

## LC600

### High Performance Liquid Chromatography



# High Performance Liquid Chromatography

From teaching purpose to daily analytical work, the LC600 system's robust features strike a balance of simplicity, performance and reliability that makes it the perfect instrument from any laboratory with a limited budget and critical application requirements. LabTech is dedicated to assuring the quality of results while helping users meet regulatory compliance.

Food



Life science



Education and Research



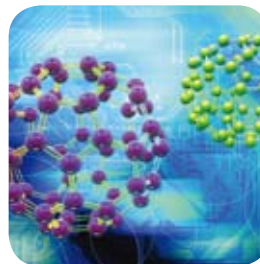
Environmental Monitoring



Pharmaceutical



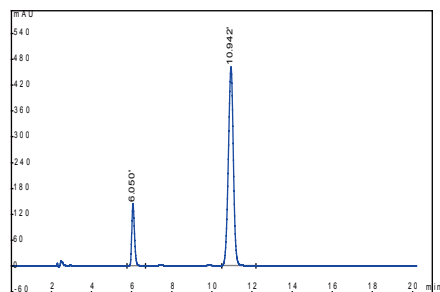
Agricultural Analysis



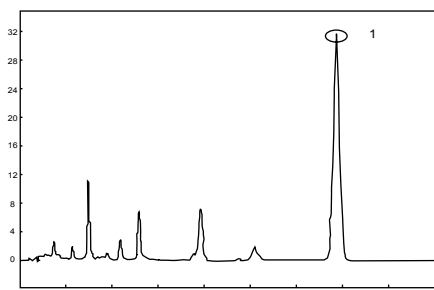
Fine Chemicals



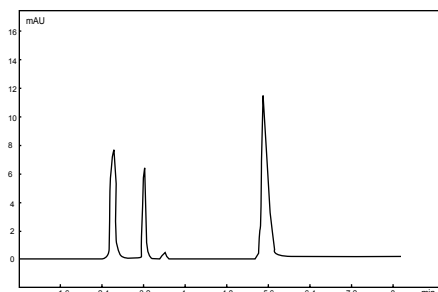
Petrochemical



Determination of Amoxicillin and Clavulanate Potassium for Suspension by LabTech HPLC



Determination of Tanshinone II \_ A in the Compound Tanshen Tablet by LabTech HPLC



Separation and Determination of Organic Acids by LabTech HPLC



# HPLC Modules



P600 Pump



Binary Gradient System



UV600 Plus Detector



Isocratic System

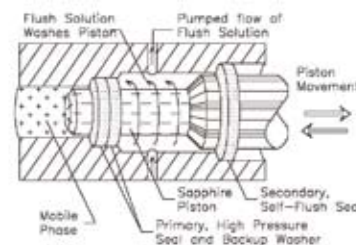
- Compact design, applying world-class HPLC technology
- Flexible configuration, providing different systems for various applications
- High accuracy, precision and sensitivity
- Small dead volume, low noise and drift
- Large LCD screen with 320x240 pixels, more convenient for control
- Intelligent autosampler provides more flexible applications

## HPLC system consists of following modules

- P600 High pressure liquid pump
- UV600Plus UV detector
- Rheodyne Injector(standard) or Autosampler (optional)
- HPLC workstation
- Column
- Column oven(optional)
- Start kit

## P600 High Pressure Liquid Pump (Analytical or Preparative)

- Sealed pump design is dustproof
- Stable and reliable solvent delivery system can work continuously and efficiently to satisfy any strict requirements
- Top servo motor with CPLD control technique provides high accuracy, long duration and low noise
- 10ml, 50ml or 100ml pump head are available
- The on-line plunger clean is standard configuration to ensure free pump maintenance
- Unique flow calibration and auto-compensation technique



On-line pump clean

# Specification

| Type               | Analytical                                                                                                                                                                                                          | Semi-preparative                              | Preparative                                   |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| Delivery method    | Tandem double plunger                                                                                                                                                                                               | Tandem double plunger                         | Parallel double plunger                       |
| Flow range         | 0.001-9.999ml/min                                                                                                                                                                                                   | 0.01-49.99ml/min                              | 0.01-99.99ml/min                              |
| Flow precision     | 0.08%RSD                                                                                                                                                                                                            | 0.1%RSD                                       | 0.1%RSD                                       |
| Flow accuracy      | ±1.0%<br>(1.0ml/min, water, room temperature)                                                                                                                                                                       | ±2.0%<br>(1.0ml/min, water, room temperature) | ±2.0%<br>(1.0ml/min, water, room temperature) |
| Max. Pressure      | 42MPa                                                                                                                                                                                                               | 20MPa                                         | 10MPa                                         |
| Pressure unit      | Mpa、Kgf/cm2、Bar、Psi                                                                                                                                                                                                 |                                               |                                               |
| Pressure pulsation | <1.0%                                                                                                                                                                                                               |                                               |                                               |
| Gradient precision | 0.5%                                                                                                                                                                                                                |                                               |                                               |
| Gradient accuracy  | ±1.0%                                                                                                                                                                                                               |                                               |                                               |
| Gradient curve     | 11 kinds of gradient curves are available including no.1 linear curve, no. 2 Step curves, no. 4 convex curves and no. 4 groove curves; all the gradient curves can be changed freely according to the gradient time |                                               |                                               |
| On-line clean      | On-line clean                                                                                                                                                                                                       |                                               |                                               |
| Control method     | PC and local control                                                                                                                                                                                                |                                               |                                               |

