Agela Technologies

PURIFICATION

PRODUCTS

- Prep HPLC Columns
- Claricep™ Flash Columns
- Glass columns
- Bulk Media
- Claricep™ TLC Plates
- CHEETAH™ Flash system

Bonna-Agela Technologies
Best Value
Guaranteed Product Quality
Innovation to Benefit Customers

Bonna-Agela Technologies — A Global Supplier for Chromatography Solutions

2013 Message From Bonna-Agela Technologies

As Bonna-Agela is poised to enter its fifth year with confidence and pride in innovative separation, purification, and sample preparation products, we would like to thank our many loyal customers for your continuous support and trust. With your support and our effort in delivering the highest quality products to you, our company has grown remarkably. This has allowed us to expand our research and development effort, and thus introduce more innovative products to better service your application needs.

In last year, we had tremendous accomplishments: We cataloged over one thousand different products. Our manufacturing and R&D operation were certified in compliance with ISO 9001 and passed many quality audits by customers and distributors, including VWR International. As a global wide company, we not only have our own international sales force but have also formed a marketing alliance with VWR. This will advance us to reach higher goals and to provide our customers with even better quality products and faster service in the new year.

Our mission statement and commitment:

- Products with innovative technologies at the most performance to cost ration
- Guaranteed quality
- Global support with quick response

How to Place Orders

Our office is open from 9:00 am to 6:00 pm Eastern Standard Time, Monday through Friday.

To place an order or receive a quote, you may choose from the following contacts:

Bonna-Agela Technologies US
2038A Telegraph Rd.
Wilmington, DE 19808, USA
Tel: (302) 438 8798
Fax: (302) 636 9339
E-mail: info@bonnaagela.com

Bonna-Agela India
G#212, 2nd Floor, Sector-63, Noida, Uttar Pradesh
Tel: 0120-4225466-71
Fax: 0120-4225465

Bonna-Agela China
179 South Street, Teda West Zone, Tianjin 300462, China
Tel:+86(22)25321032/7023
Fax:+86(22)25321033

Please include the following information with your order or request: Account number (if you have one), purchase order number, contact name, organization name, shipping and billing address, telephone number, fax number or email address, product number, brief description and quantity, method of payment and preferred method of delivery. A written confirmation will be sent to you by email or fax. We accept business checks, wire transfers and major credit cards as methods of payment.

Checks:
Please make checks payable to:
Bonna-Agela Technologies Inc. and send to:
Bonna-Agela Technologies Inc.
2038A Telegraph Road, Wilmington, DE 19808, USA

Wire Transfer:
Please contact us by phone, fax or email for account information.

Credit Cards:
Please include card type and number, expiration date, and card holder name. Due to security concerns, please do not email the information. Please call or send a fax to provide your credit card information.

Terms and Conditions

PLEASE READ THESE TERMS BEFORE ORDERING. IF YOU HAVE ANY QUESTIONS, PLEASE DO NOT HESITATE TO CONTACT US AND OUR STAFF WILL BE GLAD TO ASSIST YOU.

Acceptance and Availability
All orders placed are subject to the agreement of Bonna-Agela Technologies Inc. The catalogue does not constitute an engagement of the company to sell all listed products. You are guaranteed to be notified at the time of ordering if the ordered items are in back-order or discontinued.

Price and Payment
The prices are in effect at the time of printing. Bonna-Agela Technologies reserves the right to change the prices without notice, though we do our best to provide our customers with advance notice. The prices quoted at the time of ordering will be guaranteed. The general payment term is net 30 days, F.O.B., Newark, Delaware,USA. However we reserve the right to ask for prepayment if customers' account information is not satisfactory. A 1.5% per month service charge will be added to delinquent accounts. If a purchase order is less than $1000.00, a $50.00 extra charge will be added to the invoice.

Changes
Bonna-Agela Technologies reserves the right to change product specifications, quantities, designs or prices without prior notice and without liability for such changes.

Shipping Policy
The standard shipping method is 2-day FedEx within the United States and Canada. We will try to accommodate requests for other shipping methods if they are available. All shipping and handling charges will be billed separately. Should you receive damaged goods, it is imperative that you notify us immediately and save all packing materials for inspection by the carrier.

Application
All products in this catalog should be used for laboratory or manufacturing use only. They are not intended for direct medicinal or food use. Bonna-Agela Technologies assumes no liability for any misuse of the products.

Returns
Bonna-Agela Technologies tries to accommodate all requests for returns of unused goods. However, return of some items may be restricted by the original manufacturers. Please contact us for return authorization before returning any items. A restocking charge may apply to certain products.

Warranty
All Bonna-Agela Technologies products are warranted to be free of defects in materials and workmanship. They are not warranted for any other particular purpose. Bonna-Agela Technologies shall not under any circumstance be liable for any incidental, consequential or compensatory damage in conjunction with its products. The maximum liability shall not exceed the invoice price of the product.

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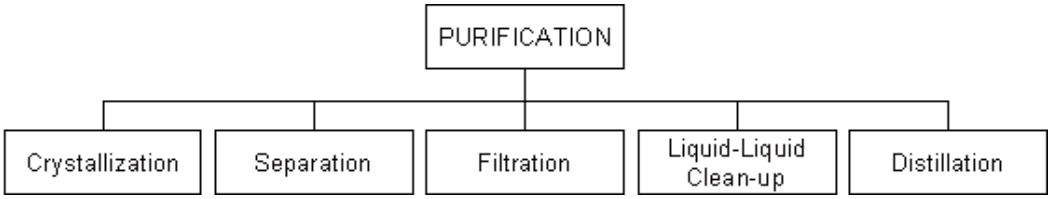
Introduction

Purification of compounds has become crucial and a bottleneck due to the ever-increasing molecular diversity and varsity number of compounds required in drug discovery. In organic synthesis, distillation, re-crystallization, and extraction are all important techniques for the purification of the compounds.



Types of purification techniques

However, these techniques are not sufficient to separate the target compound from the complex matrices and closely related impurities. This is very true in case of purifying natural products. Chromatographic methods are often required to obtain high purity compounds.

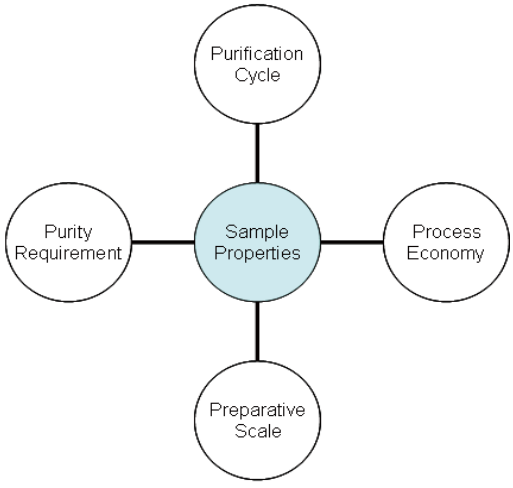
Sample Properties

The properties of sample under separation play a key role to the quality and economy in a purification process. Better understanding of sample properties makes chromatographer's strategy one step ahead in practicing better preparative LC. Sample properties with particular concern in prep LC include the following:

- Solubility
- Concentration of the target component
- Chemical stability
- Matrix complexity
- Sample values

To gain maximum quantity of the target component within acceptable purity requirement is the goal of purification. Sample property is a determining factor in considering a strategic plan of purification with respect to other factors such preparative scale, purity requirement, purification cycle and process economy.

Among these properties, sample solubility is a concern when selecting solvent that will be used in the elution system since it will directly affect the capacity of sample loading and purification throughput. Improper selection of solvents for mobile phase may result in sample precipitation or co-elution in the elution process. On the other hand, low concentration sample as a result of too much dilution will cause volume overloading and the loss of sample resolution from adjacent impurities.



Key factors in a purification process

Preparative HPLC

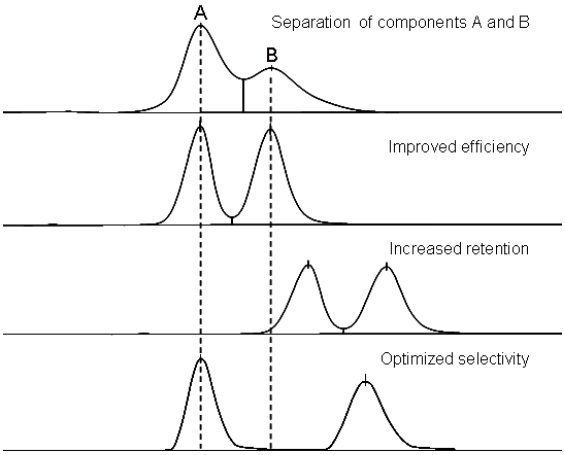
When practicing preparative LC, some fundamental factors need to be taken into consideration. Take the separation of two-component mixture, A and B, for example to illustrated the process.

Resolution (Rs)

The separation of components A and B is described with the following chromatograms. The degree of the separation is defined as Resolution (Rs):

$$Rs = (\frac{\sqrt{N}}{4}) \bullet (\frac{a-1}{a}) \bullet (\frac{k}{k+1})$$

Given a purification system, the length of the retention of a substance, factor k, is affected by the eluting speed of the mobile phase. Sample will be more retarded when it is eluted at a slower speed, but the resolution of components A and B will not be improved. Employing column packed with the same media of smaller particle size will definitely make the separation more efficient, narrower peaks A and B, because of the enhanced column efficiency as the plate count (N) gets higher. Using packing of smaller particle size may become necessary when the of system selectivity (α) is maximized.



Optimizing the separation of components A and B

Selectivity (α)

Maximum resolution of compounds A and B is always desired in LC purification in order to obtain higher sample loading and throughput. The key to increase resolution is to increase selectivity. Selectivity α describes the magnitude of the difference between the relative thermodynamic affinities of analytes A and B to the specified mobile and stationary phase of the purification system. It equals the ratio of compound B's retention factors over compound A's. When k2/k1 = 1, it is co-elution, and no separation is made. The magnitude of selectivity (α) can be used to gauge the degree of difficulty of a separation.

