Product Atlas (Product Catalogue)

Preparative Chromatography Systems DAC/M/HPLC/SAC/Gels

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One. Company Overview

Leading with the Quality, Performance and Cost !

We(Gelai_ABDC)are a global technology and marketing team, with continuous efforts for more than 20 years, cooperating seamlessly with all users in research institutions, industry, universities, for their practical demands, and successfully developed DAC M/HPLC systems with independent intellectual properties.

http://www.cdgelai.com/
http://www.chromnet.net/

1. More than>400 large systems installed, with abundant high throughput, high efficiency large-scale DAC-HPLC experiences for more than 13 years.
2. Dedicated optimized Dynamic Axial Compression Column(DAC Column) design, approaching high resolution from the analytical HPLC column.
3. Middle/High pressure Gradient Pump(M/HPLC Pumps) capability, with precision screw module that promises very stable & precise mobile phase output.
4. 1/2 to 2/3 cost, very helpful to optimized budgets controls, especially for cost management for acquiring more equipment.

Through years of unremitting hard work, and relying on the cooperation with scientific research academies such as local military industry as well as colleges and

universities, we have successfully launched a series of products such as:
Static Axial Compression Column(SAC), with diameters from 25.4mm to 100mm,
Dynamic Axial Compression(DAC) Column, from 80mm to 1200mm,
Preparative HPLC/MPLC pumps, from 50ml/min to 30L/min, and
Ultraviolet detector, Fraction Collector, etc.,
with independent intellectual property rights and providing a complete set of Preparative Chromatogram Systems from lab test to large industrial production scales.

With international advanced technologies and leading designs, our products keep at advanced performances among similar products.
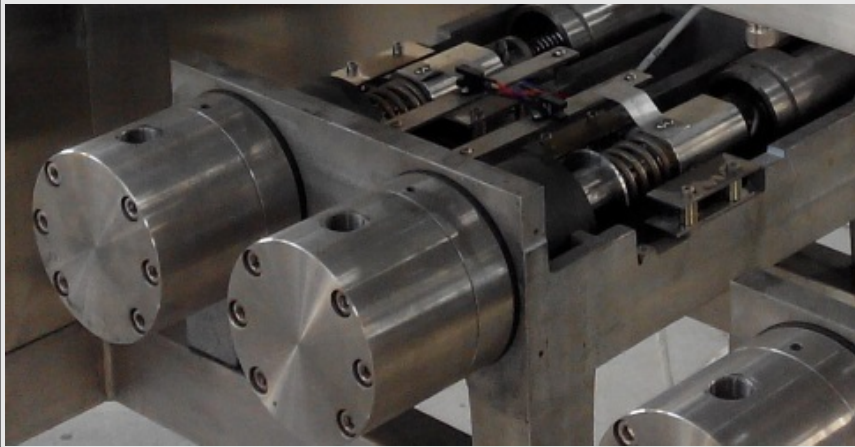
Our products also have already been awarded honor and utility model patents and are widely applied in separation and purification of natural and plant product, synthetic medicine, protein and polypeptide, etc.

We combine the capabilities to keep key technology innovations and to keep our users with cost advantage as much as possible, while persist our product with highest qualities, services, including the compliances of the ISO9001:2000 quality assurance system to take strict testing methods, that guarantee our qualified products with full in line with the standards such as GMP and FDA.

By regular technology trainings, we provide our clients with integrated reliable products and before-sales and after-sales services, ranging from technical consultation, system evaluation, sample testing and separation method development, system installation, onsite operation training, system IQ/OQ validation for certification, process amplification, and to extended application developments.

As a professional manufacturer of Preparative Chromatogram Systems, with the experiences in equipment manufacturing and client support, the Gelai_ABDC provides guarantees to clients in terms of increasing productivities, minimized equipment repair, and quickening investment returns.

We are making prominent global contributions with our constantly providing of excellent preparative chromatogram system, fluid transmission equipment and service.

Two. Product Introduction:

1. Semi-preparative / Preparative Liquid Chromatography system

订货信息：

1-1 GL3000- 50ml系统（推荐配置SAC25.4/41.4）

1-2 GL3000-100ml系统（推荐配置SAC50/77）

1-3 GL3000-250ml系统（推荐配置SAC80/100）
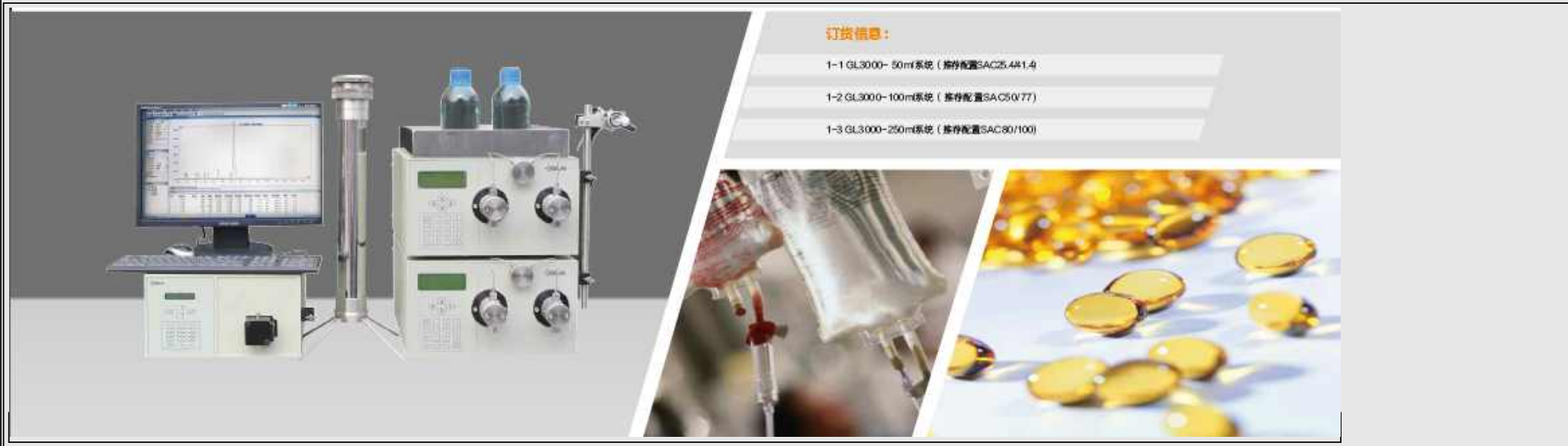
System Overview:

The Semi-prep / preparative liquid chromatography system may be equipped with 50, 100, or 250ml/min maximum flow rates pump head, with mixer, UV detector, online filters, injection valve or sample injection pump, chromatographic work station software, and may be configured with 25.4mm, 41.4mm, 50mm, 77mm, 80mm, 100mm ID pre-packed columns.

The semi-preparative / preparative liquid chromatography systems can be used in normal phase, reverse phase, Ion exchange chromatography and other modes by the selections of different types of packing materials, and are suitable for small-scale purification and separation for milligram to gram sample sizes in the research institutions and laboratories.

They are common for purifications of small amount of standards and standard of impurities.

