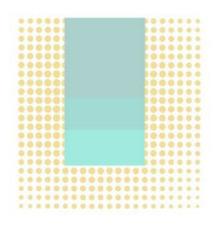


# PRODUCT Brochure







Professional Solutions For Your Laboratory's Needs

### We are Biovanix Technology

**Biovanix Technology Co., Ltd.** is located in the picturesque and economically vibrant city of Wuxi, Jiangsu Province. We are a high-tech enterprise dedicated to the field of biotechnology, specializing in the supply of high-quality liquid chromatography equipment and accessories. Driven by innovation and centered on service, we are committed to excellence and providing comprehensive solutions from the laboratory to the production line.

Our team at **Biovanix** consists of industry experts and technical elites who, with their profound professional knowledge and rich industry experience, continuously research and optimize our products. Our liquid chromatography equipment is recognized for its performance, stability, and precision, meeting international standards. Our products are widely used in pharmaceuticals, biotechnology, food testing, environmental monitoring, and other fields, earning the favor of customers worldwide.

Adhering to the business philosophy of "Quality First, Customer Supreme," **Biovanix Technology Co., Ltd.** is committed to becoming a leader in the field of biotechnology. We believe that through continuous technological innovation and outstanding customer service, we will grow together with our customers and create a bright future.

#### **Business Introduction**

The business scope of Biovanix Technology Co., Ltd. includes but is not limited to:

- 1. Liquid Chromatography Equipment: Offering a range of high-performance liquid chromatographs and ultra-high-performance liquid chromatographs to meet various customer needs.
- 2. Accessories Supply: Supplying a variety of accessories such as chromatographic columns, detectors, and sample preparation equipment to ensure the optimal operation of the equipment.
  - **Laboratory Equipment**: Providing a range of laboratory instruments, including but not limited to centrifuges, incubators, microscopes, etc.
- Technical Services: Providing professional technical support and after-sales service to help customers solve various technical issues encountered during use.
- Customized Services: Offering personalized customization services based on special customer needs, including equipment customization and experimental plan design.

We understand that each customer's needs are unique. Therefore, **Biovanix** is dedicated to providing personalized solutions to help customers improve experimental efficiency, optimize product quality, and ensure the accuracy and reliability of experimental results. We look forward to cooperating with you to create brilliance together.

### **Product List**

### LC Prepacked Column

4	Silica Matrix LC Column
14	HILIC Column
16	Ion Exchange Column
18	SEC Column
21	DNA Analysis Column
22	Sugar Analysis Column
24	Chiral Column
28	Protein A Analysis Column
30	Guard Column
 Sorbents	
32	Packing Materials For HPLC
33	Agarose Media
39	PSDVB/PMMA Polymer Microsphere
 Instruments & Hardw	vare
41	HPLC Column Packer
43	High-pressure Precision Plunger Pump
45	Glass Chromatography Column
48	Chromatography Hardware
49	Chromatography System
63	DAC System

# LC Prepacked Column

Biovanix prepacked columns are versatile HPLC columns based on the silica-gel for reversedphase/normal phase chromatography. Biovanix columns are made of spherical silica-gel particles which has low metal-ion content (<20 ppm) in total, high specific surface area and high mechanical strength. With unique chemical bonding technique, our products have excellent stability and reproducibility. They can meet the highest requirements for analysis and preparative applications.

#### Advantages

- Low silanol activity
- Uniform ligand binding
- Low metal content
- Narrow particle size
- Excellent stability

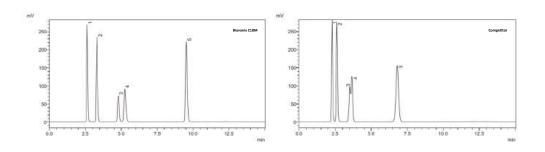
Products	Particle Size	Pore Size	Surface Area	Carbon Content	pH Range
C18	3/5/10 um	100Å	330m²/g	16%	2-8
C18H	5/10 um	100Å	330m²/g	18%	2-8
C18 AQ	5/10 um	100Å	330m²/g	13%	2-8
С8	3/5/8/10 um	100Å	330m²/g	12%	2-8
C4-300	5/10um	300Å	100m²/g	3%	2-8
C8-300	5/10um	300Å	100m²/g	5%	2-8
C18-300	5/10 um	300Å	100m²/g	8%	2-8
Phenyl	3/5/10 um	100Å	330m²/g	8%	2-8
SiO2	3/5/10 um	100/120Å	330m²/g	-	2-8
SiO2	5 um	80/200Å	330m²/g	-	2-8
NH <sub>2</sub>	3/5/10 um	100Å	330m²/g	4%	2-8
CN	3/5/10 um	100Å	330m²/g	7%	2-8
Diol	5/10 um	100Å	330m²/g	8%	2-8

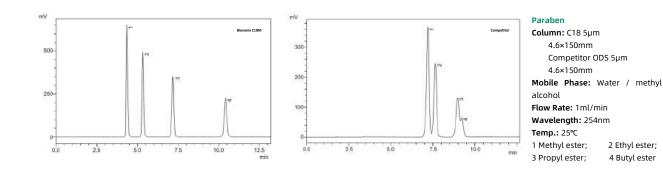
# C18 Column

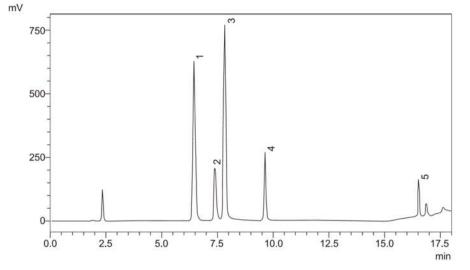
### Parameters

Particle Size	Pore Size	Surface Area	Carbon Content	pH Range
3/5/10um	100Å	330m²/g	16%	2-8

### Application







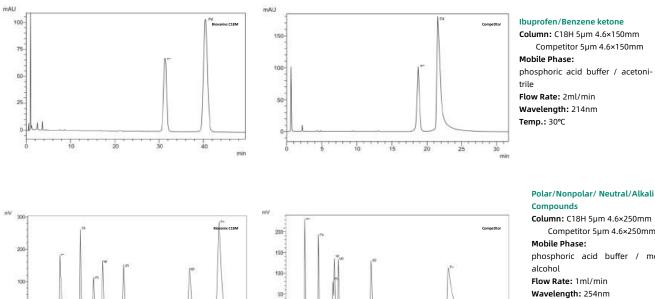
Water-soluble multivitamin Column: C18 5µm 4.6×150mm Mobile Phase: phosphoric acid buffer / acetonitrile Flow Rate: 1ml/min Wavelength: 210nm Temp.: 25°C 1 Pyridoxine; 2 VB1; 3 Nicotinamide; 4 Folic acid; 5 VB2

# C18H Column

### **Parameters**

Particle Size	Pore Size	Surface Area	Carbon Content	pH Range
5/10um	100Å	330m²/g	18%	2-8

### Application



### The purification of EPA in fish oil

8 23 9 17

7.5

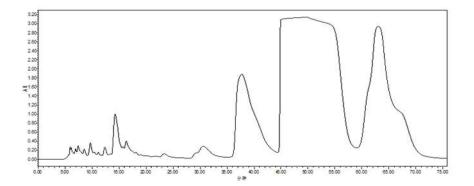
2.5

10.0

12.5

150

17.5



16.89 18.12

<u>૨૨ ૡ ૨૨.૨૮ ૣ૨૨.૧૮ ૨૨.૧૮ . ૨૫ ૡ ૹ</u>ૣ.૨૮.૨૮...

28.94

,<u>31,00, 32,21, 33,52</u>, .

### Polar/Nonpolar/ Neutral/Alkali

Column: C18H 5µm 4.6×250mm Competitor 5µm 4.6×250mm phosphoric acid buffer / methyl Temp.: 30℃

1 Uracil; 2 Butyl p-hydroxybenzoate;

3 Propranolol;

4 Di-propyl ortho-phthalate;

5 Naphthalene; 6 Acenaphthene;

7 Amitriptyline

### EPA in fish oil

Column: C18H 8µm 20×250mm Sample: 90% EPA material

**Finished sample** Purification: 99.7%



RT: 0.00 - 35.01

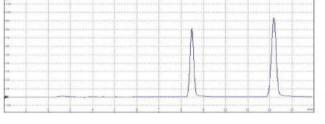
Rative Abardance

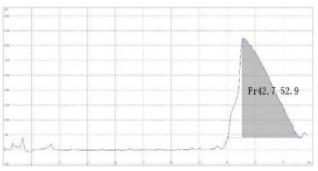
### **Peptides Purification Test**

Biovanix C18H and word-leading competitive product in a peptides purification study. The results show that the Biovanix C18H is similar to the competitive product.

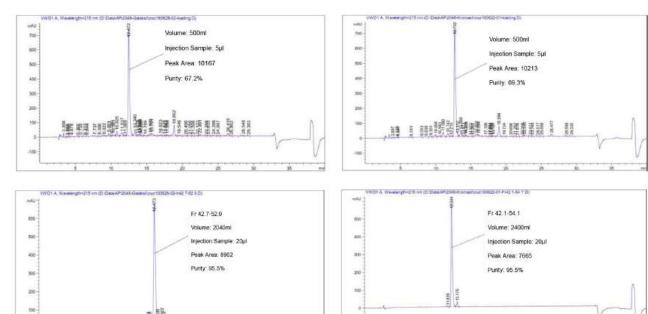
		Biovanix C18	Competitor
5 (	Column Height (cm)	21.3	21.1
Performance	Column Efficiency (TP)	70457	56935
	Injection Sample (g)	2.5	2.5
	Recovery (%)	89.3	90.0
Peptides	Purity(%)	95.5	95.5
	Freeze-dried product (g)	1.1302	1.1317

### BV C18 10um

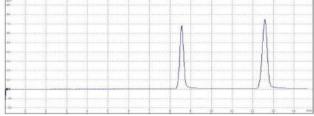


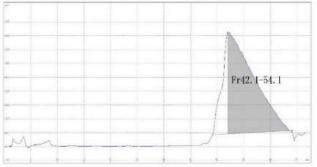


1.644



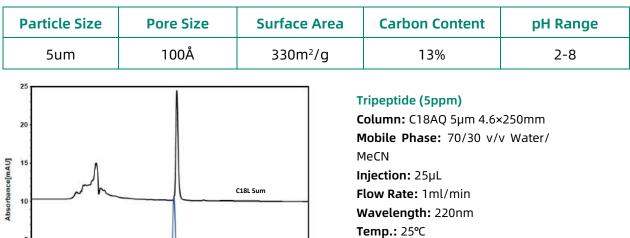
#### Competitor





# C18 AQ Column

#### Parameters



Competitor

12

9 Time [min]

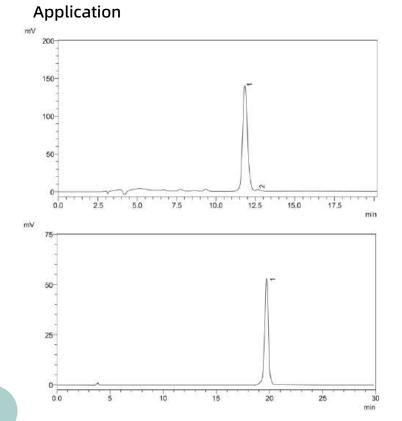
6

### C8 Column

#### Parameters

Particle Size	Pore Size	Surface Area	Carbon Content	pH Range
3/5/8/10um	1200Å	330m²/g	12%	2-8

15

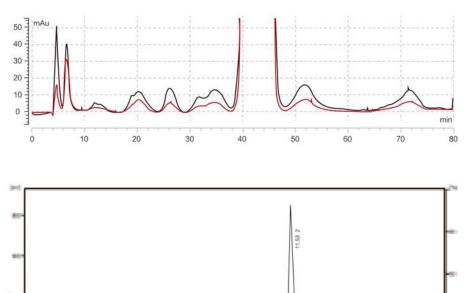


#### Orlistat

Column: C8 5µm 4.6×250mm Mobile Phase: water / EtOH Flow Rate: 1ml/min Wavelength: 203nm Temp.: 25℃

#### **Omeprazole enteric-coated tablets**

Column: C8 5µm 4.6×250mm Mobile Phase: water / EtOH Flow Rate: 1ml/min Wavelength: 203nm Temp.: 25 ℃



#### Orlistat

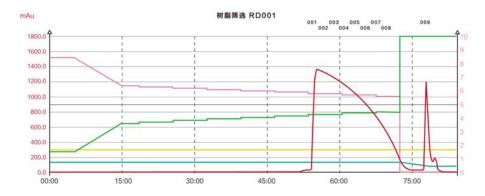
Column: C8 10µm 10×250mm Mobile Phase: EtOH solution Flow Rate: 4ml/min Wavelength: 195nm

#### Sample:

Dissolved raw material with methyl alcohol **Concentration:** 50-60mg/ml

#### Finished sample

Purification: 99.8% Single impurity < 0.1% Recovery: ≥90%



10.60 1

3

#### Insulin

**Column:** C8 8µm 10×250mm

Time	Α	В
0	85%	15%
5min	85%	15%
15min	64%	36%
225min	34%	66%

	Cycle	Injection	Purification	P1	P1c	P2
	_	100ml	99.76%	0.21%	0.02%	0.01%
	1	50ml	99.74%	0.22%	0.02%	0.02%
	2	50ml	99.75%	0.22%	0.02%	0.01%
	3	50ml	99.74%	0.22%	0.02%	0.01%
Biovanix C8	4	50ml	99.74%	0.22%	0.02%	0.01%
	5	50ml	99.76%	0.21%	0.02%	0.01%
	6	50ml	99.75%	0.22%	0.02%	0.02%
	7	50ml	99.76%	0.21%	0.02%	0.02%
	8	50ml	99.74%	0.22%	0.02%	0.01%
	9	50ml	99.74%	0.22%	0.02%	0.02%

# C4-300 Column

Parameters

Particle Size	Pore Size	Surface Area	Carbon Content	pH Range
5/10um	300Å	100m²/g	3%	2-8

# C8-300 Column

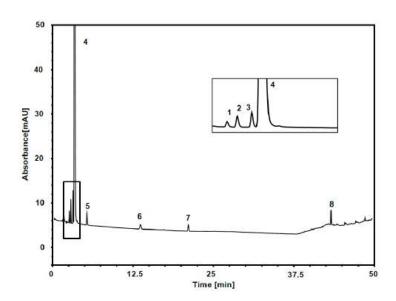
Parameters

Particle Size	Pore Size	Surface Area	Carbon Content	pH Range
5/10um	300Å	100m²/g	5%	2-8

# C18-300 Column

Parameters

Particle Size	Pore Size	Surface Area	Carbon Content	pH Range
5/10um	300Å	100m²/g	8%	2-8