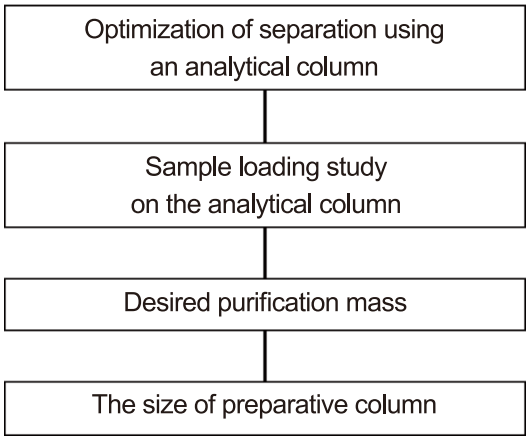
Selectivity and the degree of purification difficulty:

If α ≥ 2, easy separation
If α ≥ 1.5, do-able but may require efficient packing material
If α ≥ 1.3, difficult, efficient packing is required
If α ≤ 1.3, very difficult, requires further optimization of selectivity and method

Selecting an appropriate combination of chemistry of packing media and mobile-phase composition for a purification system is a most effective procedure to maximize resolution. Factors of the choice include changing the mode of chromatography, and alteration of mobile-phase composition and modifiers among a range of solvents. As α is improved, the separation between the peak of interest and the nearest impurity becomes more apart, resulting in higher sample loads with no compromise in product purity. When α is low, small increases in α value will enhance purification speed and throughput significantly. Selecting correct mode of chromatography or switching to a different mode of chromatography plays a key role to optimize a purification process.

Purification Scale Up

The optimization of a separation always starts from a small scale, and then the separation is scaled up to a large column. The process of purification using prep HPLC is described with the following chart.



Scale-up of a purification

In prep-HPLC, optimization of separation is first achieved with an analytical column. When the optimization is finalized, a loading study on the analytical column is followed to determine the capacity of a particular packing media.
When using identical packing material, the degree of the large scale separation should be the same as the small scale separation when the linear velocity of elution is kept the same. Thus the scale-up factor for sample loading can be derived for the prep system from the sample loading study of the analytical system. Certainly, the maximum sample load depends upon the complexity of the sample.
When the loading mass is established, the scale up factor is calculated using the following formula:

$$Scaleup\ Factor = \left(\frac{Diameter\ (Prep)}{Diameter(Analytical)}\right)^2 \bullet \left(\frac{Length(Prep)}{Length(Analytical)}\right)$$

Multiply the loading capacity of the analytical column with the scale-up factor is the predicted loading mass for the preparative column.
Bear in mind that other factors may impact the mass of loading too. Here is a list of factors that also need to be considered:

- Surface chemistry of stationary phase affects loading capacity
- Strongly retained target component has higher mass loading.
- Simple sample mixture has higher loading capacity.
- pH of mobile phase affects loading capacity of basic or acidic compounds.
- Loading capacity compromises when higher resolution is required.
- Volume overloading reduces resolution and purity
- Beware the choice of the solvent used to dissolve sample. Strong dissolving solvents will disrupt elution process and degrade resolution.
- Sample solubility affects loading capacity

Example of scale-up calculation:
When scaling up from an Bonna-Agela XBP C18 4.6x150 mm column to a XBP C18 50x250 mm column, the scale up factor is calculated as following:

$$Scaleup\ Factor = \left(\frac{50}{4.6}\right)^2 \bullet \left(\frac{250}{150}\right) = 197$$

If the loading study finds the mass capacity for the analytical column is 10 mg, then the predicted mass loading for the large column is: 10x197 = 1970 mg.
The linear velocity should be kept the same as that of the analytical column as mentioned earlier when using the preparative column. Thus the flow rate for the prep column is magnified from the analytical elution speed:

$$PrepFlowRate = AnalyticalFlowRate \bullet \left(\frac{Diameter(Prep)}{Diameter(Analytical)}\right)^2$$

However, some consideration is needed for the system hardware since high flow rate will generate considerable system backpressure as the increase of the column length with the use of small-particle-size packing material.

Linear gradient elution is a commonplace in prep chromatography. When scaling up from an analytical column to a preparative column, the duration of gradient needs to be adjusted accordingly with the following calculation if different lengths are used:

$$Prep\ Gradient\ Duration = AnalyticalGradientDuration \bullet \frac{Length(Prep)}{Length\ (Analytical)}$$

Bonna-Agela Preparative HPLC Bulk Media and Columns

Bonna-Agela Technologies have a full line of preparative HPLC columns to meet a variety of application needs for customers.

The preparative columns have the following features:
1. Great scalability
2. Excellent bed stability
3. High loading capacity
4. Broad solvent compatibility, from 100 % aqueous to 100 % organic solvents (Unisol C18, Unisol Amide, and Venusil ASB C18)
5. Broad pH range,1.5-12.0 (Durashell)
6. Unique selectivity (Unisol Amide and Venusil ASB C18)

Unisol Columns and Bulk Media:Unisol C18 and Unisol Amide

Unisol C18

It is one of the most universal phase columns to separate compounds of a wide range of properties from polar to non-polar components.

Characteristics: Single end-cap; Pore Size: 100 Å, 120 Å, Specific Surface Area: 410 m^2/g, 340 m^2/g; Carbon Loading: 18 %,15 %; Available Particle Size: 5 μm, 10 μm; pH: 1.5-9.0

Performance Features:
1. 100 % aqueous compatibility
2. Great inertness and efficiency for basic compounds
3. Wide pH range
4. One of the most universal reversed phase

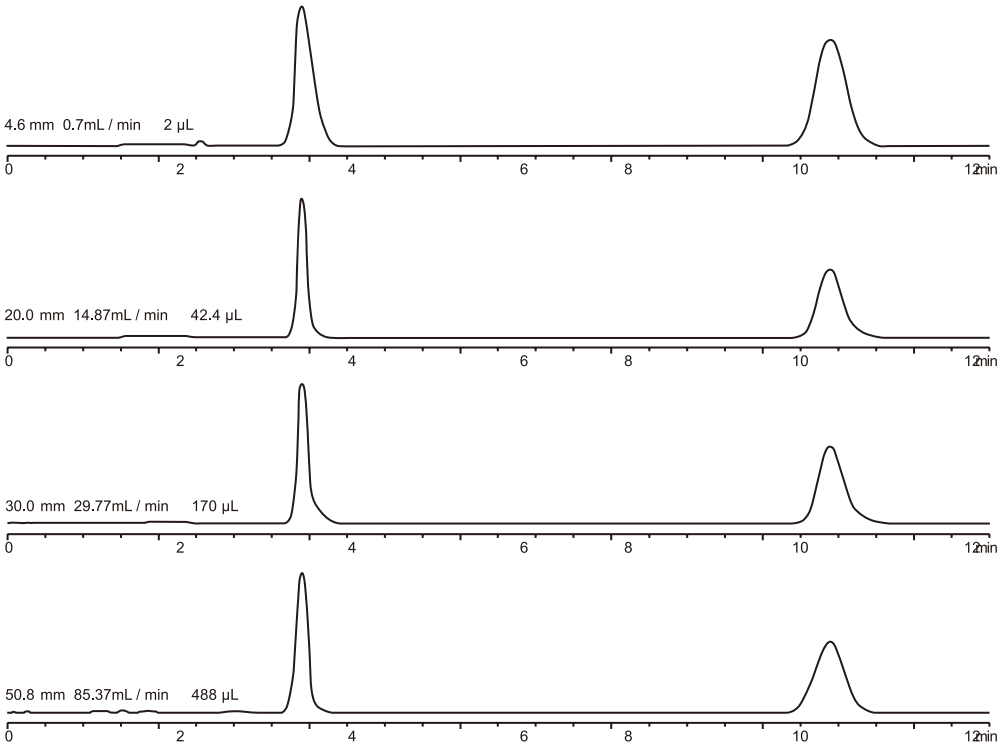
Unisol Amide (HILIC)

Unisol Amide stationary phase is manufactured from high purity spherical silica bonded with a neutral hydrophilic amide group. It can be used as normal phase, reversed phase, or hydrophilic interaction HPLC. It is especially useful for the separation of very hydrophilic compounds, weather they are acidic, basic or neutral. It offers an excellent solution for purifying highly polar compounds.

Characteristics: Pore Size: 100 Å, 120 Å, 150 Å, 300 Å; Spectific Surface Area: 410 m^2/g, 340 m^2/g, 200 m^2/g; 80 m^2/g, Carbon Loading 8 %, 6 %, 5.0 %, 2.5 %; Available Particle Size: 5 μm,10 μm; pH: 2.0-8.0.