System parameters:

Hex={FF,D6,97}

		Infusion mode	Screw drive parallel twin piston reciprocating pump, double piston pipette
		Pump Material	316L stainless steel / PEEK / Titanium
	Pump	Maximum operating pressure	6000Psi

	Flow accuracy	± 1%
	Flow repeatability	RSD≤0.5%
Detector	Wavelength	190-740nm
	Cut Off Filter	370nm
	Light source	Deuterium lamp, Halogen tungsten lamp (optional)
	Band width	8nm
	Wavelength precision	±1nm
	Noise	2*10-5AU (254nm@1ml/min @methanol)
	Drift	5*10-5AU/h (254nm@1ml/min @methanol)
	Minimum testing conc.	5*10-9g/ml(254nm@1ml/min@methanol@Naphthalene standard)
	Testing range	0~2.5AU
Columns	Sieve aperture	3-5um
	Column Material	316L stainless steel
	Distributor	Multi-point distribution tech (our patent)
	Inner wall surface finish/roughness	≤0.1µm

1-1. GL3000-50ml system (recommended column: SAC25.4/41.4)

Code	Remarks	Number
GL3000-50-01	GL3000-50ml/min Preparative high pressure pump	2
GL3000-50-02	UV-3292 UV/VIS detector	1
GL3000-50-03	Preparative flow cell	1
GL3000-50-04	Preparative columns GL-ID25.4mm * 450mm	1
GL3000-50-05	Preparative columns GL-ID41.4mm * 450mm (optional)	1

GL3000-50-06	Parts for 3725i-038 manual injection valve	1
GL3000-50-07	10ml Sample loop	1
GL3000-50-08	GL3000-50ml Sample loading pump (optional)	1
GL3000-50-09	Fraction collector(optional, Valve/XY)	
GL3000-50-10	GL3000 chromatography workstation software	1
GL3000-50-11	GL3000-20 on-line filter	1
GL3000-50-12	Tool kit	1
GL3000-50-13	Other	1

1-2. GL3000-100ml system (recommended column: SAC50/77)

Code	Remarks	Number
GL3000-100-01	GL3000-100ml/min Preparative high pressure pump	2
GL3000-100-02	UV-3292 UV/VIS detector	1
GL3000-100-03	Preparative flow cell	1
GL3000-100-04	Preparative columns GL-ID50mm * 450mm	1
GL3000-100-05	Preparative columns GL-ID77mm * 450mm (optional)	1
GL3000-100-06	Parts for 3725i-038 manual injection valve	1
GL3000-100-07	20ml Sample loop	1
GL3000-100-08	GL3000-100ml Sample loading pump (optional)	1
GL3000-100-09	Fraction collector(optional, Valve/XY)	1
GL3000-100-10	GL3000 chromatography workstation software	1
GL3000-100-11	GL3000-20 on-line filter	1
GL3000-100-12	Tool kit	
GL3000-100-13	Other	1

1-2. GL3000-250ml system
(recommended column: SAC80/100)

Code	Remarks	Number
GL3000-250-01	GL3000-250ml/min Preparative high pressure pump	2
GL3000-250-02	UV-3292 UV/VIS detector	1
GL3000-250-03	Preparative flow cell	1
GL3000-250-04	Preparative columns GL-ID80mm * 450mm	1
GL3000-250-05	Preparative columns GL-ID100mm * 450mm (optional)	1
GL3000-250-06	Parts for 3725i-038 manual injection valve	1
GL3000-250-07	20ml Sample loop	1
GL3000-250-08	GL3000-100ml Sample loading pump (optional)	1
GL3000-250-09	Fraction collector(optional, Valve/XY)	1
GL3000-250-10	GL3000 chromatography workstation software	
GL3000-250-11	GL3000-20 on-line filter	1
GL3000-250-12	Tool kit	1
GL3000-250-13	Other	1

Modules introductions:

GL3000- Preparative high pressure pump Features:
(50mL/min, 100mL/min, 250mL/min)

1. Using the latest 32-bit RISC central ultra- high speed computing and 32 bit DSP stepping drive control processors for core control.

2. It is based on all digital frequency-based systems, advanced motor drive system and friendly user display interface, making operation and control of the device more convenient.

3. Dual screw dual piston control, with the pump can be configured to isocratic, gradient mode.

4. High-precision screw drive model with high flow rate precision, good system reproducibility and very low flow pulse features.

5. Advanced pump head and check valve design ideas, a unique blend of the world's most advanced experiences, allowing our users to guarantee the flow rate accuracy and reproducibility specifications in various conditions.

6. When working on the preparative high-pressure gradient mode, the PC/Master module can control more than one pumps of the same type, and can monitor gradient curve gradient method through the PC/Master for verifications.

7. A variety of communication modes, standard RS232, RS485, Ethernet interface, are selectable for the preparative high-pressure pump control, which has greater advantages for high purity sample preparation of requirements.

Technical specifications:

Stream infusion type	Dual piston elution.
Pump head material	316L Stainless Steel/Other options
Maximum operating pressure	50 mL/min pump head: 6000Psi(420 Kgf/cm2, Bar) 100mL/min pump head: 5000psi(350 Kgf/cm2, Bar) 250mL/min pump head: 5000psi(350 Kgf/cm2, Bar)
Flow rate range	50mL/min pump head: 1-50mL/min 100mL/min pump head: 1-100mL/min 250mL/min pump head: 1-250mL/min
Flow rate accuracy	±1%, @1-99% flow rate range & MeOH: H2O (80%: 20)
Flow repeatability	RSD ≤1%
Display	192 × 64 pixels LCD screen
System Protection	Slow start and stop, auto-stop maximum pressure setting, data auto-stored
System Connection	1/4 or 1/8 tubing connections
Control	Multiple communication modes, standard RS232, RS485, Ethernet interface for high-pressure infusion pump control
Power supply	220V ± 10%, 50Hz, 400W
Dimensions	580mm × 360mm × 210mm (Length × Width × Height)
Transmission type	Precision dual-actuators precision ball screw drive that is produced by the HIWIN (Taiwan) with high precision, small pulses, good performance. Our pressure can be displayed in bar that may sense to our very small pressure fluctuations within 2bar.

UV3292 SpectroDetector Features:

1. Adopt all digital output design. After its signal is through 24 bit A/D, the single-chip microcomputer finishes the process of data conversion and zero setting, and the processed result will get the RS 232 interface ·

2. The gratting, directly fixed on the motor shaft of stepping motor, through the procedure of single-chip microcomputer to take sine conversion, can control the motor to choose the wavelength · Replace the traditional sine bar organization, and further improve the reliability and stability of the system; wavelength can be corrected once the system is started ·

3. Programming control to wavelength.

4. Flow-stopped automatic spectral scanning

5. Flow cell has the "Z" style design and is processed by thermostatically processing so that the noise and drift of equipment can be improved to the large extent ·

6. Light path is designed of double light beam so as to further minimize drifting impact from the surrounding change.

7. Optical path can be adjusted through replacing flow cell and changing corresponding system parameters, so it can be transferred from analytical style to semi preparative and even to big preparative style easily.