Riboviron

**Column:** C18Bio, 5 μm 4.6×150 mm **Mobile Phase:** 

A) Na<sub>2</sub>SO<sub>4</sub>, pH2.5;
B) 40/60 v/v MeCN/Na<sub>2</sub>SO<sub>4</sub>, pH2.5
Gradient:

t (min)	%А	%В
0	100	0
15	100	0
25	87	13
35	87	13
50	0	100

Flow Rate: 1.0 mL/min

Temperature: 30°C

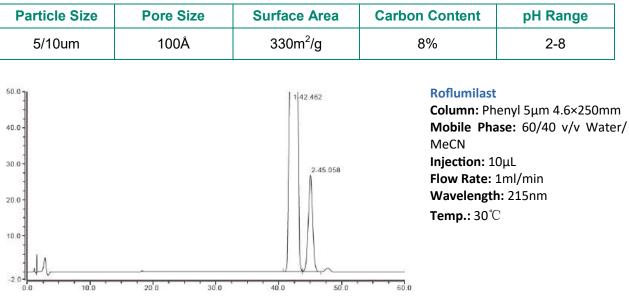
**Injection:** 10 μL **Detection:** UV 220 nm

#### Peaks:

- 1. triazolinic acid;
- 2. Triazolamide;
- 3. Ribavirin acid;
- 4. Ribavirin;
- 5. Ribavirin 5 isomers;
- 6. Ribavirin methyl ester;
- 7. Ribavirin 5' acetyl;
- 8. Ribavirin 5' benzoyl

# Phenyl Column

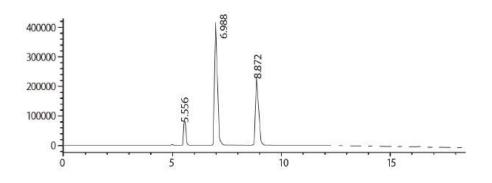
#### Parameters



# SiO<sub>2</sub> Column

### Parameters

Particle Size Pore Size		Surface Area	pH Range
3/5/10um	80/100/120/200/300Å	100/300/330m <sup>2</sup> /g	2-8



#### Maleic Maleic Fumaric Acid

Column: SiO2 5µm 4.6×250mm Mobile Phase: N-hexane/THF/Trifluoroacetic acid = 650/350/1.2 Injection: 20µl Flow Rate: 0.8ml/min Wavelength: 255nm Temp.: 30°C

# Diol Column

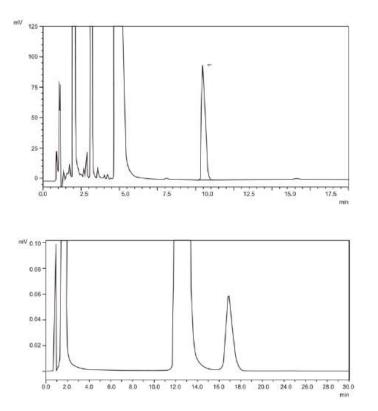
#### Parameters

Particle Size	Pore Size	Surface Area	Carbon Content	pH Range
5/10um	120Å	330m²/g	8%	2-8

# **CN Column**

### Parameters

Particle Size	Pore Size	Surface Area	Carbon Content	pH Range
3/5/10um	100Å	330m²/g	7%	2-8



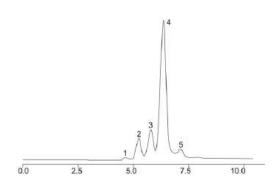
### Benzalkonium Chloride

Column: BV CN 5µm 4.6×150mm Competitor CN 5µm 4.6×150mm Mobile Phase: phosphate buffer / acetonitrile Flow Rate: 2.0ml/min Wavelength: 214nm Temp.: 35℃

# NH<sub>2</sub> Column

### Parameters

Particle Size	Pore Size	Surface Area	Carbon Content	pH Range
3/5/10um	100Å	330m²/g	3.5%	2-8



#### Oligomaltose

Column: Biovanixsil NH<sub>2</sub> 5µm 4.6×150mm Mobile Phase: water/ acetonitrile Flow Rate: 1ml/min Detector: RID Temp.: 40°C Peak 1 glucose; 2 maltose; 3 maltodextrin; 4 maltotetraose; 5 maltopentaose

# **Order Information**

	2.1-50mm	2.1-150mm	4.6-50mm	4.6-150mm
C18 3um	721-03010-002105	721-03010-002115	721-03010-004605	721-03010-004615
Phenyl 3um	706-03010-002105	706-03010-002115	706-03010-004605	706-03010-004615
SiO2 3um	720-03010-002105	720-03010-002115	720-03010-004605	720-03010-004615
NH2 3um	705-03010-002105	705-03010-002115	705-03010-004605	705-03010-004615
CN 3um	704-03010-002105	704-03010-002115	704-03010-004605	704-03010-004615

	4.6-150mm	4.6-250mm	10-250mm	20-250mm	30-250mm
C18 5um	721-05010-004615	721-05010-004625	721-05010-010025	721-05010-020025	721-05010-030025
C18H 5um	722-05010-004615	722-05010-004625	722-05010-010025	722-05010-020025	722-05010-030025
C18 AQ 5um	723-05010-004615	723-05010-004625	723-05010-010025	723-05010-020025	723-05010-030025
C8 5um	725-05010-004615	725-05010-004625	725-05010-010025	725-05010-020025	725-05010-030025
C4-300 5um	730-05010-004615	730-05010-004625	730-05010-010025	730-05010-020025	730-05010-030025
C8Bio 5um	729-05010-004615	729-05010-004625	729-05010-010025	729-05010-020025	729-05010-030025
C18Bio 5um	728-05010-004615	728-05010-004625	728-05010-010025	728-05010-020025	728-05010-030025
Phenyl 5um	706-05010-004615	706-05010-004625	706-05010-010025	706-05010-020025	706-05010-030025
SiO2 5um	720-05010-004615	720-05010-004625	720-05010-010025	720-05010-020025	720-05010-030025
NH2 5um	705-05010-004615	705-05010-004625	705-05010-010025	705-05010-020025	705-05010-030025
CN 5um	704-05010-004615	704-05010-004625	704-05010-010025	704-05010-020025	704-05010-030025
Phenyl 5um	706-05010-004615	706-05010-004625	706-05010-010025	706-05010-020025	706-05010-030025
Diol 5um	707-05010-004615	707-05010-004625	707-05010-010025	707-05010-020025	707-05010-030025

	4.6-250mm	10-250mm	20-250mm	30-250mm	50-250mm
C18 10um	721-10010-004625	721-10010-010025	721-10010-020025	721-10010-030025	721-10010-050025
C18H 10um	722-10010-004625	722-10010-010025	722-10010-020025	722-10010-030025	722-10010-050025
C8 10um	725-10010-004625	725-10010-010025	725-10010-020025	725-10010-030025	725-10010-050025
C4-300 10um	730-10010-004625	730-10010-010025	730-10010-020025	730-10010-030025	730-10010-050025
C8-300 10um	729-10010-004625	729-10010-010025	729-10010-020025	729-10010-030025	729-10010-050025
C18-300 10um	728-10010-004625	728-10010-010025	728-10010-020025	728-10010-030025	728-10010-050025
SiO2 10um	720-10010-004625	720-10010-010025	720-10010-020025	720-10010-030025	720-10010-050025

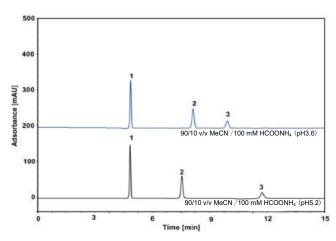
### HILIC Column

Hydrophilic interaction liquid chromatography (HILIC) is a chromatographic technique used to improve retention of very polar substances under reversed-phase chromatography conditions. HILIC has a wide variety of stationary phases, and in principle, any stationary phase with the polar surface can be used in HILIC mode. Therefore, stationary phases such as silica, amino (NH2), diol, amide (AM) and cyanogen (CN) packing materials can also be used as stationary phases for HILIC.

# HILIC-Diol Column

#### Parameters

Particle Size	Pore Size	Surface Area	Carbon Content	pH Range
3/5/10um	120Å	330m²/g	10%	2-8

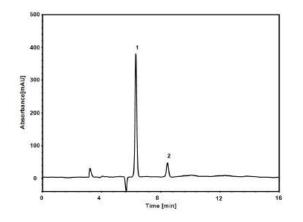


Column: HILIC-Diol 5 μm Dimension: 4.6×250mm Mobile phase: Blue: 90/10 v/v MeCN /100 mM HCOONH4 (pH3.6) Black: 90/10 v/v MeCN /100 mM HCOONH4 (pH5.2) Flow rate: 1 mL/min Temperature: 30°C Injection: 5 μL Detection: 218 nm Peaks: 1. DICY 2. MET 3. Melamine

### HILIC-Amide Column

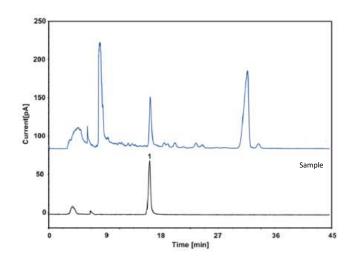
### Parameters

Particle Size	Pore Size	Surface Area	Carbon Content	pH Range
3/5um	120Å	300m²/g	7.5%	2-7



#### **Glycine & Methionine**

Column: HILIC-Amide, 5 µm Dimension: 4.6×250 mm Mobile Phase: 75/25 v/v AcCN / 25 mM MSP, pH5.5 Flow Rate: 1.0 mL/min Temperature: 35 ℃ Injection: 10 µL Detection: UV 210 nm Peaks: 1. Glycine 2. Methionine



Column: HILIC-Amide 5 μm Dimension: 4.6×250mm Mobile phase: 80/10 v/v MeCN /100 mM CH<sub>3</sub>COOH Flow rate: 0.5 mL/min Temperature: 20°C Injection: 10 μL Detection: CDA Peaks: 1. Stachydrine

# HILIC-Imidazole Column

### Parameters

Particle Size	Pore Size	Surface Area	Carbon Content	pH Range
3/5um	120Å	300m²/g	5.5%	2-7

### **Order Information**

Particle Size	Column I.D.	Length	Product Name		
(µm) (mm)		(mm)	HILIC-Diol	HILIC-Amide	HILIC-Imidazole
		250	A020-050012-04625	A068-050012-04625	A208-050012-04625
	1.6	150	A020-050012-04615	A068-050012-04615	A208-050012-04615
5	4.6	100	A020-050012-04610	A068-050012-04610	A208-050012-04610
		50	A020-050012-04605	A068-050012-04605	A208-050012-04605
		150	A020-030012-04615	A068-030012-04615	A208-030012-04615
3	1.0	100	A020-030012-04610	A068-030012-04610	A208-030012-04610
3	4.6	50	A020-030012-04605	A068-030012-04605	A208-030012-04605
		30	A020-030012-04603	A068-030012-04603	A208-030012-04603
5	4.6	10	A020-030012-04601	A068-030012-04601	A208-030012-04601
3	4.6	10	A020-030012-04601	A068-030012-04601	A208-030012-04601

# Ion Exchange Column

Biovanix ion exchange IEX columns are based on modified silica particles and include weak cation exchange (WCX), strong cation exchange (SCX) and strong anion exchange (SAX) columns.

WCX columns are carboxylic acid modified silica particles that designed for separating charged variants in proteins, including monoclonal antibodies (mAbs) and related substances. SCX columns are based on sulfonate-modified silica particles. These columns feature a strong

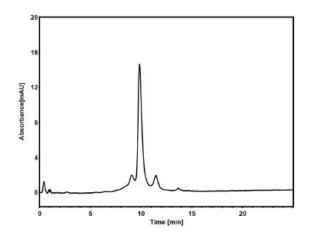
cation exchange property and are suitable for cationic analytes.

SAX columns are based on quaternary ammonium modified silica particles that feature a strong anion exchange property and are suitable for separating anionic analytes.

### **Main Features**

- Optimal selectivity for separating antibody charged variants
- Good peak shape and low carryover
- High column efficiency and mechanical strength
- Excellent tolerance to acids, bases and organic solvents
- Good column-to-column consistency

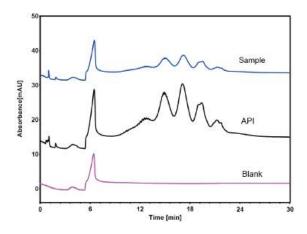
Product Name	WCX Column	SCX Column	SAX Column			
Functional Group	Carboxylic Acid	Sulfonic Acid	Quaternary Ammonium			
Substrate	Monodis	Monodispersed spherical PS/DVB particles				
Particle Size	5 & 10 µm					
Pore Size	Nonporous					
Pressure Limit	4500 psi for 10 μm 5000 psi for 5 μm					
Temperature Lim- it	60°C					
pH Range	2-12					



#### Fab and Fab-PEG

Column: SCX, 10 µm Dimension: 4.6×150 mm Mobile Phase: A) 20 mM MES, pH5.5 B) 300mM NaCl in 20 mM MES, pH5.5 Gradient: t(min) %A %B 100 0 -10 0 100 0 20 60 40 20.1 0 100 25 0 100 Flow Rate: 1.0 mL/min Temperature: 30 °C Injection: 2 µL Detection: UV 280 nm Sample: Fab-PEG (3 mg/mL in 50mM sodium acetate solution)

Fab (5 mg/mL in 50mM phosphate buffer)



#### Glycoprotein

Column: SAX, 10 µm Dimension: 4.6×250 mm Mobile Phase: A) 20 mM phosphate buffer, pH3.0 B) 300 mM NaCl in 20 mM phosphate buffer, pH3.0 Gradient: t(min) %A %B -15 100 0 0 100 0 20 0 100 23 0 100 Flow Rate: 1.0 mL/min Injection: 5 µL Temperature: 30 ℃ Detection: UV 280 nm Sample: API (40 mg/mL in mobile phase A) Injection sample (10 mg/mL)

# **Order Information**

	Particle Size	4.6-50mm	4.6-100mm	4.6-150mm	4.6-250mm
	5um	B311-050000-004605	B311-050000-004610	B311-050000-004615	B311-050000-004625
WCX	10um	B311-100000-004605	B311-100000-004610	B311-100000-004615	B311-100000-004625
5 C Y	5um	B411-050000-004605	B411-050000-004610	B411-050000-004615	B411-050000-004625
SCX	10um	B411-100000-004605	B411-100000-004610	B411-100000-004615	B411-100000-004625
SAX	5um	B611-050000-004605	B611-050000-004610	B611-050000-004615	B611-050000-004625
	10um	B611-100000-004605	B611-100000-004610	B611-100000-004615	B611-100000-004625

#### mAb

Column: WCX, 10 µm Dimension: 4.6×150 mm Mobile Phase: A) 20 mM ACES, pH7.0 B) 300 mM NaCl in 20 mM ACES Gradient: t (min) %A %B

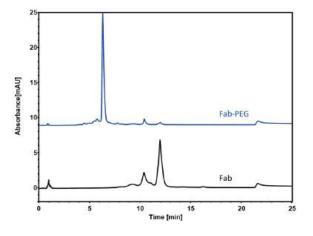
-20	80	20
0	80	20
5	80	20
25	60	40
25.1	0	100
30	0	100

Flow Rate: 1.0 mL/min

Temperature: 30°C

Injection: 2 µL Detection: UV 280 nm

Sample: mAb (5.0 mg/mL in mobile phase A)



# SEC Column

Biovanix SEC columns are a family of high performance, size exclusion chromatography (SEC) columns for separating a broad range of biomolecules based on the size of analytes. The column technology involves creation of a neutral hydrophilic layer on the surface of specially designed high-strength monodispered silica particles followed by well established production process. Therefore, Biovanix SEC columns can be used in pharmaceutical, biopharmaceutical and academic research applications.