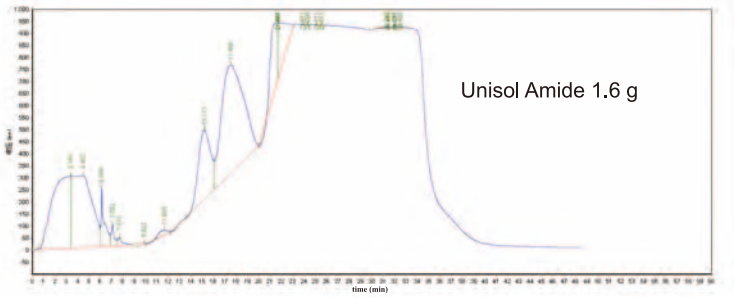
Performance Features:
1. 100 % aqueous and 100 % organic solvents compatibility
2. Strong retention of polar compounds in HILIC mode
3. Very unique selectivity and highly complementary to conventional reversed phase
4. Can be used as reversed phase, normal phase or HILIC phase

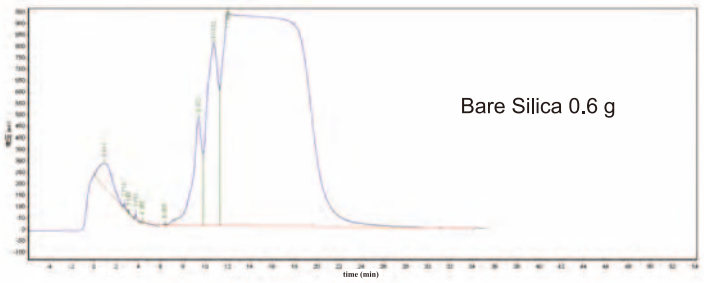
Scalability



Column: Unisol Amide, 4.6x250 mm, 5 μm
Mobile Phase: ACN/Water = 85/15 to 40/60 in 30 min
Detector: UV 210 nm

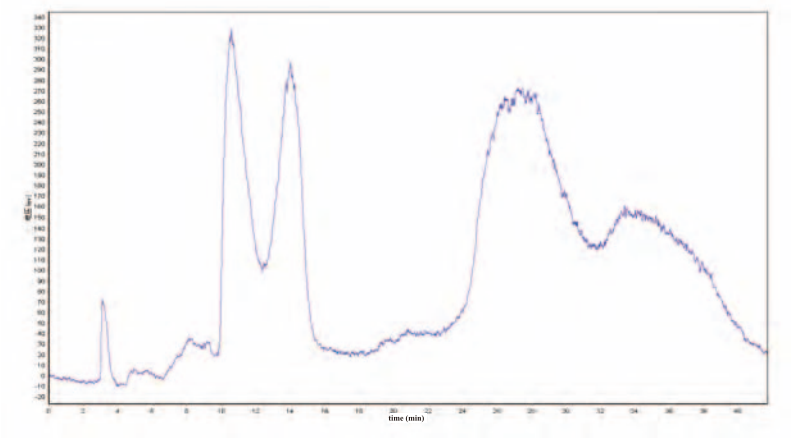
Comparison of Loading and Lifetime





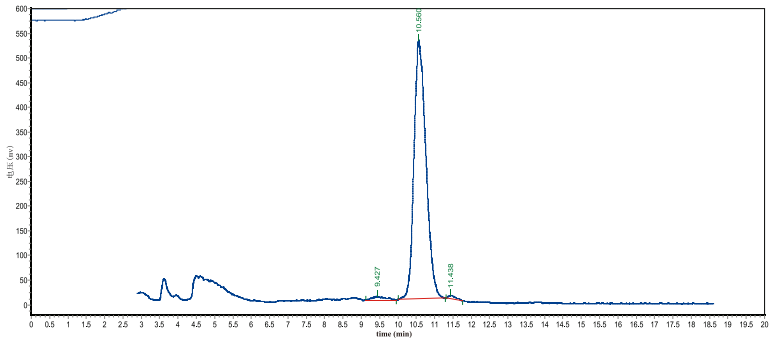
Column: 10μm, 100 Å, 21.2×250 mm;
Mobile Phase: dichloromethane: methanol:water:acetic acid = 80:20:1:3;
Flow Rate: 20 mL/min;
Detection: 276 nm;
Sample: Basic API

Preperation of Polysaccharide



Sample Polysaccharide
Column: Unisol Amide 5 μm 100 Å, 10×250 mm
Mobile phase: A (acetonitrile): B (water) = 80:20
Flow Rate: 5 mL/min
Sample Loading: 200 uL
ELSD: 0.3 mpa, 80 ℃

Isolation of Herba Leonuri



Column: Unisol Amide,
4.6 mm×150 mm, 5 μm.
Detector: ELSD
Flow Rate: 1.0 mL/min
Mobile phase: ACN:0.2%AA=80:20

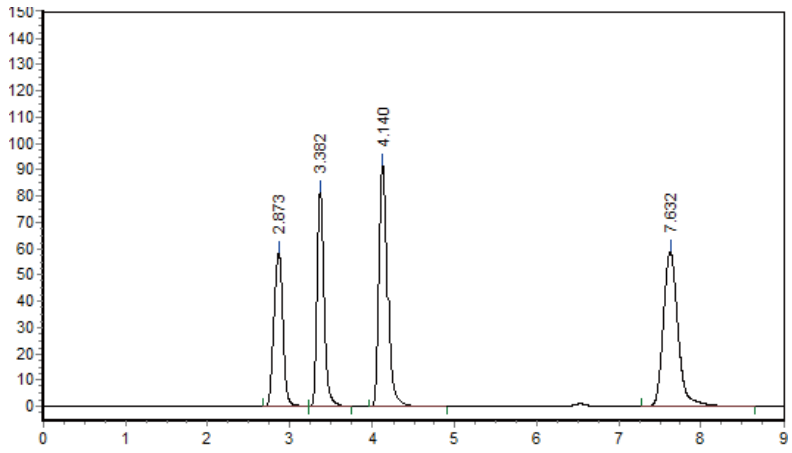
Innoval Columns and Bulk Media

Innoval series preparative columns are packed with double end-capped media bonded with high purity silica, which significantly improves inertness and column lifetime. It delivers equivalent performance of classic brands such as Zorbax and Hypersil. It is opted to separate a broad range of compounds such as polar and nonpolar substances, organic acids and bases.

Characteristics: Pore Size: 100 Å; Available Particle Size: 5 μm, Specific Surface Area: 240 m^2/g.

- High Efficiency and High Resolution
- High Purity Silica
- High Strength
- Unique Bonding Technology
- Good Reproducibility

Balanced Retention for Hydrophilic and Hydrophobic Compounds



Column: Innoval C18, 21.2 mmx150 mm
Sample: Uracil (1) Phenol (2) Nitrobenzene (3) and Naphthalene (4) in mobile phase; 100 μL
Mobile Phase: 15 % Water; 85 % Methanol
Flow Rate: 10 mL/min
Temperature: 30 ℃
Detector: UV 254 nm

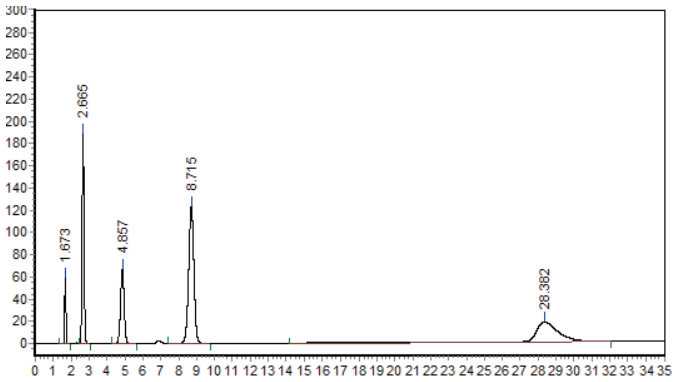
Venusil Columns and Bulk Media: Venusil PrepG C18, Venusil XBP, Venusil ASB and Venusil HLP

Venusil PrepG C18

Venusil PrepG C18 column packing material is processed with Bonna-Agela´s patented surface deactivation technology, followed by a unique bonding process that can reduce the carbon content while maintaining a uniform bonding coverage.

Characteristics: Double end-capped; Pore Size: 120 Å; Spectific Surface Area: 340 m^2/g; Carbon Loading 17 %;
Available Particle Size:10 μm; pH: 1.5-9.0

Performance Features:
1. High loading capacity
2. Much better peak shape, retention and efficiency
3. High resistance to contamination and longer lifetime.

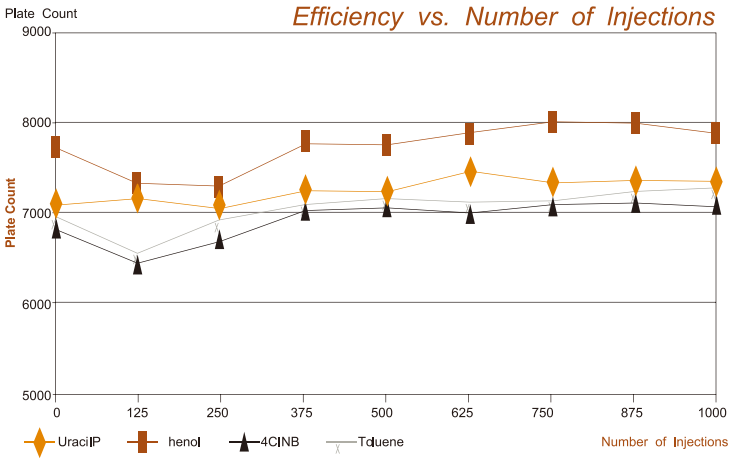


Column: Venusil PrepG C18, 4.6×150 mm, 10 μm
Mobile Phase: 20 mM KH_2PO_4 (pH 7.0):
MeOH=28:72
Flow Rate: 1.0 mL/min
Sample: Uracil, dimethyl phthalate, Butylparaben, naphthalene and amitriptyline
Temperature: 30 ℃

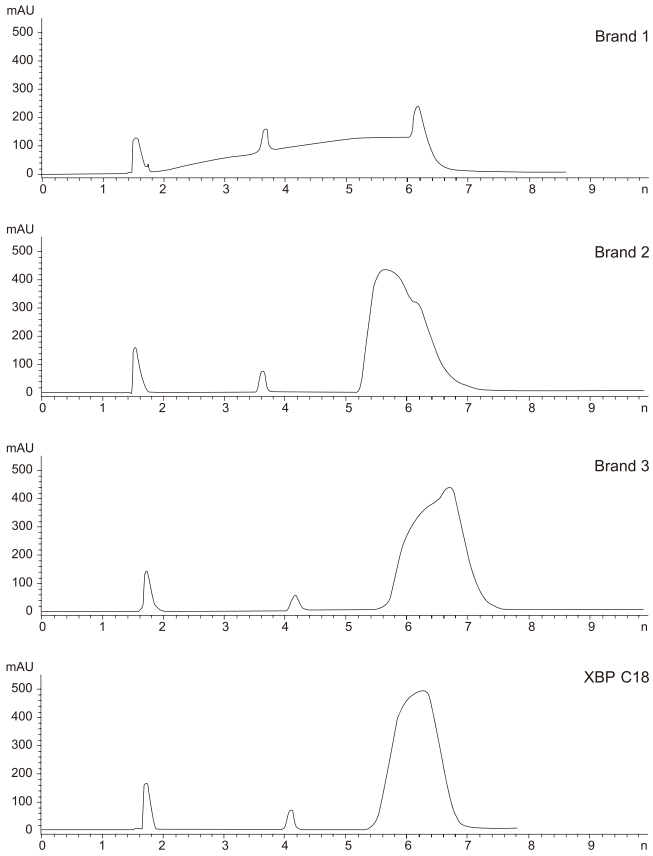
Venusil XBP C18

For Venusil XBP C18 columns, bonding density is maximized, resulting in a reversed phase of higher hydrophobicity, which renders excellent applications at any pH.