8. The simulative analog output port is equipped.

9. It can be controlled through RS-232 interface by chromatographic work station.

Technical specifications:

Wavelength range	190~740nm
Edge filter	370nm
Light source	Deuterium lamp, halogen tungsten lamp (optional)
Band width	8nm
Wavelength precision	±1nm
Noise	2*10－5AU (254nm@1ml/min @methanol)
Drift	15*10－5AU/h 254nm@1ml/min @methanol)
Minimum testing concentration	5*10－9g/ml (254nm@1ml/min@methanol@Naphthalene standard)

Testing range	0~2.5AU
Display LCD	2*16 English
GLP information	working time of light source, times of light kindled
Dimension	4600mm*330mm*180mm

Static Axial Compression Column Features:
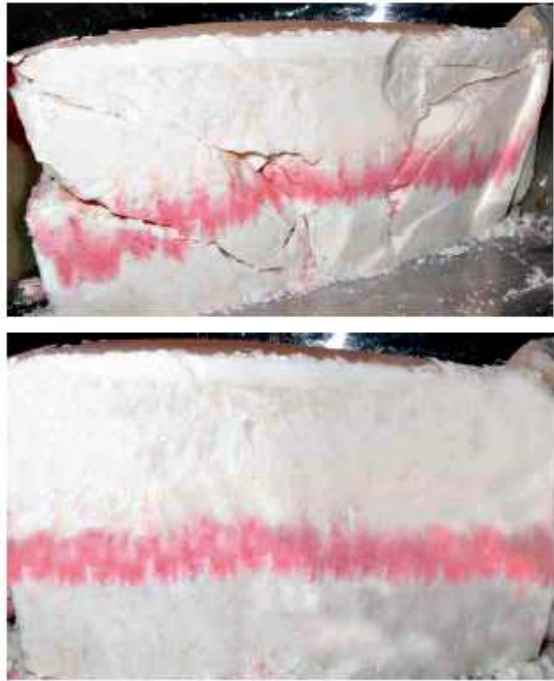## (SAC Column Refillable Prepacked columns)

1. Global leading design and approach for the embedded manual pressing device that performs advanced axial compression functionality.

2. The Surface Finish of our column wall is better than ≥ ▽ 12 (ie, Ra ≤ 0.25μm) that ensuring very good column concentricity(0.2μm), and is better than similar global products. We continuously and routinely cooperate with domestic and global institutions for advanced technologies, such as the concentricity and precision polishing technologies for column inner wall from key military units.
These efforts ensures out excellent product stability and performance.

3. Maintains sufficient high internal pressure that prevent the sharp decline in column efficiency caused by the collapsing of column bed. In long term usages if the column bed have loosed and collapsed, the original column pressure and column efficiency can be restored without any tools by just manually and gently twist on the top pressing device.

4. The column efficiency is high enough to makes it easy to achieve linear amplification from analytical to preparation scales. The unique column-end distribution piece design, have provided more uniform chromatographic process for samples, with more symmetrical peak shapes.

5. With removable and both normal and reverse directions applicable feasibilities that make user re-filling very easy. The durable life time is much longer than other prepared column that are implemented with fixed flange sealing mounting.

NOTE: We can also, according to customer requirements, manufacture customized or specialized columns that are packed with user specified packings from various sources as Kromasil, HyperSil, Fuji, etc. We also provide re-packing and other services for preparative columns provided from customers.

Routine specifications:

1.	ID25.4mm *450mm(1 inch)
2.	ID41.4mm *450mm(2 inch)

3.	ID50mm *450mm	
4.	ID77mm *450mm(3 inch)	
5.	ID80mm *450mm	
6.	ID100mm *450mm	
7.	Customized sizes & packing	

Fraction collector Features:
(Valve 1In-7Out / XY24,48,96 wells)

1. Automatic fraction collector has an all-digital design, whose signal is processed by PLC and then the results will reach the RS232/485 interface.

2. The equipment has programming control, combining with chromatograph can finish the collection easily.

3. The change of every peak is monitored with controlled collections by chromatographic work station.

4. Both Valve-Switching and X-Y Movement types are available. 4. One collection position is open all the time for and the others can be switched freely.

5. Buttons on the front panel are can also be easily manual operated for peak collections.

Technical specifications:

| Channels(Valve type, GL- | |

LF08-Valve)	1 input to 7 output channels
Number of Fractions (X-Y type, GL-LF08-XY):	96, 48, 24 wells
Collection Tube Volumes(X-Y type, GL-LF08-XY)	50mL/96wells, 100mL/48wells, large volumes/24wells
Temperature control	Room temperature, or optional for 2-8 degrees(C)
Fraction Modes	Manual or programmed fraction collection by peak slope, level, and time bands.
Control	PLC programmable control protocol.

GL3000 Preparative Chromatography Workstation software Features:

Chromatographic work station, matched with chromatograph, is the computer system that can process chromatograph signal to be data.
The software focuses on intelligent process for spectrogram data, tries to minimize the process knowledge of spectrogram data which should be mastered by users, and transfers the knowledge to be clear and easy for users to understand, so users will not see those baffling parameters in the chromatographic data processor, (such as "Peak starting slope", "parameter changing time", "baseline drift", etc.)
It has overall professional functions, and when some special processing effect is needed, there are still some simple and convenient adjustment methods.
Meanwhile, this software pursues succinct and compact interface layout, and offers some functions like federated calculation, print by batch, result summarizing, coherent operation, automatic save, and spectrogram management to enhance daily analytical efficiency.
The above aspects mentioned make this software rich in function and convenient in operation.
Another distinguished characteristic of this software is that the close combination with Microsoft office, like how to create analytical report in WORD, quantitative result (or collection of several times' quantitative results) which can be delivered to EXCEL through clipping board, and analytical records which can be saved in ACCESS database directly, etc.
When preparative chromatograph is put to use in production, manual short line and notes can be generated on peak at any time .

2.Pilot scale Preparative Liquid Chromatography system

订货信息:

1-1 GL3000-500m系统（推荐配置DAC100）

1-2 GL3000-1L系统（推荐配置DAC150）

1-3 GL3000-2L系统（推荐配置DAC200）

System Overview:

Based on pilot scales, the system is equipped with suitable module, including GL3000-500ml, GL3000-1L, and GL3000-2L pumps, matched UV detector, mixer, and line filters.

The ID100mm, ID150mm, and ID200mmDAC (Dynamic axial compression column) systems are recommended respectively.

The chromatography workstation is built-in.

The Autosampler, automatic Fraction collector, pumps, system framework and embedded Industrial PC, etc. could be optionally added into integrated configurations.

Suitable for normal phase, reverse phase, ion-exchange In other various chromatographic mode, suitable separation of products from gram to hundreds of grams. .