#### Features

High column efficiency, high resolution;

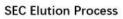
Minimal undesired interactions between stationary phase and analytes, resulting in good peak shape and recovery;

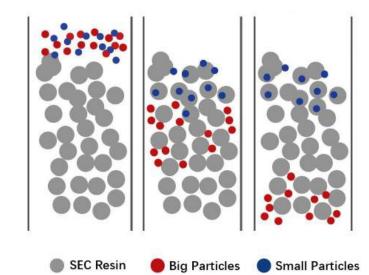
High physical strength for better column lifetime;

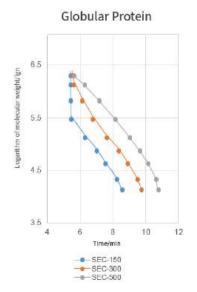
Broad range of applications, including small molecule drugs, peptides, proteins, oligos, glycans, etc.

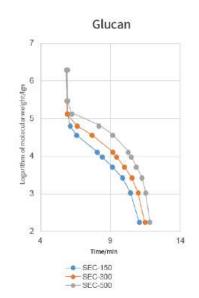
### Types

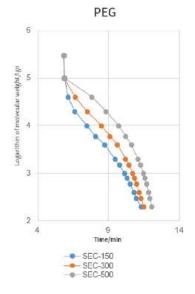
- SEC-120 designed for mallmolecule, drugs, peptides, glycans, small oligos.
- SEC-150 designed for separating peptides, glycans, small oligos, small proteins.
- SEC-300 designed for mAb aggregate determination.
- SEC-500 designed for separating larger proteins and oligos.





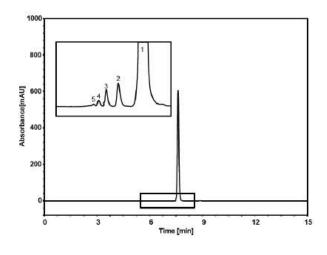


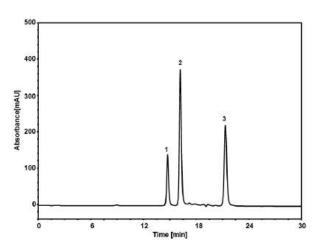




#### Parameter

	SEC-150	SEC-300	SEC-500
Ligand		Diol	
Substrate	Monodi	isperse High-pure Silica	Particle
Particle Size		5um	
Pore Size	150A	300A	500A
pH Range	2-8		
Temperature	<40°C		
Pressure		6000psi	
Ligand Range (PEG)	200-15,000	1.000-100,000	5,000-200,000
Ligand Range (Glucan)	1,000-50,000	5,000-150,000	20,000-500,000
Ligand Range (Globular Protein)	5,000-150,000	10,000-1,000,000	20,000-2,000,000





#### Cetiriaxone Sodium

Dimension:7.8×300 mmMobile Phase:5mM phosphate buffer, pH7.0Flow Rate:1.0 mL/minTemperature:30 °CInjection:2 μLDetection:UV 231 nmPeaks:1. Ceftriaxone2~5. Polymers of Ceftriaxone

#### Peptide

 Column: SEC-150, 5  $\mu$ m

 Dimension:
 7.8×300 mm

 Mobile Phase:
 90/10 v/v 300 mM NaCl in 50

 mM phosphate
 buffer/MeCN

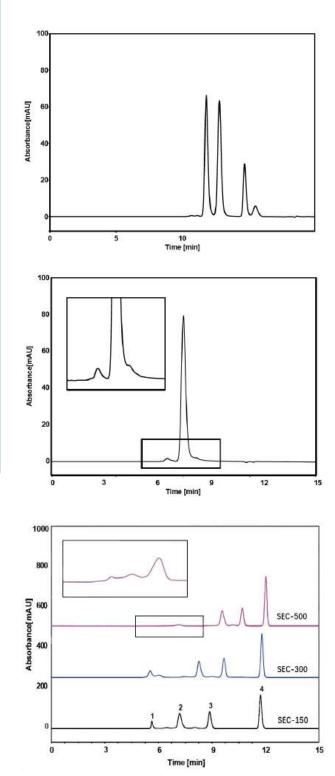
 Flow Rate:
 0.6 mL/min

 Temperature:
 25 °C

 Injection:
 10  $\mu$ L

 Detection:
 UV 215 nm

 Peaks:
 1. P-3000
 2. P-2000
 3. P-1000



**Order Information** 

#### **Trispecific Antibody**

Column: SEC-300, 3 μm Dimension: 4.6×300 mm Mobile Phase: 90/10 v/v 300 mM NaCl in 50 mM phosphate buffer, pH6.8 / MeCN Flow Rate: 0.21 mL/min Temperature: 30 °C Injection: 2 μL Detection: UV 280 nm Sample: Trispecific Antibody (5 mg/mL)

#### **Fusion Protein**

Column: SEC-500, 5 μm Dimension: 4.6×300 mm Mobile Phase: 150 mM phosphate buffer, pH6.8 Flow Rate: 0.35 mL/min Temperature: 30 °C Injection: 5 μL Detection: UV 280 nm Sample: Fusion Protein (1 mg/mL in H2O)

Column Black: SEC-150, 5μm Column Red: SEC-300, 5μm Dimension: 4.6×300mm Mobile phase: 150 mM Phosphate Buffered Saline (pH 6.8) Flow rate: 0.35 mL/min Temperature: 30 °C Injection: 5μL Detection: UV 280 nm Peaks: 1. Thyroglobulin (0.5mg/mL) -669,000Da 2. Conalbumin (1mg/mL) -75,000Da 3. Ribonuclease A (1mg/mL) -13,700Da

4. Uracil (0.1mg/mL) –112Da

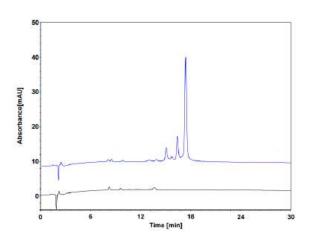
	5um 7.8×300mm	5um 4.6×300mm	5um 4.6×50mm	5um 4.6×10mm
SEC-150	213-05015-07830	213-05015-04630	213-05015-04605	213-05015-04601
SEC-300	213-05030-07830	213-05030-04630	213-05030-04605	213-05030-04601
SEC-500	213-05050-07830	213-05050-04630	213-05050-04605	213-05050-04601

### **DNA Analysis Columns**

DNA columns are based on the most advanced column technology and designed for highly efficient separation and precise characterization of oligonucleotides including DNA/RNA, mRNA and plasmid by liquid chromatography and LC-MS.

- DNA RP columns are based on macroporous PS/DB microspheres with high crosslinking degree and they are suitable for the separation of large DNA and RNA molecules.
- DNA 200-C18, based on monodispersed C18 bonded silica gel, is used for the separation of smaller oligonucleotides.
- DNA 1000-C18 is based on monodispersed C18 bonded silica gel for the separation of large oligonucleotides, DNAs and RNAs.

Product	DNA RP	DNA 120-C18	DNA 1000-C18
Functional Group	Quaternary Ammonium	Octadecyl	Octadecyl
Substrate	PS-DVB	Spherical Silica	Spherical Silica
Particle Size	5um	3um/5um	3um/5um
Pore Size	-	200A	1000A
Pressure Limit	5000 psi	5000psi for 5µm 6000psi for 3µm	5000psi for 5µm 6000psi for 3µm
Temperature Limit	80°C	50°C	50°C
pH Range	2-12	2-11	2-11



#### **RNA in Vaccines**

**Column:** DNA1000 C18, 5 μm Dimension: 4.6×150 mm Mobile Phase: A) 0.1 M CH3COOH-Et3N solution, pH7.0 B) 25/75 v/v MeCN/ 0.1 M CH3COOH-Et3N solution, pH7.0 Gradient: t (min) %A %B 0 60 40 30 35 65 31 60 40 40 40 60 Flow Rate: 1.0 mL/min Temperature: 60 ℃ Injection: 10 µL Detection: UV 254 nm Sample: Long strands of RNA in vaccines (1000~2000 nt)

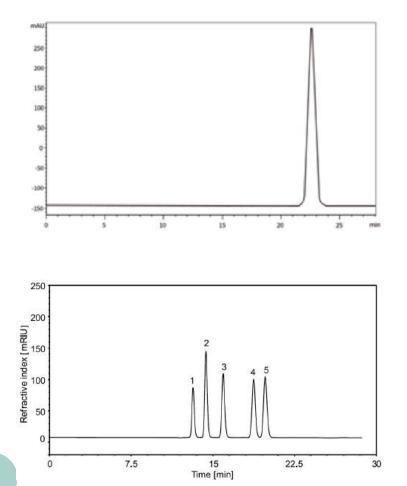
### **Order Information**

	4.6×250mm	4.6×150mm	2.1×150mm	2.1×50mm
DNA RP	D301-050000-04625	D301-050000-04615	-	-
DNA 120-C18	D003-030020-04625	D003-030020-04615	D003-030020-02115	D003-030020-02105
DNA 1000-C18	D003-050100-04625	D003-050100-04615	D003-050100-02115	D003-050100-02105

# Sugar Analysis Column

Biovanixsil Sugar analysis column can meet the analysis requirements of different types of polysaccharides, sugar alcohols and organic acids. These columns are produced with two kinds of PS-DVB monodisperse microsphere with different degree of cross-linking. Hydrogen-type, sodium-type and calcium-type were formed through a unique sulfonation bonding process based on coordination exchange principle., they shows different selectivity in the analysis.

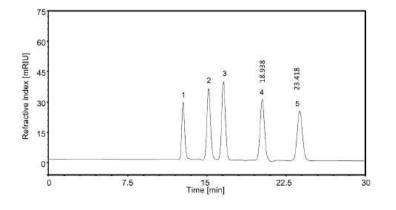
	Sugar-10H	Sugar-10Ca	Sugar-10Na
Ligand	-SO₃H	-SO₃Ca	-SO₃Na
Substrate	Monodisperse PS-DVB substrate		
Particle Size	6um/8um		
Degree of crosslinking	0.1		
pH Range	1-3	5-9	5-9
Temperature		<95℃	
Pressure		1200psi	
Application	Organic acids and alcohols mixer	honey and oligosaccha- rides	sugars and mannitols



#### **Riboviron**, **RBV**

Column: Sugar-10H, 8um Dimension: 7.8×300mm Mobile phase: H2SO4 H2O, pH2.5 Flow rate: 0.5mL/min Temperature: 30°C Detection: UV207nm

Column: Sugar-10H, 6um Dimension: 7.8x300mm Mobile phase: 9mM H2SO4 Flow rate: 0.5mL/min Temperature: 65°C Injection: 5µL Detector: RID Samples: 1. Citric acid; 2. Malic acid; 3. Succinic acid; 4. Formic acid; 5. Acetic acid.



#### Mannitol

Column: Sugar-10Ca, 6um Dimension: 7.8x300mm Mobile phase: H2O Flow rate: 0.5mL/min Temperature: 80°C Injection: 5uL Detection: RID Sample: 1. Sucrose; 2. Galactose;

3. Fructose; 4. Mannito; 5. Sorbitol

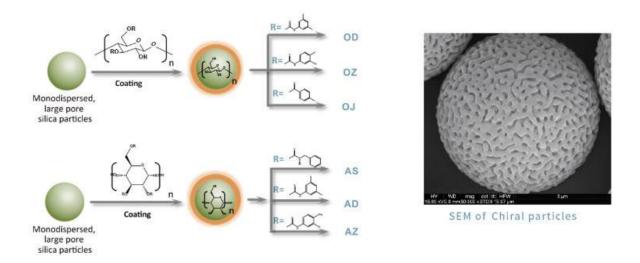
# Order Information

Particle Size	Column Size	Sugar-10H	Sugar-10Na	Sugar-10Ca
Gum	4.6*250mm	017-06010-04625	058-06010-04625	019-06010-04625
6um	7.8*250mm	017-06010-07825	058-06010-07825	019-06010-07825
0	4.6*250mm	017-08010-04625	058-08010-04625	019-08010-04625
8um	7.8*250mm	017-08010-07825	058-08010-07825	019-08010-07825

# **Chiral Column**

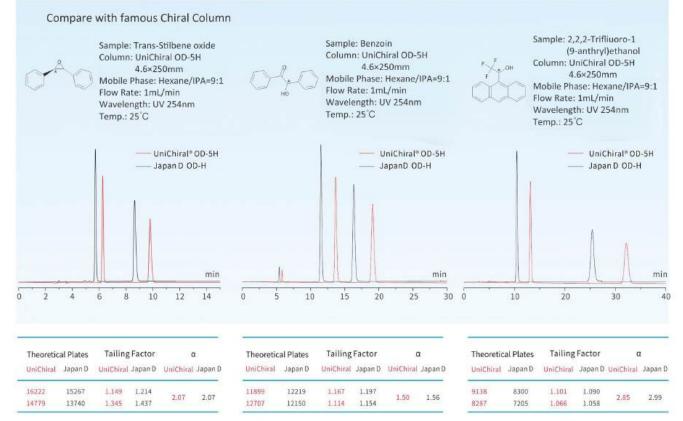
Biovanix Chiral Columns are designed for chiral separation. Unichiral<sup>®</sup> is polysaccharide derivative bond with microporous silica-gel substrate which has the advantages of high capacity of cellulose/amylose derivative, good stability and high chiral separation ability.

Biovanix Chiral Columns include OD, OJ, OZ, AS and AD series. 5um columns are for analysis, 10um columns are for preparation. OD and AD columns are the most widely used for HPLC analysis, semipreparative, SFC of chiral compound.

