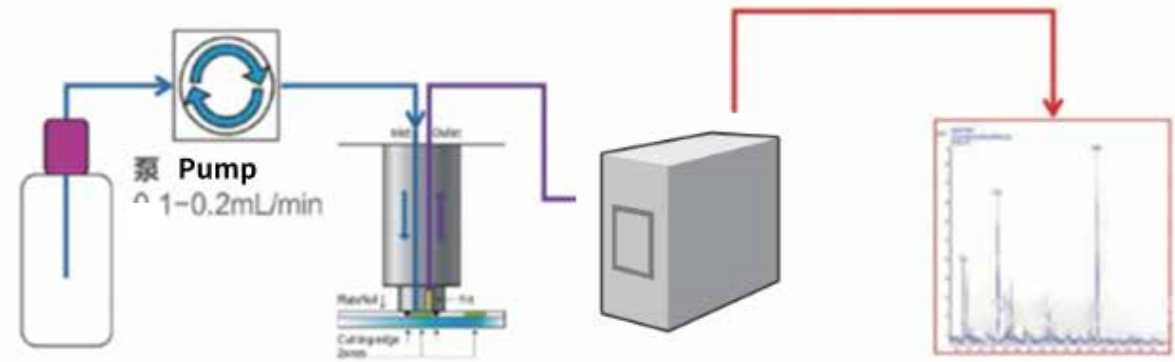
TLC-MS interface can quickly extract samples on TLC plate and transmit them to mass spectrometry online for detection. Compared with classic TLC method, TLC-MS is more simple and reliable. The MS information of samples can be obtained in 30 seconds, which greatly improves research efficiency and truly realizes in-situ rapid detection.

TLC-MS

Elution solvent → TLC extract → MS identification → Data analysis.

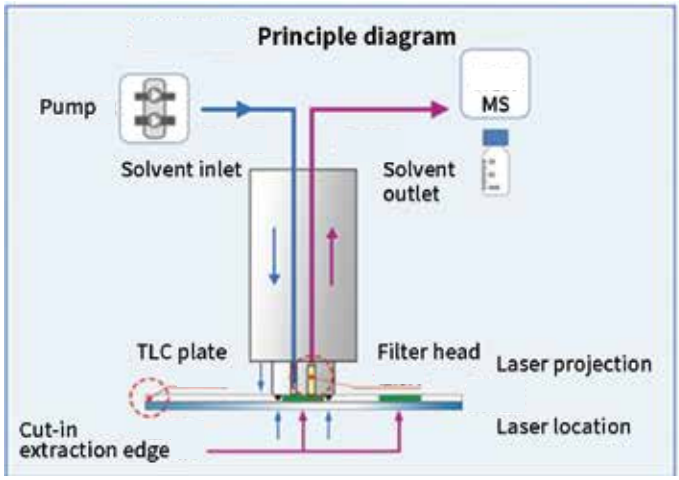
Obtain MS information in 30s!

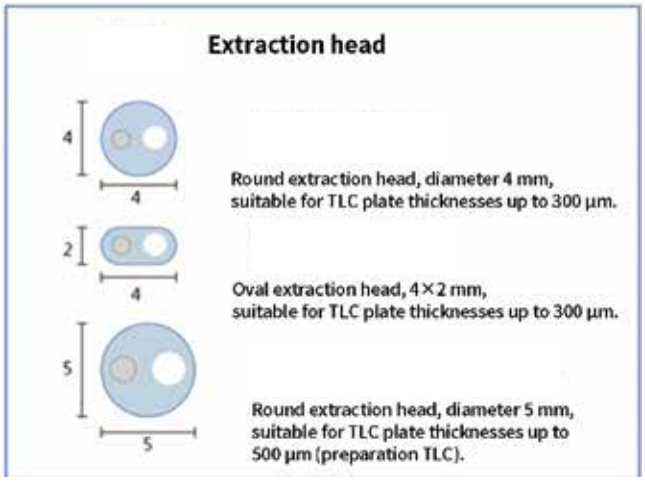
Experiment workflow



Principle of MS interface

Place the TLC plate on the extraction platform, locate the target spot need to be extracted by laser, press down the extraction head, turn on the connecting pipe switch, then the eluent will extract the target spots on the TLC plate,and the extract can be directly injected into the mass spectrometry or collected into the sample bottle.





Instrument composition

Pump MS interface MS

Pump

1. Use parallel double plunger high precision constant flow pump, with low fluctuation, stable baseline and accurate flow
2. Flow range: 0.001-10 mL/min
3. Pressure range: 0-40 Mpa
4. Flow accuracy: < ± 0.3%
5. Flow precision: < 0.06%
6. Pressure fluctuation: ± 0.08 MPa

MS interface

Characteristics

1. No further processing after TLC, samples can be directly extracted from TLC plate for mass spectrometry analysis, and
single spot elution can be ensured.
2. No sample processing, directly analysis the spot sample, a large number of different sample analyses can be carried
out with a simple operation steps.
3. Elution extraction is fast and spot elution can be completed in a few minutes.
4. High efficiency, use less eluting solvent.
5. Different sizes of extraction heads can be replaced.
6. The eluting head will be automatically cleaned by gas after each analysis.

Specifications

1. TLC plate size: Max 200*200 mm
2. Gas source: Nitrogen or compressed air
3. Laser: 5 mW, long lifespan
4. Flow rate of extraction solvent: 0.05-0.3 ml/min
5. Seal pressure: Max 500 N
6. Extraction head: diameter 4, 5 mm for round head; 4*2 mm for oval head

Mass spectrometer

1. 1. With a unique operating interface that can be directly used for quality analysis of TLC spots.
2. Used for mass analysis of reaction mixtures and chromatographic components.
3. With a pre-quadrupole rod.
4. Filtering out neutral noise while optimizing transition electric fields.
5. The high precision quadrupole rod guarantees an excellent resolution.

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.

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GCMS

XRD

Total Organic Carbon 3800

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PCR/Gradient PCR/ RTPCR

TOC Analyzer

Laser Particle Size Analyzer

Ion Chromatograph

Water purification system

Regulatory compliances

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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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