System parameters:

Hex={FF,D6,97}

Pump	Infusion mode	Screw drive parallel twin piston reciprocating pump, double piston pipette	
	Pump Material	316L stainless steel / PEEK / Titanium	
	Maximum operating pressure	6000Psi	
	Flow accuracy	± 1%	
	Flow repeatability	RSD≤0.5%	
Detector	Wavelength	190-740nm	
	Cut Off Filter	370nm	
	Light source	Deuterium lamp, Halogen tungsten lamp (optional)	
	Band width	8nm	
	Wavelength precision	±1nm	
	Noise	$2*10{-5}$AU (254nm@1ml/min @methanol)	
	Drift	$5*10{-5}$AU/h (254nm@1ml/min @methanol)	
	Minimum testing conc.	$5*10{-9}$g/ml(254nm@1ml/min@methanol@Naphthalene standard)	
	Testing range	0~2.5AU	
Columns	Sieve aperture	3-5um	
	Column Material	316L stainless steel	
	Distributor	Multi-point distribution tech (our patent)	
	Inner wall surface finish/roughness	≤0.1μm	

2-1. GL3000-500ml system
(recommended column: DAC100)

Code	Remarks	Number
GL3000-500-01	GL3000-500ml/min Preparative high pressure pump for mobile phase streams	2
GL3000-500-02	GL3000-500ml/min Preparative high pressure pump for Sample loading or mobile phase streams	1
GL3000-500-03	UV-3292 UV/VIS detector	1
GL3000-500-04	Preparative flow cell	1
GL3000-500-05	Preparative DAC column, ID100mm	1
GL3000-500-06	Dynamic mixer(DT optional)	1
GL3000-500-07	Fraction collector(optional, Valve/XY)	1
GL3000-500-08	Online Filter(optional, GL50)	1
GL3000-500-09	Equipment Framework(optional)	1
GL3000-500-010	Embedded Industrial PC	
GL3000-500-011	GL3000 chromatography workstation software	1
GL3000-500-012	Dedicated Tool kit	1
GL3000-500-013	Installation Startup Kit	1
GL3000-500-014	Others	1

2-2. GL3000-1L system
(recommended column: DAC150)

Code	Remarks	Number
GL3000-1L-01	GL3000-1L/min Preparative high pressure pump for mobile phase streams	2
GL3000-1L-02	GL3000-1Lmin Preparative high pressure pump for Sample loading or mobile phase streams	1
GL3000-1L-03	UV-3292 UV/VIS detector	1
GL3000-1L-04	Preparative flow cell	1
GL3000-1L-05	Preparative DAC column, ID150mm	1

GL3000-1L-06	Dynamic mixer(DT optional)	1
GL3000-1L-07	Fraction collector(optional, Valve/XY)	1
GL3000-1L-08	Online Filter(optional, GL50)	1
GL3000-1L-09	Equipment Framework(optional)	1
GL3000-1L-010	Embedded Industrial PC	1
GL3000-1L-011	GL3000 chromatography workstation software	1
GL3000-1L-012	Dedicated Tool kit	1
GL3000-1L-013	Installation Startup Kit	1
GL3000-1L-014	Others	1

2-3. GL3000-2L system (recommended column: DAC200)

Code	Remarks	Number
GL3000-2L-01	GL3000-2L/min Preparative high pressure pump for mobile phase streams	2
GL3000-2L-02	GL3000-2L/min Preparative high pressure pump for Sample loading or mobile phase streams	1
GL3000-2L-03	UV-3292 UV/VIS detector	1
GL3000-2L-04	Preparative flow cell	1
GL3000-2L-05	Preparative DAC column, ID200mm	1
GL3000-2L-06	Dynamic mixer(DT optional)	1
GL3000-2L-07	Fraction collector(optional, Valve/XY)	1
GL3000-2L-08	Online Filter(optional, GL50)	1
GL3000-2L-09	Equipment Framework(optional)	1
GL3000-2L-010	Embedded Industrial PC	1
GL3000-2L-011	GL3000 chromatography workstation software	1
GL3000-2L-012	Dedicated Tool kit	1
GL3000-2L-013	Installation Startup Kit	1
GL3000-2L-014	Others	1

Modules introductions:

GL3000- Preparative high pressure pump Features:
(500mL/min, 1L/min, 2L/min)

1. Using the latest 32-bit RISC central ultra- high speed computing and 32 bit DSP stepping drive control processors for core control.

2. It is based on all digital frequency-based systems, advanced motor drive system and friendly user display interface, making operation and control of the device more convenient.

3. Dual screw dual piston control, with the pump can be configured to isocratic, gradient mode.

4. High-precision screw drive model with high flow rate precision, good system reproducibility and very low flow pulse features.

5. Advanced pump head and check valve design ideas, a unique blend of the world's most advanced experiences, allowing our users to guarantee the flow rate accuracy and reproducibility specifications in various conditions.

6. When working on the preparative high-pressure gradient mode, the PC/Master module can control more than one pumps of the same type, and can monitor gradient curve gradient method through the PC/Master for verifications.

7. A variety of communication modes, standard RS232, RS485, Ethernet interface, are selectable for the preparative high-pressure pump control, which has greater advantages for high purity sample preparation of requirements.

Technical specifications:

Stream infusion type	Dual piston elution.
Pump head material	316L Stainless Steel/Other options
Maximum operating pressure	500 mL/min pump head: 3000Psi(210 Kgf/cm2, Bar) 1L/min pump head: 2000psi(140 Kgf/cm2, Bar) 2L/min pump head: 1500psi(105 Kgf/cm2, Bar)
Flow rate range	500mL/min pump head: 1-500mL/min 1L/min pump head: 0-1Lmin 2L/min pump head: 0-2Lmin
Flow rate accuracy	±1%, @1-99% flow rate range & MeOH: H2O (80%: 20)
Flow repeatability	RSD ≤1%
Display	192 × 64 pixels LCD screen
System Protection	Slow start and stop, auto-stop maximum pressure setting, data auto-stored
System Connection	1/4 or 1/8 tubing connections
	Multiple communication modes, standard RS232, RS485, Ethernet interface for high-pressure infusion pump

Control	control
Power supply	220V ± 10%, 50Hz, 400W
Dimensions	580mm × 360mm × 210mm (Length × Width × Height)
Transmission type	Precision dual-actuators precision ball screw drive that is produced by the HIWIN (Taiwan) with high precision, small pulses, good performance. Our pressure can be displayed in bar that may sense to our very small pressure fluctuations within 2bar.

UV3292 SpectroDetector Features:

1. Adopt all digital output design. After its signal is through 24 bit A/D, the single-chip microcomputer finishes the process of data conversion and zero setting, and the processed result will get the RS 232 interface ·

2. The gratting, directly fixed on the motor shaft of stepping motor, through the procedure of single-chip microcomputer to take sine conversion, can control the motor to choose the wavelength · Replace the traditional sine bar organization, and further improve the reliability and stability of the system; wavelength can be corrected once the system is started ·

3. Programming control to wavelength.

4. Flow-stopped automatic spectral scanning

5. Flow cell has the "Z" style design and is processed by thermostatically processing so that the noise and drift of equipment can be improved to the large extent ·

6. Light path is designed of double light beam so as to further minimize drifting impact from the surrounding change.

7. Optical path can be adjusted through replacing flow cell and changing corresponding system parameters, so it can be transferred from analytical style to semi preparative and even to big preparative style easily.