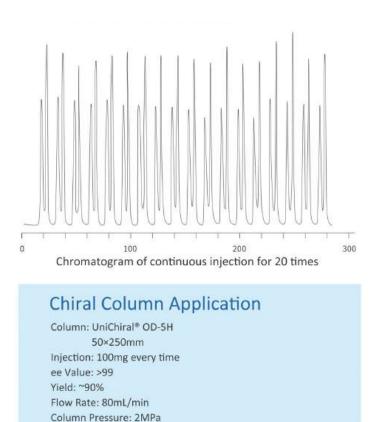


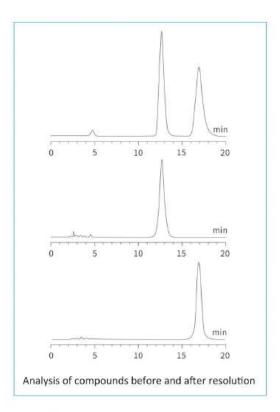
### Specification

Product Name	2	Surface Functional Groups	Column Specification
Chiral OD		Cellulosetris(3,5-dimethylphenylcarbamate)	
Chiral OJ	a set of the set of th	Cellulosetris(4-methylbenzoate)	
Chiral OZ		Cellulosetris (3-chloro-4-methylbenzylcarbamate)	5 μm, 4.6×50 mm 5 μm, 4.6×100 mm
Chiral AS		Amylosetris[(S)- $\alpha$ -methylbenzylcarbamate)	5 μm, 4.6×150 mm 5 μm, 4.6×250 mm
Chiral AD		Amylosetris(3,5-dimethylphenylcarbamate)	
Chiral AZ	$= \left\{ \begin{array}{c} c_n \\ $	Amylosetris(3-chloro-4-methylbenzylcarbamate)	

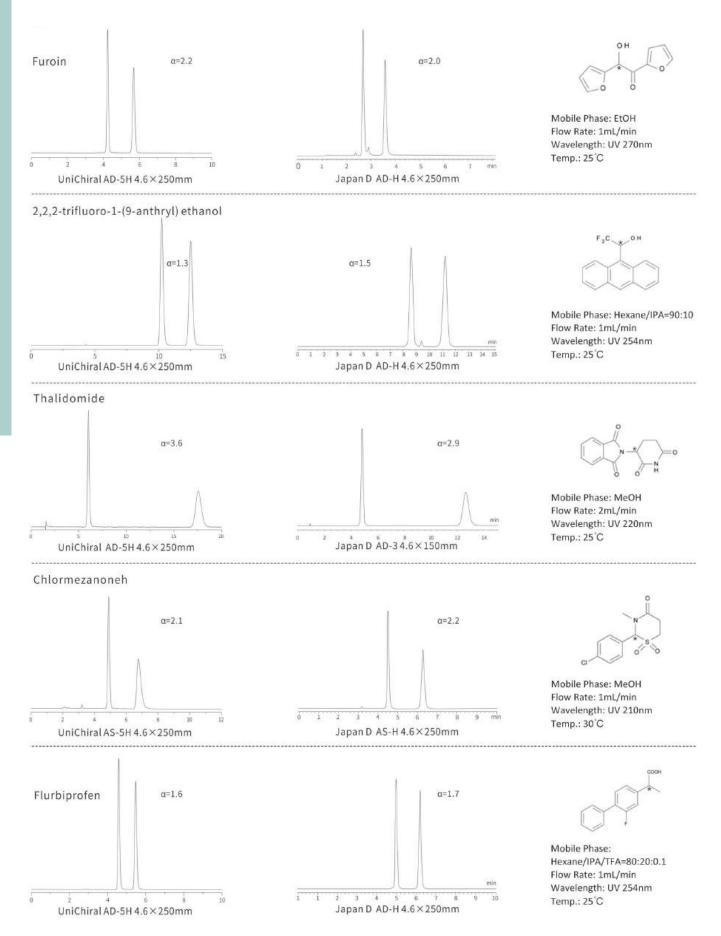


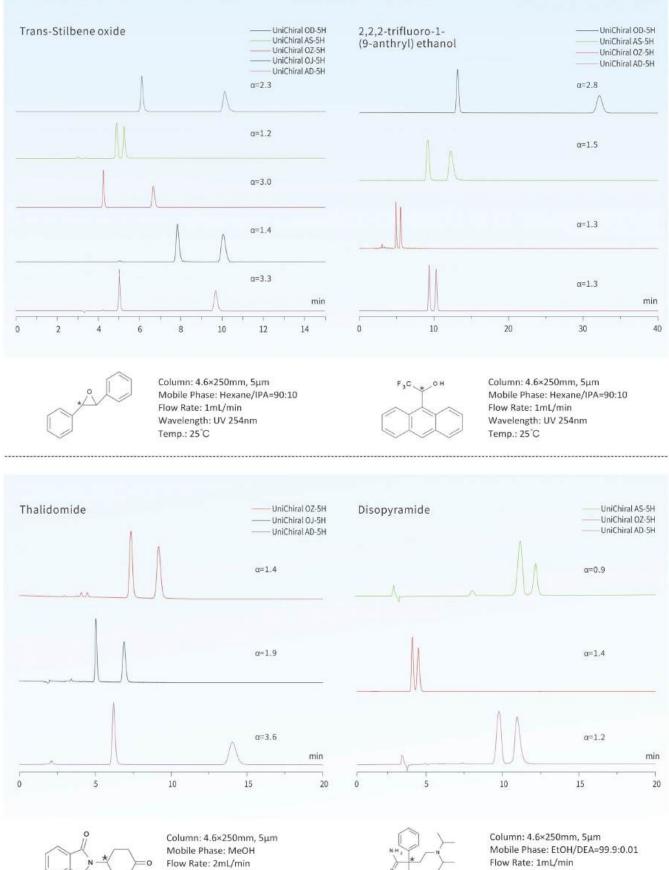
Compare with Japan products, UniChiral<sup>®</sup> chiral column media has similar selective, higher column efficiency, and better peak type symmetry.





UniChiral<sup>®</sup> chiral column has lower pressure and satisfied separation ability.





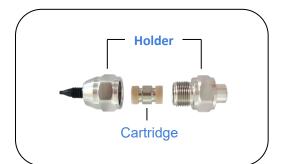
Wavelength: UV 220nm Temp.: 25°C



Flow Rate: 1mL/min Wavelength: UV 254nm Temp.: 25°C

# **Guard Column**

Cartridge + Holder Size: 4.6-10mm, 10-10mm, 20-10mm







# Precolumn

Size: 4.6-50mm, 10-30mm, 10-50mm, 20-30mm, 20-50mm, 30-50mm, 50-50mm Packing material: matched with prepacked columns





USP Listing	Packing	Products
L1	Octadecyl silane chemically bonded to porous or non-porous silica or ceramic mi- croparticles, 1.5 to 10 µm in diameter, or a monolithic rod	C18
L3	Porous silica particles, 1.5 to 10 $\mu m$ in diameter, or a monolithic silica rod	Silica
L7	Octylsilane chemically bonded to totally or superficially porous silica particles, 1.5 to 10 μm in diameter, or a monolithic silica rod	C8
L8	An essentially monomolecular layer of aminopropylsilane chemically bonded to to- tally porous silica gel support, 1.5 to 10 μm in diameter, or a monolithic silica rod	NH2
L9	Irregular or spherical, totally porous silica gel having a chemically bonded, strongly acidic cation-exchange coating, 3 to 10 μm in diameter	SCX
L10	Nitrile groups chemically bonded to porous silica particles, 1.5 to 10 µm in diameter, or a monolithic silica rod	CN
L11	Phenyl groups chemically bonded to porous silica particles, 1.5 to 10 μm in diame- ter, or a monolithic silica rod	Phenyl
L14	Silica gel having a chemically bonded strongly basic quaternary ammonium anion- exchange coating, 5 to 10 μm in diameter	SAX
L17	Strong cation-exchange resin consisting of sulfonated cross-linked styrene- divi- nylbenzene copolymer in the hydrogen form, 6 to 12 μm in diameter	Sugar-10H
L19	Strong cation-exchange resin consisting of sulfonated cross-linked styrene- divi- nylbenzene copolymer in the calcium form, 5 - 15 μm in diameter	Sugar-10Ca
L20	Dihydroxypropane groups chemically bonded to porous silica or hybrid particles, 1.5 to 10 μm in diameter, or a monolithic silica rod	HILIC-Diol SEC
L26	Butyl silane chemically bonded to totally porous or superficially porous silica parti- cles, 1.5 to 10 μm in diameter	C4
L40	Cellulose tris-3,5-dimethylphenylcarbamate coated porous silica particles, 3 $\mu$ m to 20 $\mu$ m in diameter	Chiral CND
L43	Pentafluorophenyl groups chemically bonded to silica particles by a propyl spacer, 1.5 to 10 $\mu$ m in diameter	PFP
L51	Amylose tris-3,5-dimethylphenylcarbamate-coated, porous, spherical, silica parti- cles, 3 to 10 µm in diameter	Chiral CMD
L58	Strong cation-exchange resin consisting of sulfonated cross-linked styrene- divi- nylbenzene copolymer in the sodium form, about 6 to 30 µm diameter	Sugar-10Na
L60	Spherical, porous silica gel, 10 $\mu m$ or less in diameter, the surface of which has been covalently modified with alkyl amide groups and endcapped	Polar C18
L62	C30 silane bonded phase on a fully porous spherical silica, 3 to 15 $\mu m$ in diameter	C30
L68	Spherical, porous silica, 10 µm or less in diameter, the surface of which has been covalently modified with alkyl amide groups and not endcapped	HILIC-Amide Glycan
L78	A silane ligand that consists of both reversed-phase (an alkyl chain longer than C8) and anion-exchange (primary, secondary, tertiary, or quartenary amino groups) functional groups chemically bonded to porous or non-porous silica or ceramic mi- cro-particles, 1.0 to 50 μm in diameter, or a monolithic rod	SAA
L80	Cellulose tris(4-methylbenzoate)-coated, porous, spherical, silica particles, 5 - 20 µin diameter	Chiral CNJ
L90	Amylose tris-[(S)-alpha-methylbenzylcarbamate] coated on porous, spherical silica particles, 3 to 10 μm in diameter	Chiral CMS
L118	Aqueous polymerized C18 groups on silica particles, 1.2 to 5 $\mu m$ in diameter	РАН

# Protein A Analysis Column

Biovanix Protein A Analysis column is designed for fast analysis of monoclonal antibody (mAb) concentration (titer) with protein A affinity chromatography. Alkali resistant recombinant Protein A (rProtein A) ligand used in this product has specific binding ability to the Fc region of immunoglobulins. The matrix of Protein A column is PS-DVB (Polystyrene Divinylbenzene) particles, which are highly cross-linked for enhanced mechanical stability and particle strength. Compared to agarose base, hydrophilic PS-DVB



particles have higher pressure stability, dynamic binding capacity (DBC) and longer lifetime. Hence, Protein A column is an excellent choice for mAbs titer analysis.

#### Advantages

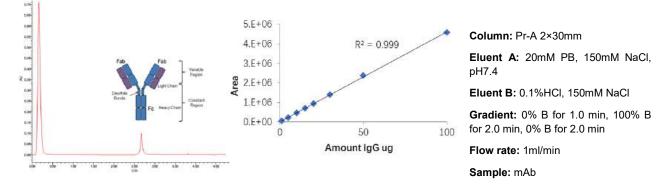
- Direct use on HPLC instruments
- High dynamic binding capacity, quick mass transfer
- Minimum nonspecific absorption, accurate determination
- Fast analysis cycle time: 2-5 minutes
- Satisfactory linearity in wide concentration range: 0.02-10 mg/ml
- Long lifetime
- Alkali resistance: 0.1-0.5 M NaOH cleaning conditions

	Pr-A Column	Pr-A Plus Column	
Column Size	2.1mm ID × 30mm L; 4.6mm ID × 50mm L		
Column Tube Material	316L Stainl	ess steel, PEEK	
Support Matrix	Polystyrene Divin	ylbenzene (PS-DVB)	
Ligand	Recombin	ant Protein A	
Particle Size	30µm	20µm	
Shipping Solution	0.02 M sodium phosphate, pH 7.0, 0.02% sodium azide		
pH range	p⊦	12-10	
Maximum Pressure	10	00 psi	
Cleaning Agents	0.1-0.	5M NaOH	
Cycle Time	2-5 minutes		
Temperature Stability	4-40 °C		

### Parameter

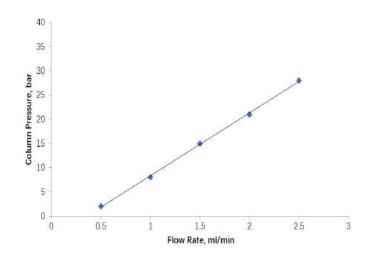
#### **Excellent Linearity**

Quantitative analysis for antibody fermentation broth by Protein A column.



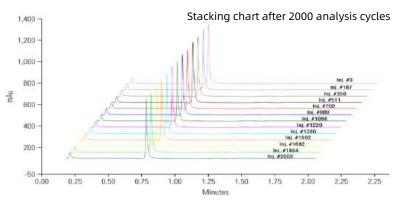
#### **Flow Rate and Pressure**

The operating flow rate is 0.5-3 ml/min as recommended for HPLC system.



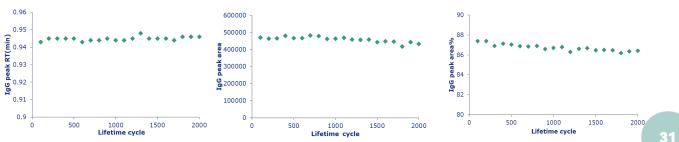
Column: Pr-A, 2.0×30mm Eluent A: 20mM PB, 150mM NaCl, pH7.4 Eluent B: 0.1%HCl, 150mM NaCl **Temp:** 25 ℃ System: Waters 1525 pump

#### Long Lifetime



Column	Pr-A, 2×30 mm
Eluent A	50 mM Sodium Phosphate, 150 mM NaCl, pH 7.0
Eluent B	0.1% HCl, 150 mM NaCl, pH 1.9
Flow Rate	2.0 ml/min
Gradient	0% B for 0.2 min, 100% B for 0.60 min, 0% B for 1.20 min
Temperature	25℃
Detection	280 nm
Injection volume	10 uL
Sample	hIgG, 1 mg/mL

Statistical analysis of data demonstrates



# **Packing Material**

### Packing Materials For HPLC Column

Biovanix prepacked columns are versatile HPLC columns based on the silica-gel for reversedphase/normal phase chromatography. Biovanix columns are made of spherical silica-gel particles which has low metal-ion content (<20 ppm) in total, high specific surface area and high mechanical strength. With unique chemical bonding technique, our products have excellent stability and reproducibility. They can meet the highest requirements for analysis and preparative applications.