## UV600Plus UV Detector

- Compact C-T optical platform
- High sensitivity, extremely low noise and drift
- Special aberration-corrected optical design
- LOG chip provides real-time logarithm calculation, decreasing noise
- Deuterium lamp with excellent performance, long lifetime, lower drift
- C-T monochromator guarantees outstanding wavelength precision and repeatability
- Elaborate flow sample cell ensures the best performance on sensitivity, energy and volume
- Self-calibration once power on ensures the optimized working state
- Wavelength is programmable control, improving the selectivity and sensitivity



| Type                 | Analytical               | Semi-preparative | Preparative |
|----------------------|--------------------------|------------------|-------------|
| Optical system       | C-T monochromator        |                  |             |
| Wavelength range     | 190--600nm               |                  |             |
| Wavelength precision | ±0.2nm                   |                  |             |
| Wavelength accuracy  | ±1.0nm                   |                  |             |
| Bandwidth            | 8nm                      |                  |             |
| Baseline noise       | ±0.5×10-5AU              |                  |             |
| Baseline drift       | 1.0×10-4AU/h             |                  |             |
| Light source         | Deuterium lamp(standard) |                  |             |
| Flowcell pathlength  | 10mm                     | 4mm              |             |
| Flowcell volume      | 10μl                     | 6μl              |             |
| Flowcell pressure    | 10Mpa                    |                  |             |

## Option units

### RI600 Refractive Index Detector

- Real-time monitoring
- High continuously sensitivity, stability and repeatability
- Unique optical heat exchanger with counter-current thermal protection as well as programmable temperature control system ensure RI600 detector extremely stable baseline and high SNR, shorten analysis time
- Auto self-clean and auto zero function



| Refractive Index Range  | 1.00~1.75RIU                               |
|-------------------------|--------------------------------------------|
| Flow Rate               | 0.2~3.0ml/min                              |
| Flow Cell               | 9µl                                        |
| Flow Cell Max. Pressure | 6Kg/cm <sup>2</sup>                        |
| Dead Volume             | 24µl                                       |
| Linear range            | 0~1000µRIU                                 |
| Noise                   | 5x10 <sup>-9</sup> RIU                     |
| Drift                   | <1mV/hour ( Flow rate: pure water 1ml/min) |
| Temp. Control Range     | 35°C ~55°C in 1°C increments               |
| Connection              | RS232 Data output 1Hz, 10Hz                |

### AS600S Autosampler

- PASA™ injection concept
- High-resolution syringe control ensures very high precision for injection and reagent addition
- Internal standard addition, sample dilution or derivatization can be simply programmed
- PC control ensures easy-to-understand operation; context-sensitive online help is available in every window and dialog
- Special design ensures service-friendly
- To enhance safety, operation of the unit will slow down when the door is opened
- Optional sample cooling system ensures consistent results



| Model                           | AS600S                                                                   |
|---------------------------------|--------------------------------------------------------------------------|
| Injection Range                 | 1µl-5000ul in 1µl increments                                             |
| Injection Precision (>10uL RSD) | Full loop:0.3%;Partial loop: 0.5%;µL pickup: 1.0%                        |
| Sample Capacity                 | 2 well plates of 96 or 384 wells<br>96 vials (1.5ml) or 24 vials (10 ml) |
| Cycle time                      | <1 min                                                                   |
| Dispenser Syringe               | 500µl                                                                    |
| Loop Volume                     | 100µl                                                                    |
| Optional cooling                | 4°C                                                                      |
| Needle Wash                     | 1 solvent with 250ml reservoir                                           |



# Workstation

## Column Oven

- Precisely and steadily control the work temperature of chromatograph column
- Enhance the chromatograph effect and sensitivity
- Improve the separation of chromatograph column
- Shorten and stabilize the retention time and reduce the back pressure
- Guarantee the sample repeatability
- Support two columns simultaneously
- Easy to install and dismantle

| Model                     | CH-1          |
|---------------------------|---------------|
| Type                      | Vertical type |
| Temperature Control Range | RT~120 °C     |
| Temperature Accuracy      | 0.1 °C        |
| Temperature Control Mode  | PID           |