8. The simulative analog output port is equipped.

9. It can be controlled through RS-232 interface by chromatographic work station.

Technical specifications:

Wavelength range	190~740nm
Edge filter	370nm
Light source	Deuterium lamp, halogen tungsten lamp (optional)

Band width	8nm
Wavelength precision	±1nm
Noise	2*10－5AU (254nm@1ml/min @methanol)
Drift	15*10－5AU/h 254nm@1ml/min @methanol)
Minimum testing concentration	5*10－9g/ml (254nm@1ml/min@methanol@Naphthalene standard)
Testing range	0~2.5AU
Display LCD	2*16 English
GLP information	working time of light source, times of light kindled
Dimension	4600mm*330mm*180mm

Dynamic Axial Compression Column Features:
(DAC Column)

The DAC Summary:

It is the only one technology that is universally recognizedto be able to maintain good separation effect under various column chromatography scales, and it is also the best column packing technology in the preparative chromatographic field,

The advanced DAC(Dynamic axial compression column) have its own functions, as self-packing, column pressure maintain, and self-release-packing.

The DAC packed column bed fully meets the continuity, uniformity, stability, and tightness requirements.

The mechanism of DAC column is through the up and down movement of the piston to pack, maintain column pressure and release packing.

The piston surrounding is equipped with a specially designed seal rings that allow the piston to freely slide up and down, while maintaining high sealing pressure . Piston motion and pressure is maintained by the uniform and stable hydraulic pressure.

The separation effects of DAC columns with various diameters approach or even equivalent to the analytical column.

Performance & Features:

1	Adopt advanced structure design, flexible and convenient operation, small volume and good appearance.
2	The packing material filling process is easy to learn, the packing time is short, with low supported compressed air requirement, that just 6kg air pressure is sufficient for up to 90 kg packing pressure within the column. The column performance is nearly close to that of analytical column.
3	DAC tech can pressurize the chromatographic column bed constantly, and effectively avoid the collapse of column head and loose column bed.
4	Pressure endurance, Adhesiveness: the inner surface finish of ≥ ▽ 12, namely, the surface roughness ≤0.25μm; concentricity between column head and cylinder reaches 0.2um, column head sealing is made of imported oblique seals spring seals, that make the column with high pressure endurance to 6000psi without leakage and 50 times of refilling without wear.
5	The distribution uniformity and reproducibility: column head, column bottom are equipped with multi-point distribution technology components(our patent), that will enable product solution and mobile phase to uniformly flush through the column cylinder, with good peak symmetry. 6 · Long service time. Once chromatographic column is polluted, to discharg packing and then re-packing is very easy and convenient. Pepeatly re-

6	Long service time. Once chromatographic column is polluted, to discharg packing and then re-packing is very easy and convenient. Pepeatly re-packing is also possible, which largely prolongs the service life of chromatographic column.
7	The same packing system supports the filling of various specifications of columns whose inner diameter are less than or equal to those of DAC dynamic axial compression columns ·
8	The packed chromatographic column can be separated from packing system and be used independently. Moreover, the stability of column bed and original column performance can also be kept, and it is convenient to move to use ·
9	Adopt overpressure protection to guarantee the users' safety completely. 10 · Sales price is only one third of or even lower than the similar imported products ·
10	Sales price is only one third of or even lower than the similar imported products

Fraction collector Features:
(Valve 1In-7Out / XY24,48,96 wells)

1. Automatic fraction collector has an all-digital design, whose signal is processed by PLC and then the results will reach the RS232/485 interface.

2. The equipment has programming control, combining with chromatograph can finish the collection easily.

3. The change of every peak is monitored with controlled collections by chromatographic work station.

4. Both Valve-Switching and X-Y Movement types are available. 4. One collection position is open all the time for and the others can be switched freely.

5. Buttons on the front panel are can also be easily manual operated for peak collections.

Technical specifications:

Channels(Valve type, GL-LF08-Valve)	1 input to 7 output channels
Number of Fractions (X-Y type, GL-LF08-XY):	96, 48, 24 wells
Collection Tube Volumes(X-Y type, GL-LF08-XY)	50mL/96wells, 100mL/48wells, large volumes/24wells
Temperature control	Room temperature, or optional for 2-8 degrees(C)
Fraction Modes	Manual or programmed fraction collection by peak slope, level, and time bands.
Control	PLC programmable control protocol.

GL3000 Preparative Chromatography Workstation software Features:

Chromatographic work station, matched with chromatograph, is the computer system that can process chromatograph signal to be data.

The software focuses on intelligent process for spectrogram data, tries to minimize the process knowledge of spectrogram data which should be mastered by users, and transfers the knowledge to be clear and easy for users to understand, so users will not see those baffling parameters in the chromatographic data processor, (such as "Peak starting slope", "parameter changing time", "baseline drift", etc.)

It has overall professional functions, and when some special processing effect is needed, there are still some simple and convenient adjustment methods.

Meanwhile, this software pursues succinct and compact interface layout, and offers some functions like federated calculation, print by batch, result summarizing, coherent operation, automatic save, and spectrogram management to enhance daily analytical efficiency.

The above aspects mentioned make this software rich in function and convenient in operation.

Another distinguished characteristic of this software is that the close combination with Microsoft office, like how to create analytical report in WORD, quantitative result (or collection of several times' quantitative results) which can be delivered to EXCEL through clipping board, and analytical records which can be saved in ACCESS database directly, etc.

When preparative chromatograph is put to use in production, manual short line and notes can be generated on peak at any time .

3.The Industrial-scale Preparative Liquid Chromatography system.

订购信息：

1-1 GL3000-3L 系统（推荐配置DAC300）

1-2 GL3000-5L系统（推荐配置DAC450）

1-3GL3000-10L系统（推荐配置DAC600）

1-4GL3000-20L系统（推荐配置DAC800）

1-5 GL3000-30L系统（推荐配置DAC1000）

System Overview:

In accordance with the scale of industrial production, the system is equipped with GL3000-3L, GL3000-5L, GL3000-10L, GL3000-20L, or GL3000-30L pump, and UV detector, on-line mixer, on-line filters and chromatography workstation.

Recommended with ID300mm, ID450mm, ID600mm, ID800mm, or ID1000mm DAC dynamic axial compression column systems.

In addition, this system is also have options, as pump for automatic sample loading, automatic fraction collector, integrated platform (Industrial PC) and other configurations.

And is suitable for all kinds of chromatography model including normal phase, reverse-phase, ion exchange, etc.

It is suitable for hundreds of grams and kilograms grade product separations.

3-1. GL3000-3L system
(recommended column: DAC300)

Code	Remarks	Number
GL3000-3L-01	GL3000-3L/min Preparative high pressure pump for mobile phase streams	2
GL3000-3L-02	GL3000-3Lmin Preparative high pressure pump for Sample loading or mobile phase streams	1
GL3000-3L-03	UV-3292 UV/VIS detector	1
GL3000-3L-04	Preparative flow cell	1
GL3000-3L-05	Preparative DAC column, ID300mm	1
GL3000-3L-06	Dynamic mixer(DT optional)	1
GL3000-3L-07	Fraction collector(optional, Valve/XY)	1
GL3000-3L-08	Online Filter(optional, GL100)	1
GL3000-3L-09	Equipment Framework(optional)	1
GL3000-3L-010	Embedded Industrial PC	1
GL3000-3L-011	GL3000 chromatography workstation software	1
GL3000-3L-012	Dedicated Tool kit	1
GL3000-3L-013	Installation Startup Kit	1
GL3000-3L-014	Others	1

3-2. GL3000-5L system
(recommended column: DAC450)