#### Advantages

- Low silanol activity
- Uniform ligand binding
- Low metal content
- Narrow particle size
- Excellent stability

Products	Particle Size	Pore Size	Surface Area	Carbon Content	pH Range
C18	5/10/20/30/50um	100Å	330m²/g	16%	2-8
C8	5/10 um	100Å	330m²/g	12%	2-8
C4-300	5/10um	300Å	100m²/g	3%	2-8
C8-300	5/10um	300Å	100m²/g	5%	2-8
C18-300	5/10 um	300Å	100m²/g	8%	2-8
Phenyl	5/10 um	100Å	330m²/g	8%	2-8
SiO2	5/10 um	100Å	330m²/g	-	2-8
NH₂	5/10 um	100Å	330m²/g	4%	2-8
CN	5/10 um	100Å	330m²/g	7%	2-8
Diol	5/10 um	100Å	330m²/g	8%	2-8

### Agarose Media

Biovanix Agarose media offer the high specificity and selectivity for biomolecular separations and purifications. Affinity separation can often remove contaminants difficult to eliminate using other chromatographic procedures. Purifications up to several orders of magnitude can be achieved in a single step.

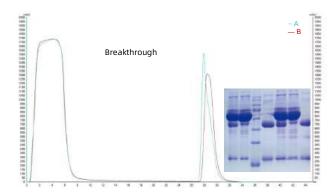
#### Advantages

- Stable bonding
- Low ligand leaching
- NaOH CIP

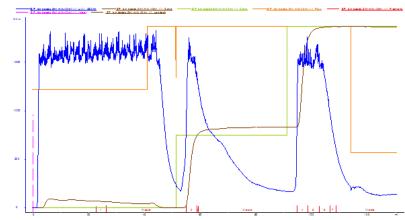
	Pr A 4FF	Pr G 4FF	IgM 6HP	IgY 6HP	
Substrate	4% cross-link	ed agarose	6% cross-linked agarose		
Ligand	rProtein A rProtein G		lgM	lgY	
Particle Size	90µm (45∙	-165µm)	37µm (25-45µm)		
Capacity (DBC)	20mg hIgG/ml 25mg hIgG/ml		5mg hIgG/ml	20mg hIgG/ml	
pH Stability	2-10 (Short)	3-9 (Long)	2-13 (Short) 3-11 (Long)		
Max. Pressure	0.3MPa				
Flow Rate	300cm/h	300cm/h	150cm/h	150cm/h	
Storage	4-8 °C, 20% EtOH				

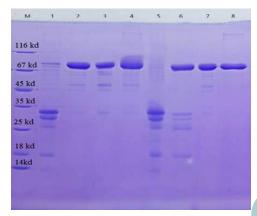
### Purification of IgG in human serum

Sample: 5ml human serum with five times dilution (different buffers)
Column: HT01 1.0ml Protein G 4FF
Balance: A 0.02 M PB pH7.0;
B 0.02M PB, 0. 3M NaCl pH 7.0
Elution: 0.1 M Glycine-HCl pH2.7
Flow Rate: 0.25m/min (sampling), 1ml/min



### **Protein Purification**





# Ni Affinity Media

Biovanix Ni affinity media are a nickel metal chelating chromatography media with IDA/NTA/ TED ion high cross-linked agarose. BV gel Ni Affinity Media have advantages of excellent stability, biocompatibility, solvent compatibility, large capacity, good selectivity, high resolution natural generation and low cost.

#### Ni NTA Media

Biovanix Ni IMAC/IMAC+ media use Ni<sup>2+</sup> to interact with amino acids (histidine, cysteine, tryptophan) on the side chain of protein. It is suitable for the separation and purification of His tag proteins and biomolecules interacting with Ni<sup>2+</sup>.

Substrate	6% high cross-linked agarose
Particle Size	90μm (45-165μm) BV Ni IMAC/NTA; 37μm(25-45μm) BV Ni IMAC/NTA+
Binding Capacity	Approx. 40 mg His (tag protein)/ml media
pH Stability	3-12 (Working); 2-14 (Cleaning)
Max. Pressure	0.3MPa
Chemical Stability	0.01M HCl; 0.01M NaOH (one week);1M NaOH; 70%EtOH(12 hours); 2% SDS(1 hour); 30% isopropanol (0.5 hour)
Storage	4-15 ℃, 20℃ EtOH

### Ni IDA Media

Substrate	6% high cross-linked agarose			
Particle Size	90μm (45-165μm)			
Binding Capacity	Approx. 45 mg His (tag protein)/ml media			
pH Stability	3-12 (Working); 2-14 (Cleaning)			
Max. Pressure	0.3MPa			
Chemical Stability	Common aqueous solutions and buffers. Avoid chelating agents (EDTA, EGTA) and reducing agents (DTT, DTE)			
Storage	4-15 ℃, 20℃ EtOH			

#### Ni TED Media

Tolerance of higher reducing agents and chelating agents, eukaryotic secreted expression of His tag protein can loading without prior treatment, maximum protect the activity of protein. Direct use NaOH for cleaning without nickel removal, reduce cleaning time. Lower nickel shedding, no need for repeated regeneration.

Substrate	6% high cross-linked agarose		
Particle Size	90μm (45-165μm)		
Binding Capacity Approx. 20 mg His (tag protein)/ml media			
pH Stability	3-12 (Working); 2-14 (Cleaning)		
Max. Pressure	0.3MPa		
Chemical Stability	0.01M hydrochloric acid; 0.01M sodium hydroxide (one week); 20mM EDTA; 10mM DTT; 1M sodium hydroxide; 8M urea; 100mM EDTA; 0.5m imidaz- ole (2 hours); 6M guanidine hydrochloride (24 hours); 30% isopropanol (20 min)		
Storage	4-15 °C, 20°C EtOH		

### **Application Case**

#### **His tag Protein Purification**

Column: 1ml Sample: E. coli cracking supernatant (His tag protein) Equilibrium liquid: 0.02MPB、0.5MNaCl, pH 7.4 Elution: 0.02MPB, 0.5M NaCl, Imidazole, pH 7.4 Flow Rate: 1ml/min 1. Original; 2. Breakthough; 3. Elution(4%B); 4. Elution (100%B)

#### Column: 1ml

**Sample:** E. coli cracking supernatant (His tag protein)

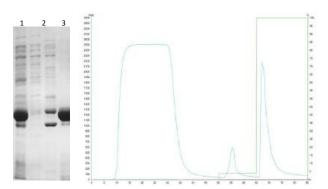
**Equilibrium liquid:** 0.02MPB、0.5MNaC1, pH 7.4

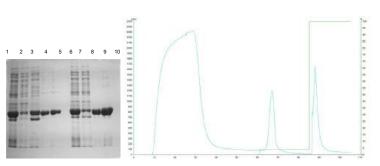
**Elution:** 0.02MPB、0. M NaCl、 Imidazole, pH 7.4

#### Flow Rate: 1ml/min

1. Original; 2. Breakthough; 3. Elution(4%B); 4. Elution(100%B); 5. Elution(100%B); 7. Original; 8. Breakthough; 9. Elution(4%B); 10. Elution(100%B)

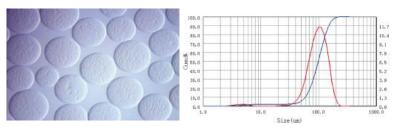
No imidazole in 1-5. 0.02M imidazole in 7-10.





# Ion-exchange Agarose Resin

Biovanix provide agarose based ionexchange media such as SP, Q, ANX, MMA, MMC, CM, DEAE to meet different purification needs.



#### **Strong Cation IEX SP Media**

	SP 6BB	SP 6FF	SP 6HF	SP 6HP	SP 6XL	SP HPR
Substrate	6% cross-linked Agarose		High-rigid Agarose	6% cross- linked Aga- rose	6% cross- linked Aga- rose with glucan	High-rigid Agarose
Particle Size	200μm (165-300μm)	90μm (45-165μm)	90μm (45-165μm)	37μm (25-45μm)	90μm (45-165μm)	37μm (25-45μm)
Ligand	-CH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> SO <sub>3</sub> <sup>-</sup>					
Loading Capacity	180-250µmol H⁺/ml resin		140-200µmol H⁺/ml resin	150-200µmol H <sup>⁺</sup> /ml resin	180-250µmol H <sup>+</sup> /ml resin	130-160µmol H <sup>⁺</sup> /ml resin
pH Stability	4-13 (L 3-14 (S		4-12 (Long) 3-14 (Short)		Long) Short)	4-12 (Long) 3-14 (Short)
Pressure	≤0.3MPa					≤0.5MPa
Flow Rate	1800cm/h	700 cm/h	100 cm/h	150 cm/h	700 cm/h	400 cm/h
Chemical Stability	All common buffer, 1.0m sodium hydroxide, 8.0m urea, 6.0m guanidine hydrochloride, 70% ethanol Avoid using oxidant, cationic detergent, cationic buffer					
Storage	0.2M NaAc, 20% EtOH, 4-30℃					

#### Strong Anion IEX Q Media

	Q 6BB	Q 6FF	Q 6HF	Q 6HP	Q 6XL	Q HPR
Substrate	6% cross-linked Agarose		High-rigid Agarose	6% cross- linked Agarose	6% cross- linked Aga- rose with glucan	High-rigid Agarose
Particle Size	200μm (165-300μm)	90μm (45-165μm)	90μm (45-165μm)	37μm (25-45μm)	90μm (45-165μm)	37μm (25-45μm)
Ligand	-N <sup>+</sup> (CH <sub>3</sub> ) <sub>3</sub>					
Loading Ca- pacity	180-25 Cl⁻/ml		160-200µmol Cl⁻/ml resin	140-200µmol Cl⁻/ml resin	180-250µmol Cl⁻/ml resin	150- 180µmol Cl <sup>-</sup> / ml resin
pH Stability	2-12 (Long Period)         2-12 (Long)         2-12 (Long)           2-14 (Short Period)         2-14 (Short )         2-14 (Short )				2-12 (Long ) 2-14 (Short)	
Pressure	≤0.3MPa ≤0.5MPa					≤0.5MPa
Flow Rate	1800cm/h	700 cm/h	1000 cm/h	150 cm/h	700 cm/h	400 cm/h
Chemical Sta- bility	All common buffer, 1.0m sodium hydroxide, 8.0m urea, 6.0m guanidine hydrochloride, 70% etha- nol Avoid using oxidant, cationic detergent, cationic buffer					
Storage	20% EtOH, 4-30℃					

#### Strong Anion IEX MMA Media

	Substrate	Particle Size	Ligand	Capacity	pH Stability	pH Stability	Flow Rate			
MMA 6HF	High Rigid Agarose	90μm (45-165μm)	Ortrifo	90-120µmol Cl⁻/ml resin	2-14 (Long) 4-12 (Short)	≤0.5 MPa	1000 cm/h			
MMA HPR	High Rigid Agarose	37μm (25-45μm)	Ortello	80-110µmol Cl⁻/ml resin	2-14 (Long) 4-12 (Short)	≤0.5 MPa	400 cm/h			
	nemical tability	All commor	All common buffer, 1.0m NaOH, 8.0m urea, 6.0m guanidine hydrochloride, 70% ethanol Avoid using oxidant, cationic detergent, cationic buffer							
S	torage			20% EtO	H, 4-30℃					

#### Weak Cation IEX CM Media

	CM 6FF	CM 6HF	СМ 6НР	CM 6XL					
Substrate	6% cross-linked Agarose	High-rigid Agarose	6% cross-linked Agarose	6% cross-linked Aga- rose with glucan					
Particle Size	90µm (45-165µm)	90µm (45-165µm)	um) 37μm (25-45μm) 90μm (45-						
Ligand		-O-Cŀ	-O-CH <sub>2</sub> COO <sup>-</sup>						
Capacity	90-130µmol H⁺/ml resin	90-120µmol H⁺/ml resin	80-110µmol H⁺/ml resin	180-250μmol H⁺/ml resin					
pH Stability	4-13 (Long) 2-14 (Short)	4-12 (Long) 3-14 (Short)		3 (Long) I (Short)					
Pressure	≤0.3 MPa	≤0.5MPa	≤0.	3 MPa					
Flow Rate	700 cm/h	1000 cm/h	150 cm/h	700 cm/h					
Chemical Stability		, 1.0m NaOH, 8.0m urea, void using oxidant, cation							
Storage		20% EtC	DH, 4-30℃						

#### Weak Cation IEX MMC Media

	Substrate	Particle Size	Ligand	Capacity	pH Stability	pH Stability	Flow Rate			
MMC 6HF	High Rigid Agarose	90μm (45-165μm)	Olinfo	70-90µmol H⁺/ml resin	2-14 (Long) 3-12 (Short)	≤0.5 MPa	1000 cm/h			
MMC HPR	High Rigid Agarose	37μm (25-45μm)	Oling	60-80µmol H⁺/ml resin	2-14 (Long) 3-12 (Short)	≤0.5 MPa	400 cm/h			
Chemi	ical Stabil- ity	All commor	All common buffer, 1.0m NaOH, 8.0m urea, 6.0m guanidine hydrochloride, 70% ethanol Avoid using oxidant, cationic detergent, cationic buffer							
S	torage			20% EtO	H, 4-30℃					

#### Weak Anion IEX DEAE Media

	DEAE 6FF	DEAE 6HF	DEAE 6HP	DEAE 6XL					
Substrate	6% cross-linked Agarose	High-rigid Agarose	6% cross-linked Agarose	6% cross-linked Agarose					
Particle Size	90µm (45-165µm)	90µm (45-165µm)	37µm (25-45µm)	90µm (45-165µm)					
Ligand	-N⁺(CH₃)₃								
Capacity	110-160µmol Cl⁻/ml resin	290-350µmol Cl <sup>-</sup> /ml resin	90-130µmol Cl <sup>-</sup> /ml resin	110-160µmol Cl <sup>-</sup> /ml resin					
pH Stability	2-13 (Long) 1-14 (Short)	2-12 (Long) 2-14 (Short)		(Long) Short)					
Pressure	≤0.3 MPa	≤0.5MPa	≤0.3	MPa					
Flow Rate	700 cm/h	1000 cm/h	150 cm/h	700 cm/h					
Chemical Stability	All common buffer, 1.0m NaOH, 8.0m urea, 6.0m guanidine hydrochloride, 70% ethanol Avoid using oxidant, cationic detergent, cationic buffer								
Storage		20% EtOH, 4-	-30°C						

#### Weak Anion IEX ANX Media

	Substrate	Particle Size	Ligand	Capacity	pH Stability	pH Stability	Flow Rate				
ANX 4FF	4% cross- linked Aga- rose	90µm (45-165µm)	-N⁺(C₂H₅)₂H	130-170µmol Cl <sup>-</sup> /ml resin	3-10 (Long) 2-14 (Short)	≤0.3 MPa	250 cm/h				
Chem	ical Stability	All common b	All common buffer, 1.0m NaOH, 8.0m urea, 6.0m guanidine hydrochloride, 70% ethanol Avoid using oxidant, cationic detergent, cationic buffer								
	Storage	20% EtOH, 4-30°C									

#### **Moderately Purified Fusion Protein**

Sample: 20ml e. coli lysate Column: BVgel DEAE 6FF 1ml Equilibrium solution: 0.02m Triethanolamine, pI7.5 Eluent: 0.02M Triethanolamine, 1.0M NaCl, pI7.5 Flow Rate: 1 ml / min

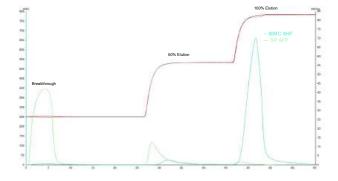
1. Original; 2. Breakthrough; 3. 50% Elution; 4. 100% Elution

# 2 3 4 Breaktrough 5% Eluton

#### MMC 6HF VS. SP 6FF

Column: 1ml

Sample: 25 mg BSA (pl 5.4-5.6) solve in 5ml equilibrium liquid Equilibrium liquid: 0.05 M NaAc, 0.25 M NaCl pH4.75 Eluant: 0.02MPB, 1.0M NaCl pH7.4

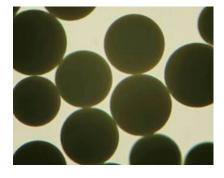


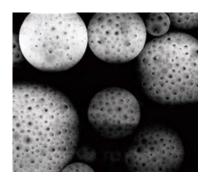
## **PSDVB/PMMA Polymer Microsphere**

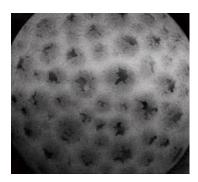
In order to address key issues in the purification of viruses and viral particles, Biovanix has always been bold in its exploration of process technology and product development. Its research and production of supermacroporous ion exchange chromatography media have achieved precise control over the pore size of the chromatography media. Compared to conventional chromatography media, it has better performance in terms of load capacity and processing speed and is more conducive to maintaining the structure of viral vectors and viral-like particles.