## FC600 Fraction Collector

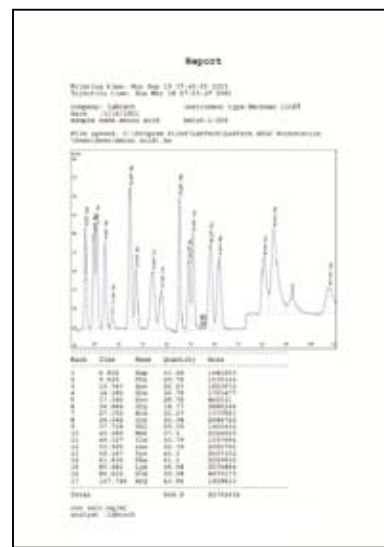
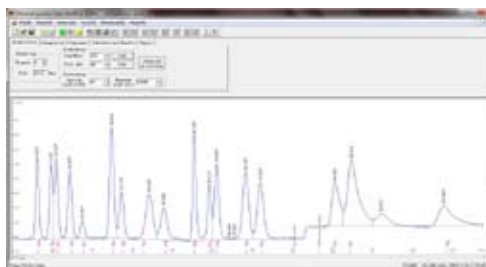
- Automatic sample collection, tube cleaning
- Variable racks and vessels
- Programmable control of any collection position
- Fractionation can be collected into different vessels according to time, peak, voltage or combination of them
- Solvent recycle function
- Auto switch to waste liquid state when power off
- Standard rack 50mlx36 position
- Racks for option: 100mlx16position, 12mlx100position, 5mlx169position



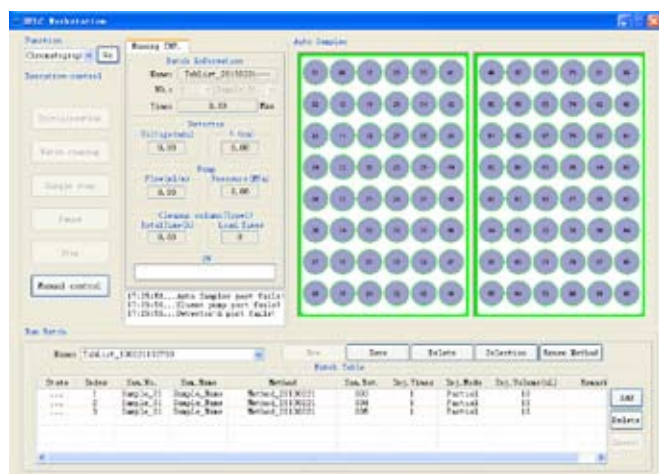
## Chromatography Workstation

- Convenient counter-control function, easily control the pump and detector
- Signal is digitally acquired, no error from analog signal

- Powerful data processing capability, various complicated arithmetic are easily operated, such as grouping, multi-internal standard, multi-point calibration of internal standard variety, exponent and subtraction
- Perfect integrated with Office, the data and chromatogram can be directly output to WORD, analysis reports are customized with diagrams and text. The results can be output to Excel for secondary calculation. Quantitative results and remark text can be saved into Access database
- Data are read by CDF format and compliance with AIA standard. Compatible with other companies' chromatography workstations, such as Agilent and Waters

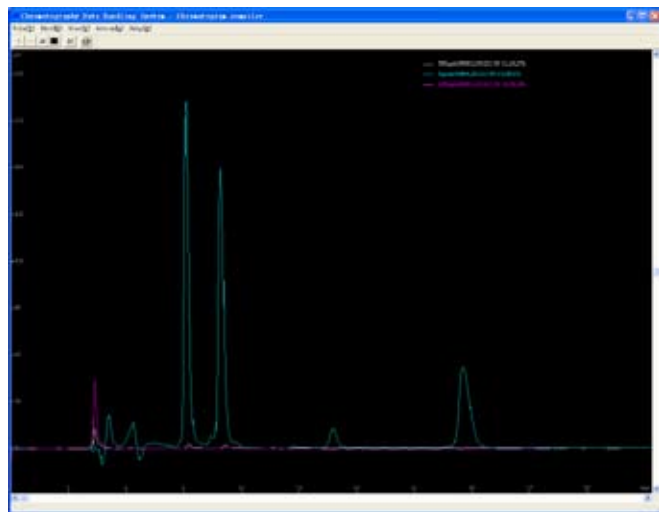


- Set parameters of pump, detector and autosampler
- Set sample load method and location confirmation



- Data export and chromatogram processing

Unique chromatogram identification technique can automatically process peak identification, baseline correction, segmentation of overlapped peaks. In addition, it can add, delete and merge peaks, remove shoulder peaks, and special baseline correction, and also be able to cancel or recover the manual operation on chromatogram treatment.