Code	Remarks	Number
GL3000-5L-01	GL3000-5L/min Preparative high pressure pump for mobile phase streams	2
GL3000-5L-02	GL3000-5L/min Preparative high pressure pump for Sample loading or mobile phase streams	1
GL3000-5L-03	UV-3292 UV/VIS detector	1
GL3000-5L-04	Preparative flow cell	1
GL3000-5L-05	Preparative DAC column, ID450mm	1
GL3000-5L-06	Dynamic mixer(DT optional)	1
GL3000-5L-07	Fraction collector(optional, Valve/XY)	1
GL3000-5L-08	Online Filter(optional, GL100)	1
GL3000-5L-09	Equipment Framework(optional)	1
GL3000-5L-010	Embedded Industrial PCembedded Industrial PC	1
GL3000-5L-011	GL3000 chromatography workstation software	1
GL3000-L-012	Dedicated Tool kit	1
GL3000-L-013	Installation Startup Kit	1
GL3000-5L-014	Others	1

3-3. GL3000-10L system (recommended column: DAC600)

Code	Remarks	Number
GL3000-10L-01	GL3000-10L/min Preparative high pressure pump for mobile phase streams	2
GL3000-10L-02	GL3000-10Lmin Preparative high pressure pump for Sample loading or mobile phase streams	1
GL3000-10L-03	UV-3292 UV/VIS detector	1
GL3000-10L-04	Preparative flow cell	1
GL3000-10L-05	Preparative DAC column, ID600mm	1
GL3000-10L-06	Dynamic mixer(DT optional)	1
GL3000-10L-07	Fraction collector(optional, Valve/XY)	1
GL3000-10L-08	Online Filter(optional, GL100)	1
GL3000-10L-09	Equipment Framework(optional)	1
GL3000-10L-010	Embedded Industrial PC	1
GL3000-10L-011	GL3000 chromatography workstation software	1
GL3000-10L-012	Dedicated Tool kit	1
GL3000-10L-013	Installation Startup Kit	1
GL3000-10L-014	Others	1

3-4. GL3000-20L system
(recommended column: DAC800)

Code	Remarks	Number
GL3000-20L-01	GL3000-20L/min Preparative high pressure pump for mobile phase streams	2
GL3000-20L-02	GL3000-20L/min Preparative high pressure pump for Sample loading or mobile phase streams	1
GL3000-20L-03	UV-3292 UV/VIS detector	1
GL3000-20L-04	Preparative flow cell	1
GL3000-20L-05	Preparative DAC column, ID800mm	1
GL3000-20L-06	Dynamic mixer(DT optional)	1
GL3000-20L-07	Fraction collector(optional, Valve/XY)	1
GL3000-20L-08	Online Filter(optional, GL100)	1
GL3000-20L-09	Equipment Framework(optional)	1
GL3000-20L-010	embedded Industrial PCembedded Industrial PC	1
GL3000-20L-011	GL3000 chromatography workstation software	1
GL3000-20L-012	Dedicated Tool kit	1
GL3000-20L-013	Installation Startup Kit	1
GL3000-20L-014	Others	1

Modules introductions:

GL3000- Preparative high pressure pump Features:
(3L/min, 5L/min, 10L/min, 20L/min, 30L/min)

1. Using the latest 32-bit RISC central ultra- high speed computing and 32 bit DSP stepping drive control processors for core control.

2. It is based on all digital frequency-based systems, advanced motor drive system and friendly user display interface, making operation and control of the device more convenient.

3. Dual screw dual piston control, with the pump can be configured to isocratic, gradient mode.

4. High-precision screw drive model with high flow rate precision, good system reproducibility and very low flow pulse features.

5. Advanced pump head and check valve design ideas, a unique blend of the world's most advanced experiences, allowing our users to guarantee the flow rate accuracy and reproducibility specifications in various conditions.

6. When working on the preparative high-pressure gradient mode, the PC/Master module can control more than one pumps of the same type, and can monitor gradient curve gradient method through the PC/Master for verifications.

7. A variety of communication modes, standard RS232, RS485, Ethernet interface, are selectable for the preparative high-pressure pump control, which has greater advantages for high purity sample preparation of requirements.

Technical specifications:

Stream infusion type	Dual piston elution.
Pump head material	316L Stainless Steel/Other options
Maximum operating pressure	3L/min pump head: 1500psi(105 Kgf/cm2, Bar) 5L/min pump head: 1500psi(105 kgf/cm2, Bar) 10L/min pump head: 1500psi(105 Kgf/cm2, Bar) 20L/min pump head: 1500psi(105 Kgf/cm2, Bar) 30L/min pump head: 1500psi(105 Kgf/cm2, Bar)
Flow rate range	3L/min pump head: 0-3Lmin 5L/min pump head: 0-5Lmin 10L/min pump head: 0-10Lmin 20L/min pump head: 0-20Lmin 30L/min pump head: 0-30Lmin
Flow rate accuracy	±1%, @1-99% flow rate range & MeOH: H2O (80%: 20)
Flow repeatability	RSD ≤1%
Display	192 × 64 pixels LCD screen

System Protection	Slow start and stop, auto-stop maximum pressure setting, data auto-stored
System Connection	1/2 or 3/8 tubing connections
Control	Multiple communication modes, standard RS232, RS485, Ethernet interface for high-pressure infusion pump control
Power supply	220V ± 10%, 50Hz, 1200W
Dimensions	650mm × 460mm × 300mm (Length × Width × Height)
Transmission type	Precision dual-actuators precision ball screw drive that is produced by the HIWIN (Taiwan) with high precision, small pulses, good performance. Our pressure can be displayed in bar that may sense to our very small pressure fluctuations within 2bar.

UV3292 SpectroDetector Features:

1. Adopt all digital output design. After its signal is through 24 bit A/D, the single-chip microcomputer finishes the process of data conversion and zero setting, and the processed result will get the RS 232 interface ·

2. The gratting, directly fixed on the motor shaft of stepping motor, through the procedure of single-chip microcomputer to take sine conversion, can control the motor to choose the wavelength · Replace the traditional sine bar organization, and further improve the reliability and stability of the system; wavelength can be corrected once the system is started ·

3. Programming control to wavelength.

4. Flow-stopped automatic spectral scanning

5. Flow cell has the "Z" style design and is processed by thermostatically processing so that the noise and drift of equipment can be improved to the large extent ·

6. Light path is designed of double light beam so as to further minimize drifting impact from the surrounding change.

7. Optical path can be adjusted through replacing flow cell and changing corresponding system parameters, so it can be transferred from analytical style to semi preparative and even to big preparative style easily.

8. The simulative analog output port is equipped.

9. It can be controlled through RS-232 interface by chromatographic work station.

Technical specifications:

Wavelength range	190~740nm
Edge filter	370nm

Light source	Deuterium lamp, halogen tungsten lamp (optional)
Band width	8nm
Wavelength precision	±1nm
Noise	2*10－5AU (254nm@1ml/min @methanol)
Drift	15*10－5AU/h 254nm@1ml/min @methanol)
Minimum testing concentration	5*10－9g/ml (254nm@1ml/min@methanol@Naphthalene standard)
Testing range	0~2.5AU
Display LCD	2*16 English
GLP information	working time of light source, times of light kindled
Dimension	4600mm*330mm*180mm

Dynamic Axial Compression Column Features: (DAC Column)

DAC300mm   DAC450mm   DAC600mm   DAC800mm

The DAC Summary:

It is the only one technology that is universally recognizedto be able to maintain good separation effect under various column chromatography scales, and it is also the best column packing technology in the preparative chromatographic field,

The advanced DAC(Dynamic axial compression column) have its own functions, as self-packing, column pressure maintain, and self-release-packing.