#### Advantages

- Large molecules or viral particles can easily enter the pores for binding;
- The load capacity is more than 10 times that of conventional agarose media and twice that of conventional polymer media;
- It can maintain the integrity of the structure of large molecular proteins, obtain- ing high yield and high activity of the target protein;
- After hydrophilic modification of the microsphere surface and the bonding of ion exchange groups, non-specific adsorption is low and the degree of mechaniza- tion is high;
- The molecular mass transfer rate is fast, and better separation can be achieved at higher flow rates.







Product	Poly15 SP	Poly15 Q	Poly30 SP	Poly30 Q							
Matrix	Monodisperse PS-DVB										
Particle Size	15	15um 30um									
Function Group	(-CH2)SO3-	-CH2N+(CH3)3									
Ligand Density	0.22 meq/mL	0.24meq/mL	0.15meq/mL	0.18meq/mL							
Capacity	80mg Lys/mL	45mg BSA/mL	60mg Lys/mL	30mg BSA/mL							
Flow Rate	150~80	)0cm/h	250~10	00cm/h							
Max. Pressure	8.01	МРа	5.01	МРа							
pH Stability		2-	12								
Chemical Stability	id,70% ethanol 30% iso	All commonly used buffers,1M acetic acid,1M sodium oxychloride,1M hydrochloric ac- d,70% ethanol 30% isopropyl alcohol,30% acetoni- trile,1%SDS, 6M guanidine hydrochlo- ride, 8M urea and other commonly used organic solvents; Avoid exposure to strong oxi- dants.									
Usage Temperature		4~30°C									
Storage		2~30°C, 20	2~30°C, 20% ethanol								

Product		Poly	y 50M		Poly 50G				Poly 50V			
Matrix	SP	Q	СМ	DEAE	SP	Q	СМ	DEAE	SP	Q	СМ	DEAE
Function Group		PS	-DVB			PS-E	OVB			PS-I	DVB	
Particle Size		50	)um			50ι	ım			500	um	
Pore Size		100-	150nm			150-30	00nm			300-4	00nm	
Ligand Density	0.15meq/	0.16meq/	0.15meq/	0.16meq/	0.14meq/	0.15meq/	0.14meq/	0.15meq/	0.12meq/	0.13meq/	0.12meq/	0.133meq
Ligand Density	mL	mL	mL	mL	mL	mL	mL	mL	mL	mL	mL	/mL
Capacity	> 80mg	>100m	> 80mg	>90mg	>70mg	>90mg	>70mg	> 65mg	>70mg	> 90mg	> 70mg	>65mg
Capacity	Lys	g BSA	Lys	BSA	Lys	BSA	Lys	BSA	Lys	BSA	Lys	BSA
Flow Rate		300~12	200cm/h		300~1200cm/h				300~1200cm/h			
Max. Pressure		3.0	IMPa			2.0M	1Pa			1.01	МРа	
pH Stability						1-1	2					
Chemical Stability		All commonly used buffers,1M acetic acid,1M sodium oxychloride,1M hydrochloric acid,70% ethanol 30% isopropyl alcohol,30% ace- onitrile,1%SDS, 6M guanidine hydrochloride, 8M urea and other commonly used organic solvents; Avoid exposure to strong oxidants.										
Usage Temperature						4~30	°C					
Storage						2~30°C, 209	% ethanol					

Product		РМ	50S			PM	1 50M			PM 5	0G			РМ	50V	
Matrix	SP	Q	СМ	DEAE	SP	Q	СМ	DEAE	SP	Q	СМ	DEAE	SP	Q	СМ	DEAE
Function Group								PMI	МА							
Particle Size		50um														
Pore Size		100	nm			100-	150nm			150-30	0nm			300 <b>-</b> 4	00nm	
Ligand Density	0.18 meq/mL	0.19 meq/mL	0.20 meq/mL	0.18 meq/mL	0.11 meq/mL	0.17 meq/mL	0.16 meq/mL	0.15 meq/mL	0.11 meq/mL	0.09 meq/mL	0.08 meq/mL	0.09 meq/mL	0.11 .meq/mL	0.09 meq/mL	0.08 meq/mL	0.09 meq/mL
Capacity	>115 mg Lys	>80mg BSA	>105 mg Lys	>80mg BSA	>115 mg Lys	>80mg BSA	>105m g Lys	>80mg BSA	>70mg Lys	>75mg BSA	>70mg Lys	>60mg BSA	>70mg Lys	>75mg BSA	>70mg Lys	>60mg BSA
Flow Rate		50~30	0cm/h			50~3	00cm/h			50~300	cm/h			50~300	)cm/h	
Max. Pressure		1.01	МРа			0.8	3MPa			0.5M	Pa			0.51	4Pa	
pH Stability		2-	12			2	-12			2-1	2			2-	12	
Chemical Stability	All commonly used buffers, 1M acetic acid, 1M sodium oxychloride, 1M hydrochloric acid, 70% ethanol 30% isopropyl alcohol, 30% acetonitrile, 1% SDS, 6M guanidine hydrochloride, 8M urea and other commonly used organic solvents; Avoid exposure to strong oxidants.															
Usage Tem- perature	4~30℃															
Storage								2~30°C, 20	% ethanol							

Product		РМ	705			РМ	70M			PM	70G			PM	I 70V	
Matrix	SP	Q	СМ	DEAE	SP	Q	СМ	DEAE	SP	Q	СМ	DEAE	SP	Q	СМ	DEAE
Function Group								PM	MA							
Particle Size		70um														
Pore Size		100	nm			100-1	150nm			150-3	00nm			300-4	400nm	
Ligand Density	0.18 meq/mL	0.12 meq/mL	0.21 meq/mL	0.15 meq/mL	0.15 meq/mL	0.12 meq/mL	0.22 meq/mL	0.11 meq/mL	0.11 meq/mL	0.12 meq/mL	0.10 meq/mL	0.09 meq/mL	0.11 meq/mL	0.12 meq/mL	0.10 meq/mL	0.09 meq/mL
Capacity	>115 mg Lys	>80mg BSA	>105 mg Lys	>80mg BSA	>115mg Lys	>80mg BSA	>105mg Lys	>80mg BSA	>70mg Lys	>75mg BSA	>70mg Lys	>60mg BSA	>70mg Lys	>75mg BSA	>70mg Lys	>60mg BSA
Flow Rate		150~75	0cm/h			150~7	50cm/h			150~75	0cm/h			150~7	50cm/h	
Max. Pressure		1.01	ИРа			0.8	MPa			0.51	1Pa			0.5	МРа	
pH Stability		2-	12			2-	-12			2-	12			2	-12	
Chemical Stability	All comr	All commonly used buffers, 1M acetic acid, 1M sodium oxychloride, 1M hydrochloric acid, 70% ethanol 30% isopropyl alcohol, 30% acetonitrile, 1%SDS, 6M guanidine hydrochloride, 8M urea and other commonly used organic solvents; Avoid exposure to strong oxidants.														
Usage Temperature		4~30°C														
Storage								2~30℃, 20	)% ethanc	ol						

## **Instruments & Parts**

## **HPLC Column Packer**

Biovanix HPLC Column Packer is designed for packing analysis, semi-preparative and preparative columns, with higher pressure and power, are designed for both analytical and preparative columns with inner diameter 2.0mm~50mm.

Homogenate tanks is suitable for homogenate during the packing process.

#### Service:

- 1. One year warranty
- 2. Free replacement parts
- 3. Free online training for operation and maintenance
- 4. Recovery of old equipment

#### **Parameters:**

	Biovanix HPLC Column Packer
Column ID	2.0/3.0/4.0/4.6/10/20/30/50 mm
Output Pressure	15000 psi
Flow Rate	3.3L/min
Output Power	2hp
Air Cylinder	Double

#### Hardware:

Standard Parts	Optional Parts
Operation instruction	Air compressor
Pneumatic booster pump	Air purification system
Control panel	Homogenate tanks
Homogenate tank support	Column connection (ID 10-50mm)
Stainless steel connections	Empty HPLC column (ID 2.0-50mm)
	Packing materials

#### **Control Panel Introduction**

1 Pressure gauge

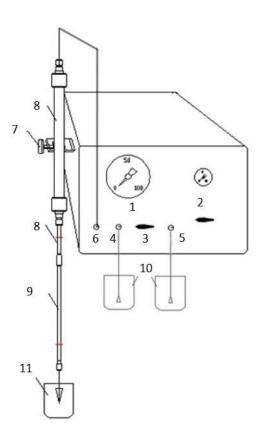
3 Liquid inlet:

- 2 Pressure regulator 10 Solvent tank
  - 11 Waste liquid recov-

ery

9 SS HPLC column

- 4 Inlet A:
- 5 Inlet B:
- 6 Liquid outlets:
- 7 Column support
- 8 Homogenate tank









## High-pressure Precision Plunger Pump

#### **Eldex Optos Injection Pump**

Eldex's Optos Series is designing and manufacturing reciprocating piston pumps for a wide variety of applications, while integrating the latest technology and electronics. With upgrade to Plus Version

- Pressure monitoring with high and low pressure limits
- Integrated low volume pulse damper

	Flow Rate (mL/min)	Max. Pressure (psi)	Piston Diameter (in.)	Piston Stroke (in.)	Model
316 stainless steel	0.002 - 2.5	6000	3/32	.125	1LM
	0.003 - 5	6000	1/8	.125	1SM
	0.01 - 20	3000	1/4	.125	1HM
	Flow Rate (mL/min)	Max. Pressure (psi)	Piston Diameter (in.)	Piston Stroke (in.)	Model
PEEK	0.002 - 2.5	4000	3/32	.125	1LI
	0.003 - 5	4000	1/8	.125	1SI
	0.01 - 20	3000	1/4	.125	1HI

#### Model 1

#### Model 2

	Flow Rate (mL/min)	Max. Pressure (psi)	Piston Diameter (in.)	Piston Stroke (in.)	Model
316 stainless	0.003 - 5	6000	3/32	.250	2LM
steel	0.01 - 10	6000	1/8	.250	2SM
	0.02 - 40	1500	1/4	.250	2HM
	Flow Rate	Max. Pressure	Piston Diameter	Piston Stroke	Model
	(mL/min)	(psi)	(in.)	(in.)	Model
PEEK	0.003 - 5	4000	3/32	.250	2LI
	0.01 - 10	4000	1/8	.250	251
	0.02 - 40	1500	1/4	.250	2HI

#### Model 3

316 stainless	Flow Rate (mL/min)			Piston Stroke (in.)	Model
	0.01 - 10	3000	3/32	.500	3LM
steel	0.01 - 20	1500	1/8	.500	3SM
	0.04 - 80	750	1/4	.500	ЗНМ
PEEK	Flow Rate (mL/min)	Max. Pressure (psi)	Piston Diameter (in.)	Piston Stroke (in.)	Model
	0.01 - 10	3000	3/32	.500	3LI
	0.01 - 20	1500	1/8	.500	351
	0.04 - 80	750	1/4	.500	ЗНІ

#### Optos Plus Model: Minimize Pulsation, Monitor Pressure

Add Plus to your Optos Series pump to integrate a pulse damper to further reduce pulsation and have the ability to monitor pressure and set high and low pressure limits. Plus is available on L and S piston pumps.

	Flow Rate* (mL/min)	Max. Pressure (psi)	Piston Diame- ter (in.)	Piston Stroke (in.)	Model
316 stainless steel	0.002 - 2.5	6000	3/32	.125	1LMP
	0.003 - 5	6000	1/8	.125	1SMP
PEEK	Flow Rate* (mL/min)	Max. Pressure (psi)	Piston Diame- ter (in.)	Piston Stroke (in.)	Model
	0.002 - 2.5	4000	3/32	.125	1LIP
	0.003 - 5	4000	1/8	.125	1SIP







## Single-layer Glass Column

- Pressure-resistant borosilicate glass, visualization and stability
- Supporting foot, adjustable level, convenient for users to use
- Reasonable price, high cost performance
- Reproducibility, excellent column efficiency and reliable results
- Zero dead volume structural connections



Working Temperature	4-40°C
pH Range	1-14
Chemical Stability	Tolerant to salt, acid, alkali, and a small number of organic solvents alcohols, ketones, phenols.
Column Material	Borosilicate glass
Column Head Material	PTFE
Thread-end Material	PEEK
Seal Ring Material	PTFE/EPDM
Tubing Material	1/16&1/8
Connector Material	PEEK 1/16&1/8

	Internal			One-side Adjustable Type		Double-side Adjustable Type		
No.	Diameter (mm)	Length (mm)	Volume (mL)	Bed Height (cm)	Volume (mL)	Bed Height (cm)	Pressure (bar)	
YS16/200	16	200	4-30	2-14.5	0-30	0-14.5	7	
YS16/400	16	400	46-72	22-34.5	17-72	8.5-34.5	7	
YS16/700	16	700	109-136	52-64.5	81-136	38.5-64.5	7	
YS16/1000	16	1000	173-199	82-94.5	144-199	68.5-94.5	7	
YS26/200	26	200	10-73	2-14.5	0-73	0-14.5	7	
YS26/400	26	400	111-174	22-34.5	43-174	8.5-34.5	7	
YS26/700	26	700	263-326	52-64.5	195-326	38.5-64.5	7	
YS26/1000	26	1000	415-479	82-94.5	347-479	68.5-94.5	7	
YS50/200	50	200	19-275	1-14	0-275	0-14	5	
YS50/400	50	400	215-471	11-24	0-471	0-24	5	
YS50/600	50	600	804-1060	41-54	549-1060	28-54	5	
YS50/1000	50	1000	1589-1845	81-94	1334-1845	68-94	5	

## BSXK Double-layer Glass Column

BSXK glass columns are made of borosilicate glass. They allow visual inspection of media bed and exhibit excellent chemical resistance. Column packing can be performed using either a packing reservoir or extra column tube attached with a packing connector. QuickLock of the adapter shaft facilitates rapid and easy movement of the adapter, simplifying adjustments of the bed height and cleaning. Adapter plunger gives a uniform flow which maintains the integrity of the packed bed during operations.