Characteristics: Double end-cap; Pore Size: 100 Å, 150 Å, 300 Å; Spectific Surface Area 380 m^2/g, 200 m^2/g, 80 m^2/g; Carbon Loading 22 %,15 %, 8 %; Available Particle Size: 5 μm,10 μm; pH: 1.5-10.0.



Excellent Bed Stability
Venusil XBP C18, 21.2×150 mm,
10μm, >1000 injection



Column: Venusil XBP C18, 21.2×150 mm, 5 μm
Sample: Diphenhydramine, 100 mg/mL in DMSO
Mobile Phase: 10 mm ammonia: ACN=65: 35
Injection: 800 μL

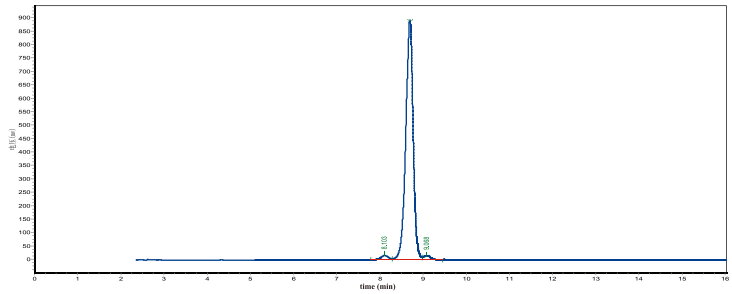
Venusil XBP C18 (2)

Venusil XBP C18 (2) columns are packed with material processed with a patented surface deactivation technology, followed by a unique bonding process that can reduce the carbon content while maintaining a high bonding coverage. Venusil XBP C18 (2) columns do not excessively retain highly hydrophobic compounds, and they are chosen to separate acidic, basic, and neutral compounds.

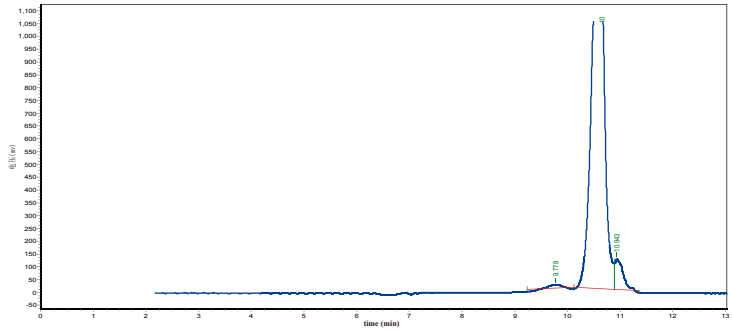
Characteristics: Double end-cap; Pore Size: 100 Å; Specific Surface Area: 380 m^2/g; Carbon Loading: 18 %; Available Particle Size: 5 μm and 10 μm; pH:1.5-9.0.

Besides the C18 packing in the Venusil XBP family, other sorbents for preparative use include C8, C4, C1, NH_2, Phenyl, CN and silica.

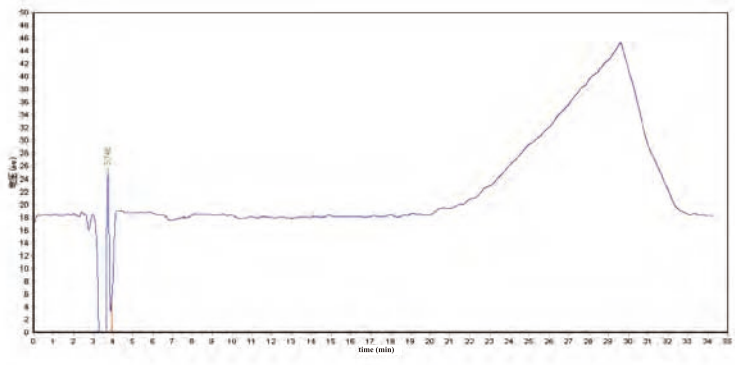
Isolation of Saponins



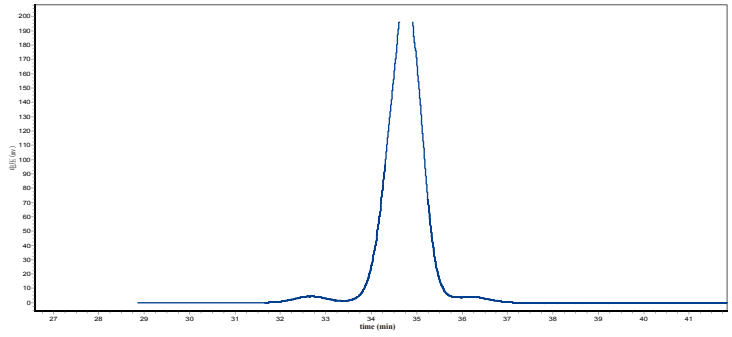
Column: XBP C18 (L), 4.6×250 mm, 5 μm
Sample: Saponins
Mobile Phase: ACN: water=28:72



Column: XBP C18 (L), 10×150 mm, 5 μm
Sample: Saponins
Mobile Phase: ACN: water=28:72

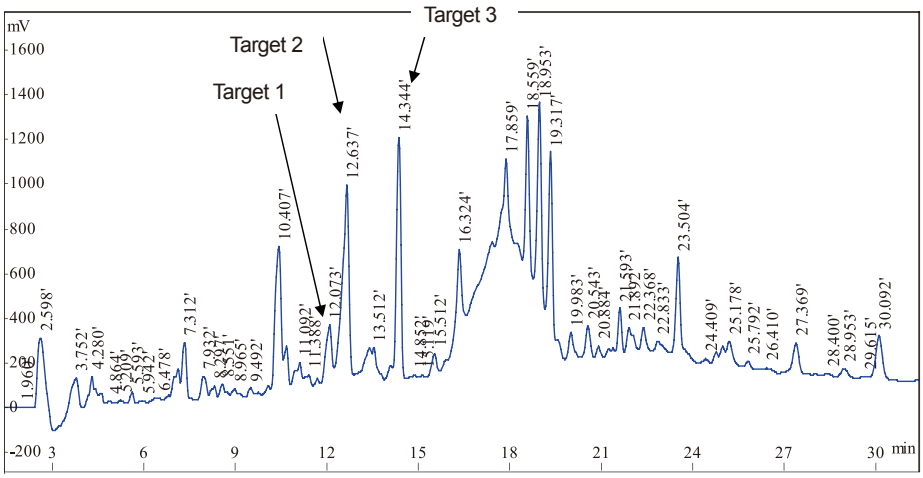


Column: Brand A, 10×150 mm, 5 μm
Sample: Saponins
Mobile Phase: ACN: water=28:72



Column: XBP C18 (L), 10×250 mm, 10 μm
Sample: Saponins
Mobile Phase: ACN: water=22:78

Isolation of Synthetic Isomers



Sample: Synthetic isomers
Column: Venusil XBP C18 10*250 mm 5 μm 100 Å
Mobile Phase: A: 0.1%TFA
B: 0.1% TFA Acetonitrile

Time	B%
0	30
20	80
30	80

Flow Rate: 4 mL/min
Detector: 220 nm
Sample Loading: 100 μL
Column Temperature: room temperature

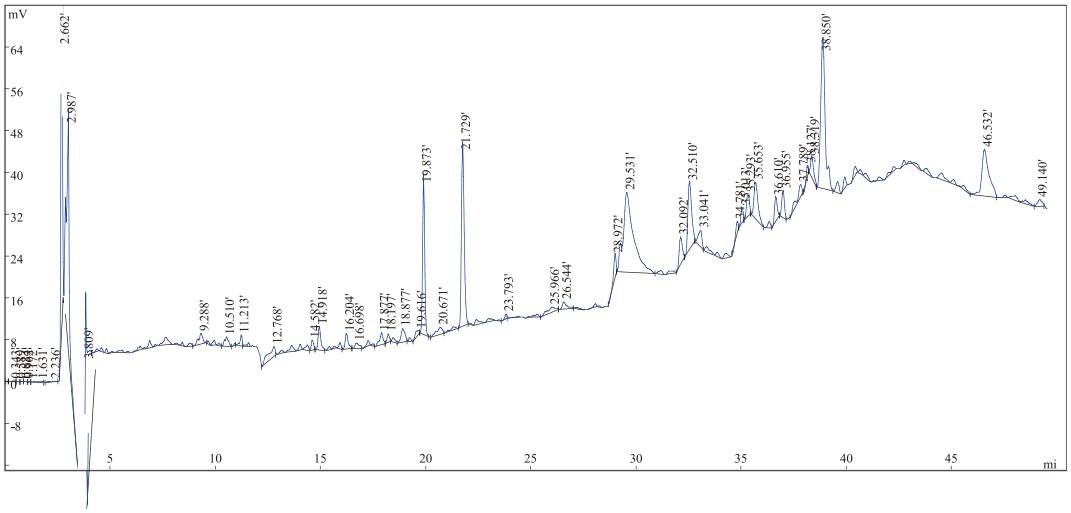
Venusil ASB C18

Specially designed for the separation of polar compounds at low (extremely stable at pH=1.0) to medium pH. The stationary phase is end-capped with polar groups and thus has the highest polarity among all the Venusil C18 series.

Characteristics: Pore Size: 150 Å; Specific Surface Area: 200 m^2/g; Carbon Loading: 12 %; Available Particle Size: 5 μm and 10 μm; pH: 0.8-7.5.