The DAC packed column bed fully meets the continuity, uniformity, stability, and tightness requirements.

The mechanism of DAC column is through the up and down movement of the piston to pack, maintain column pressure and release packing.

The piston surrounding is equipped with a specially designed seal rings that allow the piston to freely slide up and down, while maintaining high sealing pressure . Piston motion and pressure is maintained by the uniform and stable hydraulic pressure.

The separation effects of DAC columns with various diameters approach or even equivalent to the analytical column.

Performance & Features:

1	Adopt advanced structure design, flexible and convenient operation, small volume and good appearance.
2	The packing material filling process is easy to learn, the packing time is short, with low supported compressed air requirement, that just 6kg air pressure is sufficient for up to 90 kg packing pressure within the column. The column performance is nearly close to that of analytical column.
3	DAC tech can pressurize the chromatographic column bed constantly, and effectively avoid the collapse of column head and loose column bed.
4	Pressure endurance, Adhesiveness: the inner surface finish of ≥ ▽ 12, namely, the surface roughness ≤0.25μm; concentricity between column head and cylinder reaches 0.2um, column head sealing is made of imported oblique seals spring seals, that make the column with high pressure endurance to 6000psi without leakage and 50 times of refilling without wear.
5	The distribution uniformity and reproducibility: column head, column bottom are equipped with multi-point distribution technology components(our patent), that will enable product solution and mobile phase to uniformly flush through the column cylinder, with good peak symmetry. 6 · Long service time. Once chromatographic column is polluted, to discharg packing and then re-packing is very easy and convenient. Pepeatly re-packing is also possible, which largely prolongs the service life of chromatographic column ·
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7	The same packing system supports the filling of various specifications of columns whose inner diameter are less than or equal to those of DAC dynamic axial compression columns ·
8	The packed chromatographic column can be separated from packing system and be used independently. Moreover, the stability of column bed and original column performance can also be kept, and it is convenient to move to use ·
9	Adopt overpressure protection to guarantee the users' safety completely. 10 · Sales price is only one third of or even lower than the similar imported products ·
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Fraction collector Features:
(Valve 1In-7Out / XY24,48,96 wells)

1. Automatic fraction collector has an all-digital design, whose signal is processed by PLC and then the results will reach the RS232/485 interface.

2. The equipment has programming control, combining with chromatograph can finish the collection easily.

3. The change of every peak is monitored with controlled collections by chromatographic work station.

4. Both Valve-Switching and X-Y Movement types are available. 4. One collection position is open all the time for and the others can be switched freely.

5. Buttons on the front panel are can also be easily manual operated for peak collections.

Technical specifications:

Channels(Valve type, GL-LF08-Valve)	1 input to 7 output channels
Number of Fractions (X-Y type, GL-LF08-XY):	96, 48, 24 wells
Collection Tube Volumes(X-Y type, GL-LF08-XY)	50mL/96wells, 100mL/48wells, large volumes/24wells
Temperature control	Room temperature, or optional for 2-8 degrees(C)
Fraction Modes	Manual or programmed fraction collection by peak slope, level, and time bands.
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GL3000 Preparative Chromatography Workstation software Features:

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It has overall professional functions, and when some special processing effect is needed, there are still some simple and convenient adjustment methods.
Meanwhile, this software pursues succinct and compact interface layout, and offers some functions like federated calculation, print by batch, result summarizing, coherent operation, automatic save, and spectrogram management to enhance daily analytical efficiency.
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When preparative chromatograph is put to use in production, manual short line and notes can be generated on peak at any time .

3-2. GL3000-5L system (DAC450)

3-2. GL3000-20L system (DAC800)

4.Common spare and service parts

High pressure column seal ring				Column filter		
Part No.	Description	Quantity		Part No.	Description	Quantity
GLO-ZM-001	25·4mm	1		GL-ZG-001	25.4mm	1
GLO-ZM-002	41.4mm	1		GL-ZG-002	41.4mm	1
GLO-ZM-003	50mm	1		GL-ZG-003	77mm	1
GLO-ZM-004	77mm	1		GL-ZG-004	100mm	1

Part No.	Description	Quantity		Part No.	Description	Quantity
GLO-ZM-005	80mm	1		GL-ZG-005	150mm	1
GLO-ZM-006	100mm	1		GL-ZG-006	200mm	1
GLO-ZM-007	150mm	1		GL-ZG-007	450mm	1
GLO-ZM-008	200mm	1		GL-ZG-008	600mm	1
GLO-ZM-009	400mm	1		GL-ZG-009	800mm	1
GLO-ZM-010	600mm	1		GL-ZG-010	1000mm	1
GLO-ZM-011	800mm	1				
GLO-ZM-012	1200mm	1				

High pressure pump seal ring / **Pump check valve**

Part No.	Description	Quantity		Part No.	Description	Quantity
GL-GM-001	50mL	1		GL-BD-001	50mL	1
GL-GM-002	100mL	1		GL-BD-002	100mL	1
GL-GM-003	250mL	1		GL-BD-003	250mL	1
GL-GM-004	500mL	1		GL-BD-004	500mL	1
GL-GM-005	1L	1		GL-BD-005	1L	1
GL-GM-006	2L	1		GL-BD-006	2L	1
GL-GM-007	3L	1		GL-BD-007	3L	1
GL-GM-008	5L	1		GL-BD-008	5L	1
GL-GM-009	10L	1		GL-BD-009	10L	1
GL-GM-010	20L	1		GL-BD-010	20L	1
GL-GM-011	30L	1		GL-BD-011	30L	1

Low pressure pump seal ring

Part No.	Description	Quantity		Part No.	Description	Quantity
GL-DM-001	50mL	1		GL-DZ-001	50mL	1
GL-DM-002	100mL	1		GL-DZ-002	100mL	1
GL-DM-003	250mL	1		GL-DZ-003	250mL	1
GL-DM-004	500mL	1		GL-DZ-004	500mL	1
GL-DM-005	1L	1		GL-DZ-005	1L	1
GL-DM-006	2L	1		GL-DZ-006	2L	1
GL-DM-007	3L	1		GL-DZ-007	3L	1
GL-DM-008	5L	1		GL-DZ-008	5L	1
GL-DM-009	10L	1		GL-DZ-009	10L	1
GL-DM-010	20L	1		GL-DZ-010	20L	1
GL-DM-011	30L	1		GL-DZ-011	30L	1

Manual injection valve

Deuterium lamp

Part No.	Description	Quantity		Part No.	Description	Quantity
GLP-JY-001	Parts for 3725i-038/Rheodyne manual injection valve			GLP-DA-001	Deuterium lamp	

Quantitative sample loop

Flow cell

Part No.	Description	Quantity		Part No.		Quantity
GP-DL-001	2mL	1		GL-LT-001	Semi preparative flow cell	1
GP-DL-002	5mL	1		GL-ZL-002	Preparative flow cell	1
GP-DL-003	10mL	1				
GP-DL-004	20mL	1				