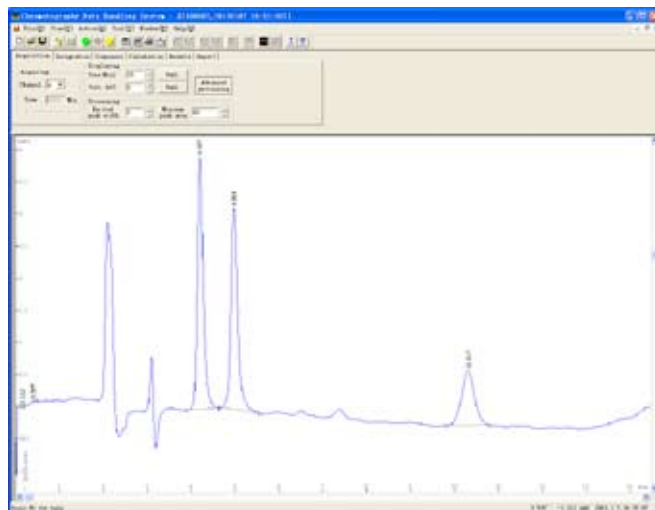


- Mobile phase detection

The consumption of mobile phase can be monitored automatically. It alarms when the residual volume of mobile phase is reduced to the alarm value, and the pump is stopped at the lowest limit.

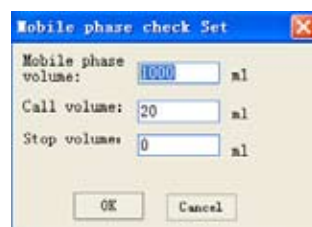
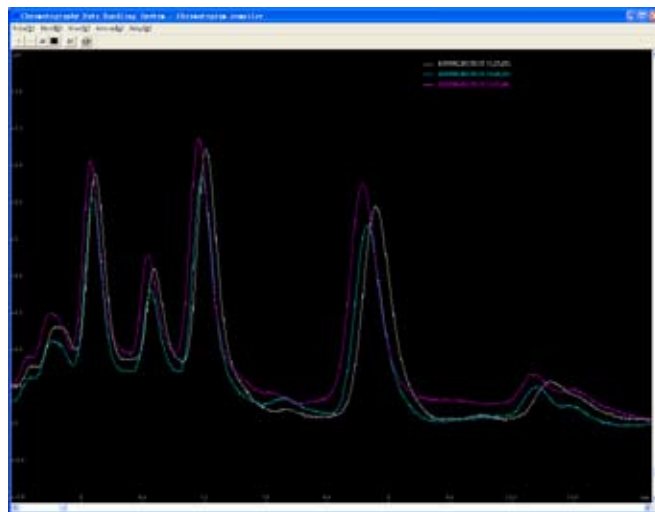
- Data output and quantitative calculation

LC workstation closely integrated with Microsoft Office can create analysis reports directly in Word. Quantitative results (or summary of several quantitative results) can be sent to Excel via clipboard. Analysis records can be saved directly into an Access database.



- Arithmetic program

The arithmetic program in the workstation can overlap different chromatogram simultaneously for convenient observation and analysis



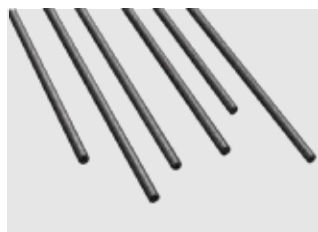
*Always Exceed Your Expectation*

## Column and Accessories

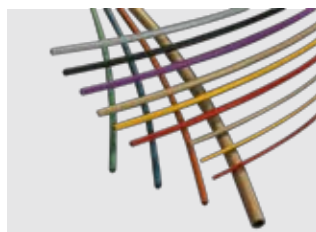
LabTech provides you various accessories with excellent performance and acceptable price.



Columns



Titanium tube



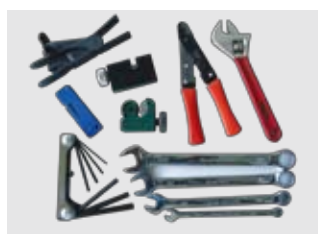
Peek tube



Fittings



Check valve, seal ring and plunger



Various tools



Rheodyne injection valve



Various original Rheodyne SS and PEEK standard tubes



Solvent filter and ultrasonic cleaner



Protection column



SS union



Anti-pressure modulator



On-line filter



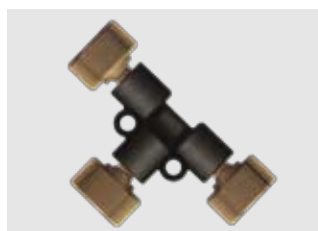
SS tee



SS cross



PEEK union



PEEK tee



PEEK cross