Performance Features:
1. Low pH stability: great stability even at pH=1.0
2. Polar C18 phase: Very strong separation power for polar compounds
3. 100% aqueous compatible: Much better peak shape, retention, and efficiency
4. Five different bonded phases provide broad selectivity

The Preparation of Antibacterial Peptides



Column	Venusil ASB C18 10*250 mm 5 μm 150 Å
Mobile Phase	A: Water+0.02 %TFA
	B: ACN+0.02 %TFA
Gradient	B 5 % (0 min) → 50 % (20 min) → 80 % (40-50 min)
Flow Rate	6 mL/min
Column Temperature	30 ℃
Loading Sample	300 μL
Detection	UV 220 nm

Venusil HLP

They are reversed-phase columns based on Bonna-Agela's embedded polar group technology that end-caps residual silanols. It is a reliable choice to separate highly basic analytes with increased loading capacity.

Characteristics: Pore Size: 100 Å ; Spectific Surface Area: 380 m^2/g; Carbon Loading: 15 %; Available Particle Size: 5 μm,10 μm; pH=2.0-8.0.

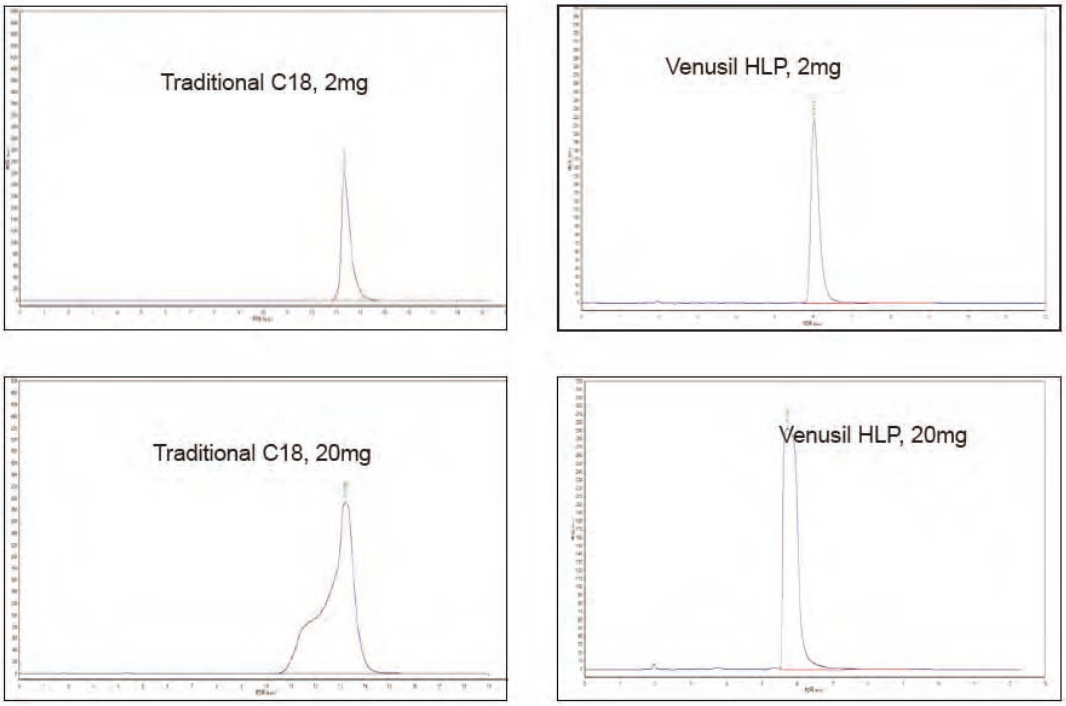
Performance Features:

1.Greatly improved peak shape for basic compounds

2. Enhanced retention and separation for polar compounds and steric isomers

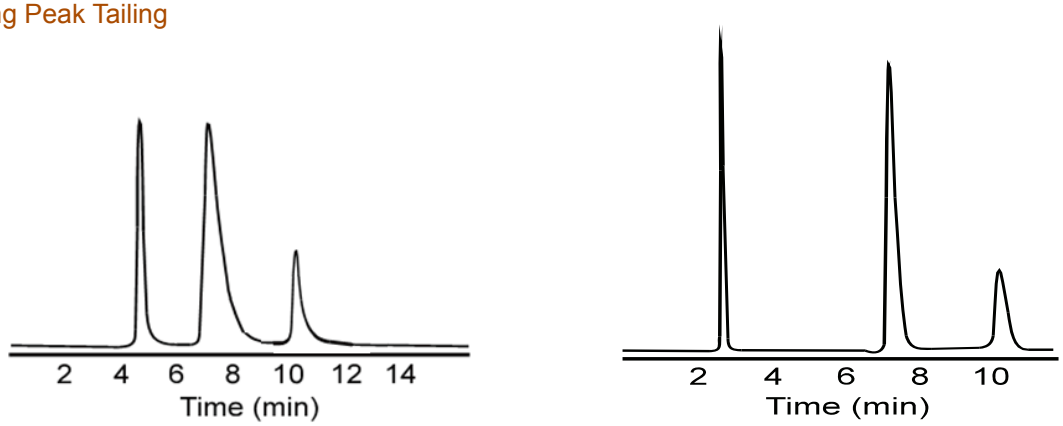
3. High loading capacity for polar compounds for preparative applications

The Separation of Organic Acid



Column: Traditional C18, 5 μm, 100 Å, 21.2×150 mm;
Venusil HLP, 5 μm,100 Å, 21.2×150 mm;
Sample: Amitriptyline; Mobile Phase: MeOH:0.1 % Formic acid=80:20;
Flow Rate: 20 mL/min; UV Detection: 254 nm;
Temperature: ambient.

Minimizing Peak Tailing



Regular C18

Venusil HLP

Durashell Columns and Bulk Media

Durashell

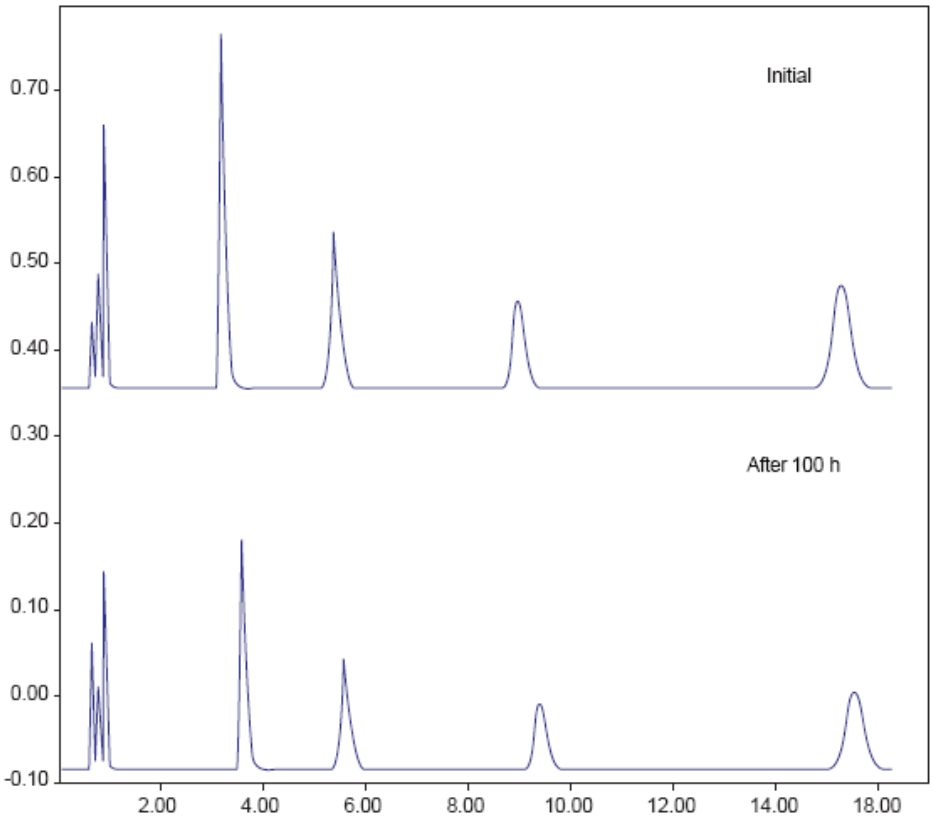
High pH tolerance of the packing enables the use of mobile phase at high pHs, which results in great improvement of peak shape and sample loading for basic compounds.

Characteristics Durashell C18: Pore Size100 Å, 150 Å; Spectific Surface Area 380 m^2/g, 200 m^2/g; Carbon Loading 21 %, 12 %; Available Particle Size: 5 μm,10 μm; pH 1.5-12.0.

Durashell RP: Pore Size 150 Å; Spectific Surface Area 200 m^2/g; Carbon Loading 15 %; Available Particle Size: 5 μm,10 μm; pH 1.5-12.0.

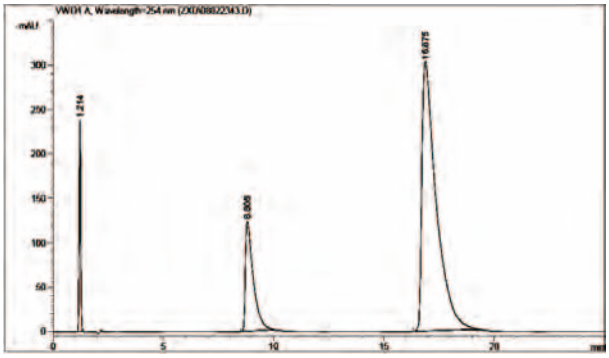
Performance Features:
1. Wide pH range (1.5-12.0)
2. Minimal silanol activity
3. Better efficiency than many other high pH compatible columns
4. High loading capacity for basic compounds for preparative applications

High pH Stability

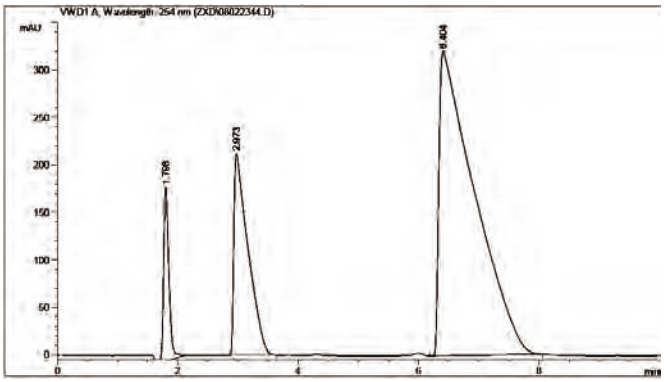


Column: Durashell C18; 4.6x150 mm
Mobile Phase: 50 % ACN / 50 % 0.05 M Ammonia (pH=9.0)
Flow Rate: 1.5 mL/min
Sample: doxepin, nortriptyline, amitriptyline, trimipramine
Temperature: 35 ℃

High Loading Capacity of Basic Compounds at High pH
(Propranolol+Trimpramine; 1mg/mL total)



Durashell C18; MeOH:1 % ammonia=70:30; 1.0 mL/min;
254 nm; 30 ℃ ; 20 μL; 7 μm; 4.6×150 mm.