Plunger rod				Stainless steel tubing		

Part No.	Description	Quantity		Part No.	Description	Quantity
GL-ZS-001	50mL	1		GL-BX-001	316L 1/16"	1
GL-ZS-002	100mL	1		GL-BX-002	316L 1/8"	1
GL-ZS-003	250mL	1		GL-BX-003	316L 1/4"	1
GL-ZS-004	500mL	1				
GL-ZS-005	1L	1		Peek connector		
GL-ZS-006	2L	1				
GL-ZS-007	3L	1		Part No.	Description	Quantity
GL-ZS-008	5L	1		GL-JT-001	316L 1/16"	1

Part No.	Description	Quantity		Part No.	Description	Quantity
GL-ZS-009	10L	1		GL-JT-002	316L 1/8"	1
GL-ZS-010	20L	1		GL-JT-003	316L 1/4"	1
GL-ZS-011	30L	1				
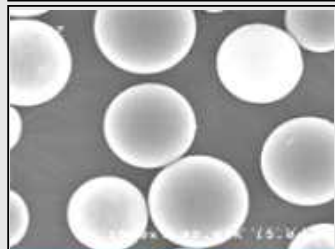
Packing Materials				Reagents		
Part No.	Description	Quantity		Part No.	**Description**	Quantity
YMC, Calesil, Fuji, and global major brands, ...				by orders.		

Three. Sample separation service

We set up a customer product separation center, with a Chromatography team with a number of application engineers, experienced in the API, Chinese medicine monomer, peptide drugs, etc. and dedicated for our customer services for more than 12 years.
We provide fast separation and purification solutions and products purification and service for you.
We offer a variety cooperation modes to reduce the risk and cost of your product research and development process.

1,2-Dehydromiltirone
formula	$C_{19}H_{22}O_2$
Molweight	282.38
Cas number	119665-79-9
Chemical name	1,2-Dehydromiltirone
Synonym name	1,3,13,15-Abietapentaene-11,12-dione
Chinese name	去氢丹参新酮
Chinese synonym name	
Purity	90%~98% by HPLC-UV or/and HPLC-ELSD
Botanical source	roots of Salvia miltiorrhiza
Catalog_no	BP0002

1,3,5,8-Tetrahydroxyxanthone
formula	$C_{13}H_8O_6$
Molweight	260.198
Cas number	2980-32-7
Chemical name	1,3,5,8-Tetrahydroxyxanthone
Synonym name	Bellidin, Desmethylbellidifolin
Chinese name	1,3,5,8-四羟基酮
Chinese synonym name	
Purity	90%~98% by HPLC-UV or/and HPLC-ELSD
Botanical source	Desmos bellidifolia and of Swertia spp.
Catalog_no	BP0003

1,3,6-Tri-O-galloyl-beta-D-glucose
formula	$C_{27}H_{24}O_{18}$
Molweight	636.468
Cas number	18483-17-5
Chemical name	1,3,6-Tri-O-galloyl-beta-D-glucose
Synonym name	1,3,6-Tri-O-galloyl-beta-D-glucopyranoside
Chinese name	1,3,6-三-O-没食子酰葡萄糖
Chinese synonym name	
Purity	90%~98% by HPLC-UV or/and HPLC-ELSD
Botanical source	the fruit of Terminalia chebula Catalog_no
	BP0004

1,3-Dicaffeoylquinic acid
formula	$C_{25}H_{24}O_{12}$
Molweight	516.451
Cas number	19870-46-3
Chemical name	1,3-Dicaffeoylquinic acid
Synonym name	Cynarin, Cynarine Cinarina
name	1,3-二咖啡酰奎宁酸
Chinese synonym name	洋蓟素，洋蓟酸
Purity	90%~98% by HPLC-UV or/and HPLC-ELSD
Botanical source	globe artichoke (Cynara scolymus), spinach (Verbascum, spinach), Cassava shrub/berry (Ardisia) at
Catalog_no	BP0005

1,5-Dicaffeoylquinic acid
|	
formula	$C_{25}H_{24}O_{12}$
Molweight	516.451
Cas number	30964-13-7
Chemical name	1,5-Dicaffeoylquinic acid
Synonym name	Cynarin

Four. Customer Examples

After more than 12 years of unremitting efforts, we have more than 400 large high-precision and high-performance systems installed in China (with total market share > 1/3), and USA. With more than major 150 customers, including the well-known pharmaceutical companies and research institutions, we have acquired customer recognition and praise in the chromatography industry field.
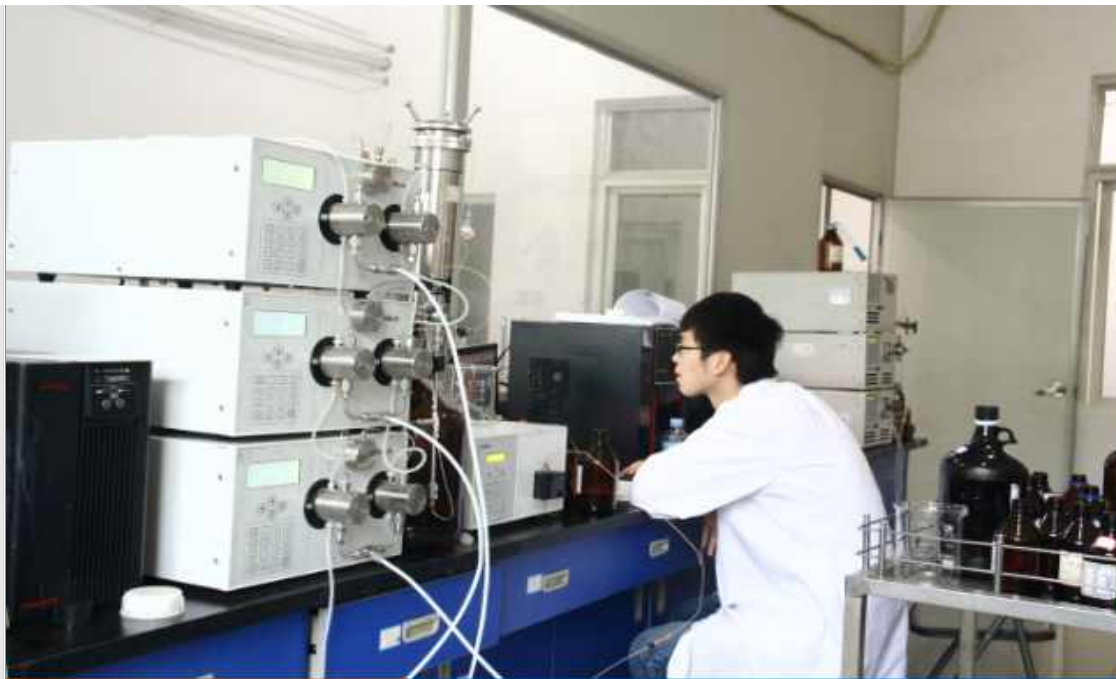
A research center of new drugs

A FDA-approved APIs workshop

A FDA-approved API factory

A company chemical plant

GELAI

ABDC
Products Atlas