Working Temperature	4-40°C
pH Range	1-14
Chemical Stability	Tolerant to salt, acid, alkali, and a small number of organic solvents alcohols, ketones, phenols.
Column Material	Borosilicate glass
Column Head Material	PTFE
Thread-end Material	PEEK
Seal Ring Material	PTFE/EPDM
<b>Tubing Material</b>	1/16&1/8
<b>Connector Material</b>	PEEK 1/16&1/8
Max. Pressure	5 bar

	Internal	Length	One-side Adj	ustable Type		e Adjustable /pe
No.	Diameter	(mm)	Volume	Bed Height	Volume	Bed Height
	(mm)		(mL)	(cm)	(mL)	(cm)
BSXK10/100	10	100	4-7.5	0-9	0-7	0-8
BSXK10/150	10	150	7.5-12	9-12	4.7-12	5-13
BSXK16/200	16	200	4-30	2-14.5	0-30	0-14.5
BSXK16/400	16	400	46-72	22-34.5	17-72	8.5-34.5
BSXK16/700	16	700	109-136	52-64.5	81-136	38.5-64.5
BSXK16/1000	16	1000	173-199	82-94.5	144-199	68.5-94.5
BSXK26/200	26	200	10-73	2-14.5	0-73	0-14.5
BSXK26/400	26	400	111-174	22-34.5	43-174	8.5-34.5
BSXK26/700	26	700	263-326	54-64.5	195-326	38.5-64.5
BSXK26/1000	26	1000	415-479	82-94.5	347-479	68.5-94.5
BSXK50/200	50	200	19-275	1-14	0-275	0-14
BSXK50/300	50	300	215-471	11-24	0-471	0-24
BSXK50/600	50	600	804-1060	41-54	549-1060	28-54
BSXK50/1000	50	1000	1589-1849	81-94	1334-845	68-94

## Single-layer Fixed Glass Column

HT series chromatographic columns have unique flared cylinder design for more even fluid distribution. The columns are equipped with a unique nozzle instead of the sieve plate, which is especially suitable for solid sample loading and dry sample mixing. It effectively prevents the destruction of the column bed caused by high mobile phase line velocity. HT chromatographic column has a large volume of sample loading. It can be pumped to eliminate the blocking of the



inlet valve interface caused by high concentration of samples.

HT series chromatography columns are suitable for reverse-phase, ion-exchange, gelpermeation and affinity chromatography. Compared with ordinary open glass columns purification time is shortened 2-10 times with higher purification efficiency and less solvent usage. The column tube is convenient to disassemble and wash, which saves time for the researchers.

	Inner diame-	Length	Max.	Silica Resin		<b>Flow Rate</b>
No.	ter	(mm)	Pressure	(40-60um)	Sampling (g)	(mL/min)
	(mm)		(bar)	(g)		
HT10/110	10	110	40	Protective c	olumn, on-colum	
HT-15/310	15	310	40	45	0.45-4.5	5-20
HT-15/460	15	460	40	70	0.7-7.00	5-20
HT-15/920	15	920	40	140	1.4-14.00	5-20
HT26/100	26	100	40	Protective c	olumn, on-colum	nn injector.
HT-26/310	26	310	40	130	1.30-13.00	20-70
HT-26/460	26	460	40	200	2.00-20.00	20-70
HT-26/920	26	920	40	400	4.00-40.00	20-70
HT-36/310	36	310	30	240	2.40-24.00	45-135
HT-36/460	36	460	30	350	3.50-35.00	45-135
HT-36/920	36	920	30	700	7.00-70.00	45-135
HT-49/100	49	100	20	Protective c	olumn, on-colum	nn injector.
HT-49/310	49	310	20	450	4.50-45.00	80-200
HT-49/460	49	460	20	650	6.50-65.00	80-200
HT-49/920	49	920	20	1300	13.00-130.00	80-200
HT-70/310	70	310	10	880	8.80-88.00	170-250
HT-70/460	70	460	10	1300	13.00-130.00	170-250
HT-70/920	70	920	10	2600	26.00-260.00	170-250
HT-100/310	100	310	10	1900	19.00-190.00	200-250
HT-100/460	100	460	10	2750	27.50-275.00	170-250
HT-100/920	100	920	10	5500	55.00-550.00	200-250
HT-150/300	150	300	5	3180	36.50-365.00	500-800
HT-150/600	150	600	5	6360	55.00-550.00	500-800
HT-150/900	150	900	5	9540	110.00-1100.00	500-800

## **Empty HPLC column**

- Inner diameter: 2.1mm, 3.0mm, 4.0mm, 4.6mm, 7.8mm, 10mm, 20mm, 21.2mm, 30mm, 50mm
- Length: 25mm, 30mm, 50mm, 100mm, 150mm, 250mm, 300mm, 500mm
- Material: 316 L stainless steel
- OEM is available
- Original country: China



## **PEEK Column**

- Inner diameter: 2.1mm, 3.0mm, 4.0mm, 4.6mm
- Length: 25mm, 30mm, 50mm, 100mm, 150mm
- Material: PEEK
- OEM is available
- Original country: USA
- Inner diameter: 4.6mm
- Length: 25mm, 30mm, 50mm, 100mm, 150mm
- Material: PEEK
- OEM is available
- Original country: China



## In-filter for HPLC column

#### Type:

10mm 20mm 30mm 50mm



## Chromatography System

- ★ Dual plunger series mode, floating plunger design.
- ★ Advanced pump drive system, higher precision, better stability.
- ★ Electronic pulse compensation technology, multi-point flow correction, ensure accuracy, the range of flow velocity is more accurate, more stable operation and reliable performance, cost-effective
- ★ Open computer control communication protocol, easy third-party software control.

#### Character

- $\bigcirc$  New touch screen design and humanized interface design.
- $\bigcirc$  Multi-point flow correction.
- ◎ Firmware program updated online.
- $\bigcirc$  Power-off protection.
- ◎ LAN connection, stable data transfer.
- $\bigcirc$  Alarm in time and according to set procedures, automatic pump stop.

#### 🕥 🔹 Smart Technology

- © Time-programmed human-machine communication function;
- ◎ Status detection, fault warning, online help.
- $\bigcirc$  Network control to judge failure and provide online solutions.





# Chromatography System

#### **BV10 HPLC System**

By to HPLC System							
Isocratic System		Gradient System					
high-pressure pump, 10ml pump head	1set	high-pressure pump, 10ml pump head	2 set				
Analysis variable dual wavelength UV/VIS detector	1 set	Analysis variable dual wavelength UV/VIS de- tector	1 set				
Flow cell 10ml	1 set	Flow cell 10ml	1 set				
Manual injection valve 7725i	1 set	Manual injection valve 7725i	1 set				
Workstation (SuperDog)	1 set	Workstation (SuperDog)	1 set				
Solvent tank	1 set	Solvent tank	1set				
Tool kits	1 set	Tool kits	1 set				

Optional:

Oscillometric refractive detector (Knauer/Shimadzu, software with digital-to-analogue converter) Evaporative light photodetector (Unimicro, software requires additional digital to analogue converter) Fluorescence detector (Shimadzu, software requires additional analogue-to-digital converter) Autosampler (optional Dutch Spark)

C18 5um 4.6-250mm HPLC column

#### Hardware:

Analytical High Pressure Seals

Analytical Low Pressure Seal Ring

Double pump head analyzing finished plunger 3.175×42

Check valve (Switzerland)

Detector deuterium lamp

#### **BV50 HPLC System**

Isocratic System		Gradient System		
high-pressure pump, 50ml pump head	1set	high-pressure pump, 50ml pump head	2 set	
Analysis variable dual wavelength UV/VIS detector	1 set	Analysis variable dual wavelength UV/VIS de- tector	1 set	
Flow cell 50ml	1 set	Flow cell 50ml	1 set	
Manual injection valve 7725i	1 set	Manual injection valve 7725i	1 set	
Workstation (SuperDog)	1 set	Workstation (SuperDog)	1 set	
Solvent tank	1 set	Solvent tank	1set	
Tool kits	1 set	Tool kits	1 set	

Options:

Oscillometric refractive detector (Knauer/Shimadzu, software with digital-to-analogue converter) Injection loop (1ml/2ml/5ml/10ml)

10-250mm HPLC column (including analytical flow cell, backpressure tube)

20-250mm HPLC column

30-250mm HPLC column

Hardware:

Seal ring 6.35 Plunger 6.35 x 43 Low pressure seal 6.35

Detector deuterium lamp

BV100 HPLC System	BV100 HPLC System							
Isocratic System		Gradient System						
high-pressure pump, 100ml pump head	1 set	high-pressure pump, 100ml pump head	2 set					
Preparative variable dual wavelength UV/	1 set	Preparative variable dual wavelength UV/VIS	1 set					
VIS detector	TSEL	detector	TSEL					
Flow cell 100ml	1 set	Flow cell 100ml	1 set					
Workstation (SuperDog)	1 set	Workstation (SuperDog)	1 set					
Tool kits	1 set	Dynamic mixer	1set					
		Tool kits	1set					

Optional:

Injector pump: High-pressure pump 100ml / High-pressure pump 50ml

Preparation manual injection valve

Injection loop (1ml/2ml/5ml/10ml/20ml)

20-250mm HPLC column

30-250mm HPLC column

50-250mm HPLC column

Hardware:

Seal ring 6.35

Plunger 6.35 x 43

Low pressure seal 6.35

Detector deuterium lamp

#### **BV200 HPLC System**

Isocratic System		Gradient System	
high-pressure pump, 200ml pump head	1 set	high-pressure pump, 200ml pump head	2 set
Preparative variable dual wavelength UV/ VIS detector	1 set	Preparative variable dual wavelength UV/VIS detector	1 set
Flow cell 200ml	1 set	Flow cell 200ml	1 set
Workstation (SuperDog)	1 set	Workstation (SuperDog)	1 set
Tool kits	1 set	Dynamic mixer	1set
		Tool kits	1set

#### Optional:

Injector pump: High-pressure pump 200ml / High-pressure pump 100ml / High-pressure pump 50ml

Preparation manual injection valve

Injection loop (1ml/2ml/5ml/10ml/20ml)

20-250mm HPLC column

30-250mm HPLC column

50-250mm HPLC column

DAC-50 System

DAC-80 System

Hardware:

High pressure seal / Low pressure seal for 200mL pump

200ml one-way valve

Detector deuterium lamp

#### **BV500 HPLC System**

Isocratic System		Gradient System	
high-pressure pump, 500ml pump head	1 set	high-pressure pump, 500ml pump head	2 set
Preparative variable dual wavelength UV/ VIS detector	1 set	Preparative variable dual wavelength UV/VIS detector	1 set
Flow cell 500ml	1 set	Flow cell 500ml	1 set
Workstation (SuperDog)	1 set	Workstation (SuperDog)	1 set
Tool kits	1 set	Dynamic mixer	1set
		Tool kits	1set

#### Optional:

Injector pump: High-pressure pump 500ml / High-pressure pump 200ml / High-pressure pump 100ml Preparation manual injection valve

Injection loop (1ml/2ml/5ml/10ml/20ml)

DAC-100 System

#### Hardware:

High pressure seal / Low pressure seal for 500mL pump 500ml one-way valve Detector deuterium lamp

BV1000 HPLC System			
Isocratic System Gradient System			
high-pressure pump, 1000ml pump head	1 set	high-pressure pump, 1000ml pump head	3 set
Preparative variable dual wavelength UV/ VIS detector	1 set	Preparative variable dual wavelength UV/VIS detector	1 set
Flow cell 1000ml	1 set	Flow cell 1000ml	1 set
Workstation (SuperDog)	1 set	Workstation (SuperDog)	1 set
Three-way ball valve, 6mm I.D. (sample	1 set	Dynamic mixer	1set
Tool kits	1 set	Tool kits	1set
Optional:	1		

Injector pump: High-pressure pump 1000ml / High-pressure pump 500ml / High-pressure pump 200ml Preparation manual injection valve

DAC-100 System

DAC-150 System

Hardware:

High pressure seal / Low pressure seal for 1000mL pumps

1000ml one-way valve Detector deuterium lamp

#### BV3000 HPLC System

Isocratic System		Gradient System		
high-pressure pump, 3000ml pump head	1 set	high-pressure pump, 3000ml pump head	3 set	
Preparative variable dual wavelength UV/ VIS detector	1 set	Preparative variable dual wavelength UV/VIS detector	1 set	
Flow cell 3000ml	1 set	Flow cell 3000ml	1 set	
Workstation (SuperDog)	1 set	Workstation (SuperDog)	1 set	
Tool kits	1 set	Static Mixer	1set	
		Tool kits	1set	

#### Optional:

Injector pump: High-pressure pump 3000ml / High-pressure pump 1000ml / High-pressure pump 500ml

Preparation manual injection valve

DAC-200 System

DAC-300 System

Hardware:

High pressure seal / Low pressure seal for 3000mL pumps

3000ml one-way valve

Detector deuterium lamp

## **Core Components**







# 10-50ml

# Pump





Туре	PUP0010	PUP0010-C	PUP0010-PEEK	PUP0010-PTFE
Pump Material	Stainless Steel 316L	Hastelloy C	PEEK	PTFE
Mode	dual plunger series	dual plunger series	dual plunger series	dual plunger series
Inlet Connector	1/8″	1/8″	1/8″	1/8″
Outlet con- nector	1/16"	1/16"	1/16"	1/16"
Increment	0.001ml / min	0.001ml / min	0.001ml / min	0.001ml / min
Flow rate range	(0 ~ 9.999)mL/min	(0 ~ 9.999)mL/min	(0 ~ 9.999)mL/min	(0 ~ 9.999)mL/min
Max. Pressure	42Mpa	42Mpa	20Mpa	4Mpa
Pulsation	0.5%,at 10Mpa , 1ml/min	0.5%,at 10Mpa , 1ml/min	0.5%, at 10Mpa , 1ml/min	0.5%,at 10Mpa , 1ml/min
Accuracy	±0.15%	±0.15%	±0.5%	±0.5%
Precision (RSD)	0.1%	0.1%	0.1%	0.1%
Control	RS232 or LAN	RS232 or LAN	RS232 or LAN	RS232 or LAN
Display	5.0-inch Touch screen	5.0-inch Touch screen	5.0-inch Touch screen	5.0-inch Touch screen
Power	75W	75W	75W	75W
Dimension (L*W*H)	368*260*140mm	368*260*140mm	368*260*140mm	368*260*140mm
Net Weight	6.9kg	6.9kg	6.9kg	6.9kg