Conventional C18; MeOH:1 % fomic acid= 60:40; 1.0 ml/min;
254 nm; 30 ℃ ; 20 μL; 7 μm; 4.6×150 mm.

Chiral Columns and Bulk Media: Venusil CA, Venusil CO, Venusil CJ and Chiral Amide-1

Polysaccharides Based Column

Normal phase chiral columns from Bonna-Agela Technologies are based on modified celluloses and starches. They represent the most effective method to analyze chiral compounds and to purify enantiomers.

Main Features:
1. Multiple interactions of mechanism: hydrogen-bonding, pi-pi and the orientation of 'embedded' composite.
2. Venusil CA and Venusil CO columns are available for 80 % chiral compounds.
3. broad selectivity and high loading capacity.

Characteristics: Pore Size 1000 Å; Available Particle Size: 5 μm, 10 μm, 20 μm.

Venusil CA

Overlayed Radical:
Amylose - (3,5 - dimethylphenyl carbamate)
Applicable to separate compounds of the following functionalities:
Amide, Aromatic, carbonyl-group, nitro-group, sulfonyl-group, cyano-group, hydroxide radical, amine and carboxylic acid compounds

Venusil CO

Overlayed Radical:
Cellulose - (3,5-dimethylphenyl carbamate)
Applicability:
A phase suitable for the separation of β-blocker class and steroids, such as DHA, atenolol, flavanones, metoprolol, etc.

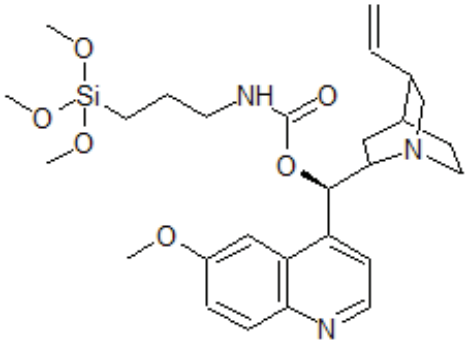
Venusil CJ

Overlayed Radical:
Cellulose - [4 - methyl benzoate]
Applicability:
The Venusil CJ column is used for the separation of carbonyl, amido, aryl, nitro, cyano ,sulfonyl, hydroxyl, amine and carboxylic acid compounds.

Chemical Bonded Column

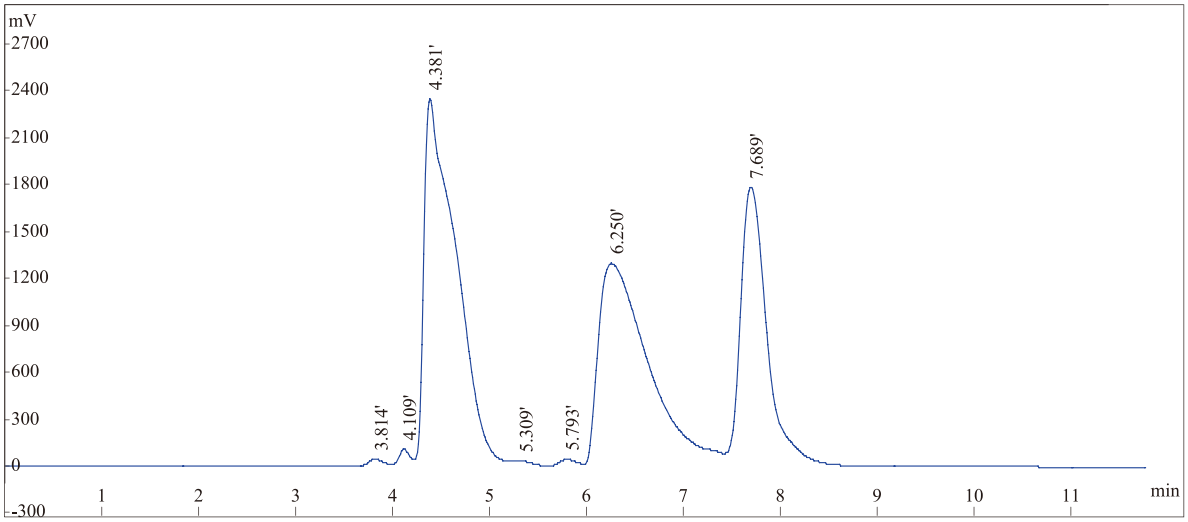
Chiral Amide-1

Chiral Amide-1 is packed with 5 μm 300 Å silica bonding with a chiral compound whose structure is demonstrated as below:



Consider this column as the first option to separate amide chiral compounds:
1. Can be used as reversed phase and normal phase
2. Unique selectivity and high efficiency
3. More stable and longer column lifetime

The Preparation of Small Chiral Molecules



Column: Venusil CO 5 μm 1000 Å 10*250 mm
Mobile phase: hexane: isopropanol = 8:2
Column Temperature: 25 ℃
Wavelength: 215 nm
Flow Rate: 3 mL/min
Sample Loading: 150 μL

Analytical/Preparative HPLC Comparison

Analytical	Preparative
Purpose	Purpose
Information about the composition	Obtain pure components
Interested in most or all components	Interested in one or a few components
Characteristics	Characteristics
Small injection	Large injection
Reverse phase preferred	Normal phase may be preferred
1~5mm internal diameter	1~10cm internal diameter
2~5μm packing materials	>5μm packing materials
HPLC pump <10mL/min	HPLC pump ≥ 10mL/min
Injection usually trouble free	May have difficulties for sample injection
Maximize detection sensitivity	Minimize detection sensitivity
Sample solubility less important	Sample solubility very important
Mobile phase volatility less important	Mobile phase volatility very important; no-volatile additiveis prohibited.

Columns Ordering Information

Average Pore Size: 100 Å

Type	Dimension (mm)	Particle (μm)	Venusil XBP C18	Venusil XBP Silica	Venusil XBP C8	Venusil XBP NH_2	Venusil XBP CN
Semi-preparative	10×150	5	VX951510-0	VSi951510-0	VX851510-0	VN851510-0	VC951510-0
Semi-preparative	10×250	5	VX952510-0	VSi952510-0	VX852510-0	VN852510-0	VC952510-0
Preparative	21.2×50	5	VX950520-0	VSi950520-0	VX850520-0	VN850520-0	VC950520-0
Preparative	21.2×150	5	VX951520-0	VSi951520-0	VX851520-0	VN851520-0	VC951520-0
Preparative	21.2×250	5	VX952520-0	VSi952520-0	VX852520-0	VN852520-0	VC952520-0
Preparative	30×100	5	VX951030-0	VSi951030-0	VX851030-0	VN851030-0	VC951030-0
Preparative	30×150	5	VX951530-0	VSi951530-0	VX851530-0	VN851530-0	VC951530-0
Preparative	30×250	5	VX952530-0	VSi952530-0	VX852530-0	VN852530-0	VC952530-0
Guard cartridge	21.2×10	5	VX950120-0	VSi950120-0	VX850120-0	VN850120-0	VC950120-0
Semi-preparative	10×150	10	VX901510-0	VSi901510-0	VX801510-0		
Semi-preparative	10×250	10	VX902510-0	VSi902510-0	VX802510-0		
Preparative	21.2×50	10	VX900520-0	VSi900520-0	VX800520-0		
Preparative	21.2×150	10	VX901520-0	VSi901520-0	VX801520-0		
Preparative	21.2×250	10	VX902520-0	VSi902520-0	VX802520-0		
Preparative	30×100	10	VX901030-0	VSi901030-0	VX801030-0		
Preparative	30×150	10	VX901530-0	VSi901530-0	VX801530-0		
Preparative	30×250	10	VX902530-0	VSi902530-0	VX802530-0		
Preparative	50×150	10	VX901550-0	VSi901550-0	VX801550-0		
Preparative	50×250	10	VX902550-0	VSi902550-0	VX802550-0		
Guard cartridge	21.2×10	10	VX900120-0	VSi900120-0	VX800120-0		

Type	Dimension (mm)	Particle (μm)	Unisol Amide	Unisol C18	Durashell C18
Semi-preparative	10×150	5	VH951510-0	UO951510-0	DC951510-0
Semi-preparative	10×250	5	VH952510-0	UO952510-0	DC952510-0
Preparative	21.2×50	5	VH950520-0	UO950520-0	DC950520-0
Preparative	21.2×150	5	VH951520-0	UO951520-0	DC951520-0
Preparative	21.2×250	5	VH952520-0	UO952520-0	DC952520-0
Preparative	30×100	5	VH951030-0	UO951030-0	DC951030-0
Preparative	30×150	5	VH951530-0	UO951530-0	DC951530-0
Preparative	30×250	5	VH952530-0	UO952530-0	DC952530-0
Guard cartridge	21.2×10	5	VH950120-0	UO950120-0	DC950120-0
Semi-preparative	10×150	10	VH901510-0	UO901510-0	DC901510-0
Semi-preparative	10×250	10	VH902510-0	UO902510-0	DC902510-0
Preparative	21.2×50	10	VH900520-0	UO900520-0	DC900520-0
Preparative	21.2×150	10	VH901520-0	UO901520-0	DC901520-0
Preparative	21.2×250	10	VH902520-0	UO902520-0	DC902520-0
Preparative	30×100	10	VH901030-0	UO901030-0	DC901030-0
Preparative	30×150	10	VH901530-0	UO901530-0	DC901530-0
Preparative	30×250	10	VH902530-0	UO902530-0	DC902530-0
Preparative	50×150	10	VH901550-0	UO901550-0	DC901550-0
Preparative	50×250	10	VH902550-0	UO902550-0	DC902550-0
Guard cartridge	21.2×10	10	VH900120-0	UO900120-0	DC900120-0

Average Pore Size: 120 Å

Type	Dimension (mm)	Particle (μm)	Venusil PrepG C18	Venusil XBP C18(2)	Venusil XBP C4	Venusil XBP Silica CM
Semi-preparative	10×150	10	VX901510-A	VX901510-2A	VX401510-A	VSi901510-MA
Semi-preparative	10×250	10	VX902510-A	VX902510-2A	VX402510-A	VSi902510-MA
Preparative	21.2×50	10	VX900520-A	VX900520-2A	VX400520-A	VSi900520-MA
Preparative	21.2×150	10	VX901520-A	VX901520-2A	VX401520-A	VSi901520-MA
Preparative	21.2×250	10	VX902520-A	VX902520-2A	VX402520-A	VSi902520-MA
Preparative	30×100	10	VX901030-A	VX901030-2A	VX401030-A	VSi901030-MA
Preparative	30×150	10	VX901530-A	VX901530-2A	VX401530-A	VSi901530-MA
Preparative	30×250	10	VX902530-A	VX902530-2A	VX402530-A	VSi902530-MA
Preparative	50×150	10	VX901550-A	VX901550-2A	VX401550-A	VSi901550-MA
Preparative	50×250	10	VX902550-A	VX902550-2A	VX402550-A	VSi902550-MA
Guard cartridge	21.2×10	10	VX900120-A	VX900120-2A	VX400120-A	VSi900120-MA

Type	Dimension (mm)	Particle (μm)	Unisol Amide	Venusil HLP	Unisol C18
Semi-preparative	10×150	10	VH901510-A	VHL901510-A	UO901510-A
Semi-preparative	10×250	10	VH902510-A	VHL902510-A	UO902510-A
Preparative	21.2×50	10	VH900520-A	VHL900520-A	UO900520-A
Preparative	21.2×150	10	VH901520-A	VHL901520-A	UO901520-A
Preparative	21.2×250	10	VH902520-A	VHL902520-A	UO902520-A
Preparative	30×100	10	VH901030-A	VHL901030-A	UO901030-A
Preparative	30×150	10	VH901530-A	VHL901530-A	UO901530-A
Preparative	30×250	10	VH902530-A	VHL902530-A	UO902530-A
Preparative	50×150	10	VH901550-A	VHL901550-A	UO901550-A
Preparative	50×250	10	VH902550-A	VHL902550-A	UO902550-A
Guard cartridge	21.2×10	10	VH900120-A	VHL900120-A	UO900120-A

Average Pore Size: 150 Å

Type	Dimension (mm)	Particle (μm)	Venusil ASB C18	Venusil ASB C8	Venusil XBP Silica	Venusil XBP C18	Durashell RP	Durashell C18(L)
Semi-preparative	10×150	5	VS951510-0	VS851510-0	VSi951510-L	VX951510-L	DS951510-0	DC951510-L
Semi-preparative	10×250	5	VS952510-0	VS852510-0	VSi952510-L	VX952510-L	DS952510-0	DC952510-L
Preparative	21.2×50	5	VS950520-0	VS850520-0	VSi950520-L	VX950520-L	DS950520-0	DC950520-L
Preparative	21.2×150	5	VS951520-0	VS851520-0	VSi951520-L	VX951520-L	DS951520-0	DC951520-L
Preparative	21.2×250	5	VS952520-0	VS852520-0	VSi952520-L	VX952520-L	DS952520-0	DC952520-L
Preparative	30×100	5	VS951030-0	VS851030-0	VSi951030-L	VX951030-L	DS951030-0	DC951030-L
Preparative	30×150	5	VS951530-0	VS851530-0	VSi951530-L	VX951530-L	DS951530-0	DC951530-L
Preparative	30×250	5	VS952530-0	VS852530-0	VSi952530-L	VX952530-L	DS952530-0	DC952530-L
Guard cartridge	21.2×10	5	VS950120-0	VS850120-0	VSi950120-L	VX950120-L	DS950120-0	DC950120-L
Semi-preparative	10×150	10	VS901510-0	VS801510-0	VSi901510-L	VX901510-L	DS901510-0	DC901510-L
Semi-preparative	10×250	10	VS902510-0	VS802510-0	VSi902510-L	VX902510-L	DS902510-0	DC902510-L
Preparative	21.2×50	10	VS900520-0	VS800520-0	VSi900520-L	VX900520-L	DS900520-0	DC900520-L
Preparative	21.2×150	10	VS901520-0	VS801520-0	VSi901520-L	VX901520-L	DS901520-0	DC901520-L
Preparative	21.2×250	10	VS902520-0	VS802520-0	VSi902520-L	VX902520-L	DS902520-0	DC902520-L
Preparative	30×100	10	VS901030-0	VS801030-0	VSi901030-L	VX901030-L	DS901030-0	DC901030-L
Preparative	30×150	10	VS901530-0	VS801530-0	VSi901530-L	VX901530-L	DS901530-0	DC901530-L
Preparative	30×250	10	VS902530-0	VS802530-0	VSi902530-L	VX902530-L	DS902530-0	DC902530-L
Preparative	50×150	10	VS901550-0	VS801550-0	VSi901550-L	VX901550-L	DS901550-0	DC901550-L
Preparative	50×250	10	VS902550-0	VS802550-0	VSi902550-L	VX902550-L	DS902550-0	DC902550-L
Guard cartridge	21.2×10	10	VS900120-0	VS800120-0	VSi900120-L	VX900120-L	DS900120-0	DC900120-L

Average Pore Size: 300 Å

Type	Dimension (mm)	Particle (μm)	Venusil ASB C18	Venusil ASB C8	Unisol Amide	Venusil XBP C18	Venusl XBP C8
Semi-preparative	10×150	5	VS951510-T	VS851510-T	VH951510-T	VX951510-T	VX851510-T
Semi-preparative	10×250	5	VS952510-T	VS852510-T	VH952510-T	VX952510-T	VX852510-T
Preparative	21.2×50	5	VS950520-T	VS850520-T	VH950520-T	VX950520-T	VX850520-T
Preparative	21.2×150	5	VS951520-T	VS851520-T	VH951520-T	VX951520-T	VX851520-T
Preparative	21.2×250	5	VS952520-T	VS852520-T	VH952520-T	VX952520-T	VX852520-T
Preparative	30×100	5	VS951030-T	VS851030-T	VH951030-T	VX951030-T	VX851030-T
Preparative	30×150	5	VS951530-T	VS851530-T	VH951530-T	VX951530-T	VX851530-T
Preparative	30×250	5	VS952530-T	VS852530-T	VH952530-T	VX952530-T	VX852530-T
Guard cartridge	21.2×10	5	VS950120-T	VS850120-T	VH950120-T	VX950120-T	VX850120-T
Semi-preparative	10×150	10	VS901510-T	VS801510-T	VH901510-T	VX901510-T	VX801510-T
Semi-preparative	10×250	10	VS902510-T	VS802510-T	VH902510-T	VX902510-T	VX802510-T
Preparative	21.2×50	10	VS900520-T	VS800520-T	VH900520-T	VX900520-T	VX800520-T
Preparative	21.2×150	10	VS901520-T	VS801520-T	VH901520-T	VX901520-T	VX801520-T
Preparative	21.2×250	10	VS902520-T	VS802520-T	VH902520-T	VX902520-T	VX802520-T
Preparative	30×100	10	VS901030-T	VS801030-T	VH901030-T	VX901030-T	VX801030-T
Preparative	30×150	10	VS901530-T	VS801530-T	VH901530-T	VX901530-T	VX801530-T
Preparative	30×250	10	VS902530-T	VS802530-T	VH902530-T	VX902530-T	VX802530-T
Preparative	50×150	10	VS901550-T	VS801550-T	VH901550-T	VX901550-T	VX801550-T
Preparative	50×250	10	VS902550-T	VS802550-T	VH902550-T	VX902550-T	VX802550-T
Guard cartridge	21.2×10	10	VS900120-T	VS800120-T	VH900120-T	VX900120-T	VX800120-T

Type	Dimension (mm)	Particle (μm)	Venusil XBP Phenyl	Venusil XBP C4	Venusil XBP C1
Semi-preparative	10×150	5	VX651510-T	VX451510-T	VX151510-T
Semi-preparative	10×250	5	VX652510-T	VX452510-T	VX152510-T
Preparative	21.2×50	5	VX650520-T	VX450520-T	VX150520-T
Preparative	21.2×150	5	VX651520-T	VX451520-T	VX151520-T
Preparative	21.2×250	5	VX652520-T	VX452520-T	VX152520-T
Preparative	30×100	5	VX651030-T	VX451030-T	VX151030-T
Preparative	30×150	5	VX651530-T	VX451530-T	VX151530-T
Preparative	30×250	5	VX652530-T	VX452530-T	VX152530-T
Guard cartridge	21.2×10	5	VX650120-T	VX450120-T	VX150120-T

Type	Dimension (mm)	Particle (μm)	Venusil XBP CN	Venusil XBP NH_2	Venusil XBP Silica
Semi-preparative	10×150	5	VC951510-T	VN851510-T	VSi951510-T
Semi-preparative	10×250	5	VC952510-T	VN852510-T	VSi952510-T
Preparative	21.2×50	5	VC950520-T	VN850520-T	VSi950520-T
Preparative	21.2×150	5	VC951520-T	VN851520-T	VSi951520-T
Preparative	21.2×250	5	VC952520-T	VN852520-T	VSi952520-T
Preparative	30×100	5	VC951030-T	VN851030-T	VSi951030-T
Preparative	30×150	5	VC951530-T	VN851530-T	VSi951530-T
Preparative	30×250	5	VC952530-T	VN852530-T	VSi952530-T
Guard cartridge	21.2×10	5	VC950120-T	VN850120-T	VSi950120-T