Туре	PUP0050	PUP0050-C	PUP0050-PEEK	PUP0050-PTFE
Pump Material	Stainless Steel 316L	Hastelloy C	PEEK	PTFE
Mode	dual plunger series	dual plunger series	dual plunger series	dual plunger series
Inlet Connector	1/8″	1/8″	1/8″	1/8″
Outlet con- nector	1/16"	1/16"	1/16"	1/16"
Increment	0.001ml / min	0.001ml / min	0.001ml / min	0.001ml / min
Flow rate range	(0~49.999)mL/min	(0~49.999)mL/min	(0~49.999)mL/min	(0~49.999)mL/min
Max. Pressure	30Мра	30Мра	15Мра	4Mpa
Pulsation	0.5%, at 10Mpa	0.5%, at 10Mpa	0.5%, at 10Mpa	0.5%, at 10Mpa
Accuracy	±0.15%	±0.15%	±0.5%	±0.5%
Precision (RSD)	0.1%	0.1%	0.5%	0.5%
Control	RS232 or LAN	RS232 or LAN	RS232 or LAN	RS232 or LAN
Display	5.0-inch Touch screen	5.0-inch Touch screen	5.0-inch Touch screen	5.0-inch Touch screen
Power	150W	150W	150W	150W
Dimension (L*W*H)	368*260*140mm	368*260*140mm	368*260*140mm	368*260*140mm
Net Weight	6.9kg	6.9kg	6.9kg	6.9kg

# 100-3000ml

## Pump



100mL



200mL



# 500mL



1000mL
--------



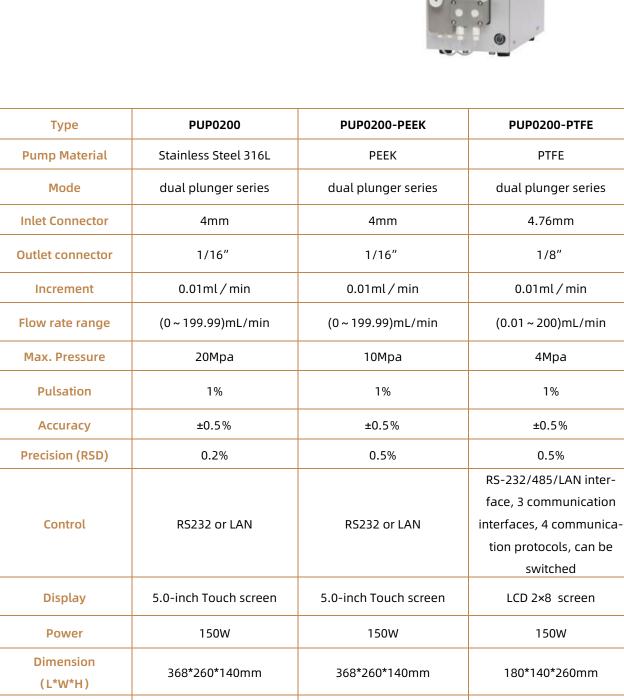
## 3000mL





Туре	PUP0100	PUP0100-PEEK	PUP0100-PTFE
Pump Material	Stainless Steel 316L	PEEK	PTFE
Mode	dual plunger series	dual plunger series	dual plunger series
Inlet Connector	4mm	4mm	4.76mm
Outlet connector	1/16"	1/16″	1/8″
Increment	0.01ml/min	0.01ml/min	0.01ml/min
Flow rate range	(0~99.99)mL/min	(0~99.99)mL/min	(0.01 ~ 100)mL/min
Max. Pressure	25Mpa	10Mpa	4Mpa
Pulsation	1%	1%	1%
Accuracy	±0.5%	±0.5%	±0.5%
Precision (RSD)	0.2%	0.5%	0.5%
Control	RS232 or LAN	RS232 or LAN	RS-232/485/LAN inter- face, 3 communication interfaces, 4 communica- tion protocols, can be switched
Display	5.0-inch Touch screen	5.0-inch Touch screen	LCD 2×8 screen
Power	150W	150W	150W
Dimension (L*W*H)	368*260*140mm	368*260*140mm	180*140*260mm
Net Weight	8.5kg	8.5kg	3.2kg





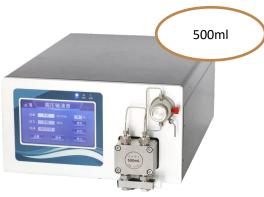
8.5kg

3.2kg

**Net Weight** 

8.5kg





Туре	PUP0500	PUP1000	PUP3000
Pump Material	Stainless Steel 316L	Stainless Steel 316L	Stainless Steel 316L
Mode	dual plunger series	dual plunger series	dual plunger series
Inlet Connector	1/4″	10mm	10mm
Outlet connector	1/8″	1/8″	6mm
Increment	0.01ml / min	0.01ml / min	0.1ml/min
Flow rate range	(0 ~ 499.99)mL/min	(0~999.99)mL/min	(0~2999.9)mL/min
Max. Pressure	15Mpa	15Mpa	10Mpa
Accuracy	±0.5%	±0.5%	±1%
Precision (RSD)	0.3%	0.3%	0.3%
Control	RS232 or LAN	RS232 or LAN	RS232 or LAN
Display	5.6-inch Touch screen	5.6-inch Touch screen	5.6-inch Touch screen
Power	750W	1000W	1500W
Dimension (L*W*H)	488*380*215mm	488*380*215mm	610*460*275mm
Net Weight	27.2kg	27.2kg	73kg

## Variable Dual Wavelength UV/VIS Detector

PUD dual wavelength UV/VIS detectors are an essential part of a high performance liquid phase purification system. The detector is digitized for data processing and control, reducing baseline noise and drift to a new limit. The digital output function allows the detector to be connected directly to a computer via a serial port without the need for a data acquisition unit.

The detector system uses different flow cell units for different flow rates. It is possible to detect the flow directly without diverting the flow.

#### Features

- $\ensuremath{\mathbb O}$  Deuterium lamp with stable signal and high energy output.
- Flow cell selection according to different flow rates, different sizes of flow cells that can be directly detected
- $\ensuremath{\mathbb O}$   $\ensuremath{\mbox{ Built-in digital signal processing and control system}$
- Integrated power supply, make the power supply more stable, suitable for explosion-proof use



© Latest ARM system program control, higher accuracy

Туре	PUD0010	PUD0100 / PUD0200	PUD0500 / PUD1000	PUD3000
Flow Cell	Analysis flow cell, SST or PEEK 10mm optical range	Preparative flow ce	lls, variable optical ran	ge in SST or PEEK
Connector	1/16	1/16 / 1/8 1/8 6mm		
Wavelength Range & Light Source		190-400nm deuterium lamp, 400-700nm tungsten lamp		
Bandwidth		8nr	n	
Wavelength Accuracy	±0.7	±0.75nm ±1nm		n
Wavelength Repeatability	0.2nm 0.3nm			
Baseline Noise (Static)	1*10-5 AU			
Baseline Drift (Static)	1*10-4 AU/h	1*10-4 AU/h	1*10-4 AU/h	1*10-4 AU/h
Detection Range		(0~5	) AU	
Min detection limit	≤4*10 <sup>-9</sup> g/mL	≤4*10 <sup>-8</sup> g/mL	≤4*10 <sup>-7</sup> g/mL	≤4*10 <sup>-5</sup> g/mL
Control Mode	R5232 or LAN			
Display	5.0-inch touch screen			
Size		368*260*140(LWH)		
Wattage		75W		
Weight	6.9kg			

Optical fiber detector and optical fiber flow cells are also available.

Optical fiber detector: 190 - 700 nm, variable dual wavelength UV/VIS detector with fiber optic

	Optical Fiber Detector	Optical Fiber Flow Cells
PUD0010	190 - 700 nm optical fiber detector	10 mm path length, 1/16", 10 μl volume stainless steel
PUD0050	190 - 700 nm optical fiber detector	3 mm path length, 1/16", 2 µl volume
PUD0100	190 - 700 nm optical fiber detector	3 mm path length, 1/16", 2 µl volume
PUD0200	190 - 700 nm optical fiber detector	3 mm path length, 1/16", 2 µl volume
PUD0500	190 - 700 nm optical fiber detector	3 mm path length, 1/8", 1.9 µl volume
PUD1000	190 - 700 nm optical fiber detector	3 mm path length, 1/8", 1.9 μl volume
PUD3000	190 - 700 nm optical fiber detector	2 mm path length, 1/16", 6.28 µl volume

## **Distillate Collector**

Туре	FC200 Distillate Collector
Flow Ranges	0-3000 ml/min
Sample Channel	8 channels
	(1 for waste liquid, 7 for collection)
<b>Collection Method</b>	Time/Peak/Slope
Size (LWH)	488*380*215mm
Control Mode	RS232 or LAN
Power	75W
Weight	10Kg

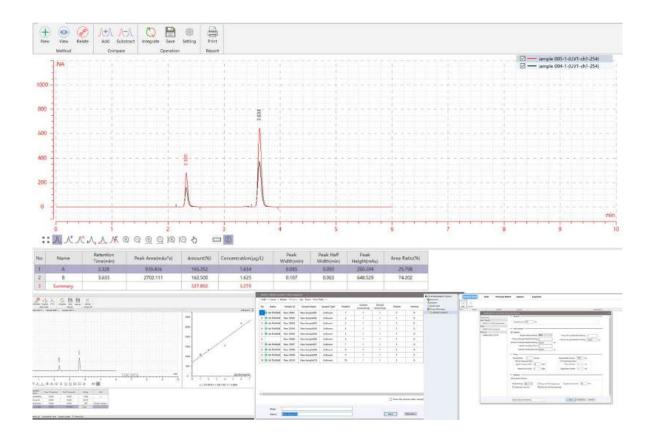


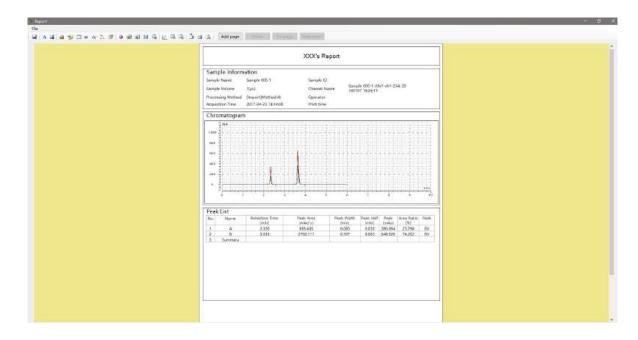
Туре	FC100 Distillate Collector
Flow Ranges	0.001-200 ml/min
Collection Mode	Automatic/Semi-Automatic
Collection	Time/Volume/Slope/Peak
Condition	
Sample Volume	120 positions (Φ15x150mm, 15mL glass test tube)
(1 as standard)	88 position (Φ17x120mm, 15mL centrifuge tube)
(Tas standard)	42 bits (Φ28x115mm, 50mL centrifuge tube)
Control Mode	RS232 or LAN
Size (LWH)	260*240*350 mm (W*H*D)
Power	150W
Weight	7.6kg



# LabChrom Chromatography Software

LabChrom is a chromatographic data analysis software based on the latest architecture and supports database management. Powerful, advanced performance, high stability, integrated instrument control and maintenance, method editing, data analysis, sample management, report editing, user rights management, audit tracking, digital signature, database and other functions. In full compliance with cGMP, FDA 21 CFR Part 11 certification specifications.





## Dynamic Axial Compression Column System

Dynamic axial compression column (DAC) system, is the most mature area of preparative chromatography using the technology of packing column. DAC column maintain their own pressure, discharge packing materials automatically, has the function of high-performance liquid chromatography and column packing column machine. Using DAC system can completely satisfy the continuity of the column bed, uniformity, stability and tightness requirements, eliminate the influence of the column bed collapse. DAC system is widely used in industrial purification process, like peptides purification, natural chemical purification.

- Manufacture with independent design team to meet your different equipment requirements.
- Liquid chromatography resins manufacture. Multiple liquid chromatography resins for different applications.
- Complete technical solution for biochemical isolation and purification.
- Best after-sale service. Installation, training, and spare parts provided.
- Support equipment and complete solution are available.

#### Advantages:

- Using truss grinding in the column tube, increase the service life of the high-pressure sealing ring.
- High-quality screen plate, provide the certificate.
- Large preparative column sieve plate is convenient for loading and unloading with good sealing performance forced distribution.
- The hydraulic cylinder is designed and manufactured by first-class manufacturers with quality guarantee.
- Multiple choices for the material contact with the fluid: 316 Stainless Steel/ PTFE / PEEK.



## ID 50/650

Column Diameter	50mm
Column Length	650mm
Work Pressure	10MPa
Liquid Contact Material	316L/PTFE
Sieve	316L\3um
Sealing Ring	316L (Japan)
Working Temperature	<b>5-60</b> ℃
Size	500*500*1825mm
Distribution Form	Forced Distribution



## ID 80/650

Column Diameter	80mm
Column Length	650mm
Work Pressure	10MPa
Liquid Contact Material	316L/PTFE
Sieve	316L\3um
Sealing Ring	316L (Japan)
Working Temperature	<b>5-60</b> ℃
Size	500*500*1825mm
Distribution Form	Forced Distribution



## ID 100/650

Column Diameter	100mm
Column Length	650mm
Work Pressure	10MPa
Liquid Contact Material	316L/PTFE
Sieve	316L\3um
Sealing Ring	316L (Japan)
Working Temperature	<b>5-60</b> ℃
Size	500*500*1825mm
Distribution Form	Forced Distribution



## ID 150/650

Column Diameter	150mm
Column Length	650mm
Work Pressure	10MPa
Liquid Contact Material	316L/PTFE
Sieve	316L\3um
Sealing Ring	316L (Japan)
Working Temperature	<b>5-60</b> ℃
Size	610*680*2400mm
Distribution Form	Forced Distribution



## ID 200/650

Column Diameter	200mm
	050
Column Length	650mm
Work Pressure	10MPa
Liquid Contact Material	316L/PTFE
Sieve	316L\3um
Sealing Ring	316L (Japan)
Working Temperature	<b>5-60</b> ℃
Size	710*830*2500mm
Distribution Form	Forced Distribution



## ID 300/650

Column Diameter	300mm
Column Length	650mm
Work Pressure	10MPa
Liquid Contact Material	316L/PTFE
Sieve	316L\3um
Sealing Ring	316L (Japan)
Working Temperature	<b>5-60</b> ℃
Size	880*924*2770mm
Distribution Form	Forced Distribution













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