Average Pore Size: 1000 Å

Type	Dimension (mm)	Particle (μm)	Venusil CA	Venusil CO	Venusil CJ	Chiral Amide-1
Semi-preparative	10×150	5	VCA951510-0	VCO951510-0	VCJ951510-0	AM951510-1
Semi-preparative	10×250	5	VCA952510-0	VCO952510-0	VCJ952510-0	AM952510-1
Preparative	21.2×50	5	VCA950520-0	VCO950520-0	VCJ950520-0	AM950520-1
Preparative	21.2×150	5	VCA951520-0	VCO951520-0	VCJ951520-0	AM951520-1
Preparative	21.2×250	5	VCA952520-0	VCO952520-0	VCJ952520-0	AM952520-1
Preparative	30×100	5	VCA951030-0	VCO951030-0	VCJ951030-0	AM951030-1
Preparative	30×150	5	VCA951530-0	VCO951530-0	VCJ951530-0	AM951530-1
Preparative	30×250	5	VCA952530-0	VCO952530-0	VCJ952530-0	AM952530-1
Guard cartridge	21.2×10	5	VCA950120-0	VCO950120-0	VCJ950120-0	AM950120-1
Preparative	10×250	10	VCA902510-0P	VCO902510-0P	VCJ902510-0P	AM902510-1
Preparative	20×250	10	VCA902520-0P	VCO902520-0P	VCJ902520-0P	AM902520-1
Preparative	30×250	10	VCA902530-0P	VCO902530-0P	VCJ902530-0P	AM902530-1

Bulk Media Ordering Information

Type	Part. No.	Particle (μm)	Pore Size (Å)	Pack (g)
Unisol C18	VA950010-0	5	100	10
Unisol C18	VA950100-0	5	100	100
Unisol C18	VA951000-0	5	100	1000
Unisol C18	VA950010-A	5	120	10
Unisol C18	VA950100-A	5	120	100
Unisol C18	VA951000-A	5	120	1000
Unisol C18	VA900010-0	10	100	10
Unisol C18	VA900100-0	10	100	100
Unisol C18	VA901000-0	10	100	1000
Unisol C18	VA900010-A	10	120	10
Unisol C18	VA900100-A	10	120	100
Unisol C18	VA901000-A	10	120	1000
Unisol Amide	VH950010-0	5	100	10
Unisol Amide	VH950100-0	5	100	100
Unisol Amide	VH951000-0	5	100	1000
Unisol Amide	VH950010-T	5	300	10
Unisol Amide	VH950100-T	5	300	100
Unisol Amide	VH951000-T	5	300	1000
Unisol Amide	VH900010-0	10	100	10
Unisol Amide	VH900100-0	10	100	100
Unisol Amide	VH901000-0	10	100	1000
Unisol Amide	VH900010-A	10	120	10
Unisol Amide	VH900100-A	10	120	100
Unisol Amide	VH901000-A	10	120	1000
Unisol Amide	VH900010-T	10	300	10
Unisol Amide	VH900100-T	10	300	100
Unisol Amide	VH901000-T	10	300	1000
Venusil XBP C18	VX950010-0	5	100	10
Venusil XBP C18	VX950100-0	5	100	100
Venusil XBP C18	VX951000-0	5	100	1000
Venusil XBP C18(A)	VX950010-A	5	120	10
Venusil XBP C18(A)	VX950100-A	5	120	100
Venusil XBP C18(A)	VX951000-A	5	120	1000
Venusil XBP C18	VX950010-L	5	150	10
Venusil XBP C18	VX950100-L	5	150	100
Venusil XBP C18	VX951000-L	5	150	1000

Type	Part. No.	Particle (µm)	Pore Size (Å)	Pack (g)
Venusil XBP C18	VX950010-T	5	300	10
Venusil XBP C18	VX950100-T	5	300	100
Venusil XBP C18	VX951000-T	5	300	1000
Venusil XBP C18	VX900010-0	10	100	10
Venusil XBP C18	VX900100-0	10	100	100
Venusil XBP C18	VX901000-0	10	100	1000
Venusil PrepG C18	VX900010-A	10	120	10
Venusil PrepG C18	VX900100-A	10	120	100
Venusil PrepG C18	VX901000-A	10	120	1000
Venusil XBP C18	VX900010-L	10	150	10
Venusil XBP C18	VX900100-L	10	150	100
Venusil XBP C18	VX901000-L	10	150	1000
Venusil XBP C18	VX900010-T	10	300	10
Venusil XBP C18	VX900100-T	10	300	100
Venusil XBP C18	VX901000-T	10	300	1000
Venusil XBP C18(2)	VX950010-2	5	100	10
Venusil XBP C18(2)	VX950100-2	5	100	100
Venusil XBP C18(2)	VX951000-2	5	100	1000
Venusil XBP C18(2)	VX900010-2	10	100	10
Venusil XBP C18(2)	VX900100-2	10	100	100
Venusil XBP C18(2)	VX901000-2	10	100	1000
Venusil XBP C18(2)	VX900010-2A	10	120	10
Venusil XBP C18(2)	VX900100-2A	10	120	100
Venusil XBP C18(2)	VX901000-2A	10	120	1000
Venusil XBP C8	VX850010-0	5	100	10
Venusil XBP C8	VX850100-0	5	100	100
Venusil XBP C8	VX851000-0	5	100	1000
Venusil XBP C8	VX850010-L	5	150	10
Venusil XBP C8	VX850100-L	5	150	100
Venusil XBP C8	VX851000-L	5	150	1000
Venusil XBP C8	VX850010-T	5	300	10
Venusil XBP C8	VX850100-T	5	300	100
Venusil XBP C8	VX851000-T	5	300	1000
Venusil XBP C8	VX800010-0	10	100	10
Venusil XBP C8	VX800100-0	10	100	100
Venusil XBP C8	VX801000-0	10	100	1000
Venusil XBP C4	VX450010-0	5	100	10
Venusil XBP C4	VX450100-0	5	100	100
Venusil XBP C4	VX451000-0	5	100	1000
Venusil XBP C4	VX450010-T	5	300	10
Venusil XBP C4	VX450100-T	5	300	100
Venusil XBP C4	VX451000-T	5	300	1000
Venusil XBP C4	VX400010-0	10	100	10
Venusil XBP C4	VX400100-0	10	100	100
Venusil XBP C4	VX401000-0	10	100	1000
Venusil XBP C4	VX400010-A	10	120	10
Venusil XBP C4	VX400100-A	10	120	100
Venusil XBP C4	VX401000-A	10	120	1000
Venusil XBP C1	VX150010-0	5	100	10
Venusil XBP C1	VX150100-0	5	100	100
Venusil XBP C1	VX151000-0	5	100	1000
Venusil XBP C1	VX150010-T	5	300	10
Venusil XBP C1	VX150100-T	5	300	100
Venusil XBP C1	VX151000-T	5	300	1000

Type	Part. No.	Particle (μm)	Pore Size (Å)	Pack (g)
Venusil XBP CN	VC950010-0	5	100	10
Venusil XBP CN	VC950100-0	5	100	100
Venusil XBP CN	VC951000-0	5	100	1000
Venusil XBP CN	VC950010-T	5	300	10
Venusil XBP CN	VC950100-T	5	300	100
Venusil XBP CN	VC951000-T	5	300	1000
Venusil XBP CN	VC900010-0	10	100	10
Venusil XBP CN	VC900100-0	10	100	100
Venusil XBP CN	VC901000-0	10	100	1000
Venusil XBP Phenyl	VX650010-0	5	100	10
Venusil XBP Phenyl	VX650100-0	5	100	100
Venusil XBP Phenyl	VX651000-0	5	100	1000
Venusil XBP Phenyl	VX650010-T	5	300	10
Venusil XBP Phenyl	VX650100-T	5	300	100
Venusil XBP Phenyl	VX651000-T	5	300	1000
Venusil XBP Silica	VSi950010-0	5	100	10
Venusil XBP Silica	VSi950100-0	5	100	100
Venusil XBP Silica	VSi951000-0	5	100	1000
Venusil XBP Silica	VSi950010-L	5	150	10
Venusil XBP Silica	VSi950100-L	5	150	100
Venusil XBP Silica	VSi951000-L	5	150	1000
Venusil XBP Silica	VSi950010-T	5	300	10
Venusil XBP Silica	VSi950100-T	5	300	100
Venusil XBP Silica	VSi951000-T	5	300	1000
Venusil XBP Silica	VSi900010-0	10	100	10
Venusil XBP Silica	VSi900100-0	10	100	100
Venusil XBP Silica	VSi901000-0	10	100	1000
Venusil XBP Silica	VSi900010-L	10	150	10
Venusil XBP Silica	VSi900100-L	10	150	100
Venusil XBP Silica	VSi901000-L	10	150	1000
Venusil ASB C18	VS950010-0	5	150	10
Venusil ASB C18	VS950100-0	5	150	100
Venusil ASB C18	VS951000-0	5	150	1000
Venusil ASB C18	VS950010-T	5	300	10
Venusil ASB C18	VS950100-T	5	300	100
Venusil ASB C18	VS951000-T	5	300	1000
Venusil ASB C18	VS900010-0	10	150	10
Venusil ASB C18	VS900100-0	10	150	100
Venusil ASB C18	VS901000-0	10	150	1000
Venusil ASB C8	VS850010-0	5	150	10
Venusil ASB C8	VS850100-0	5	150	100
Venusil ASB C8	VS851000-0	5	150	1000
Venusil ASB C8	VS850010-T	5	300	10
Venusil ASB C8	VS850100-T	5	300	100
Venusil ASB C8	VS851000-T	5	300	1000
Venusil HLP	VHL950010-0	5	100	10
Venusil HLP	VHL950100-0	5	100	100
Venusil HLP	VHL951000-0	5	100	1000
Venusil HLP	VHL900010-0	10	100	10
Venusil HLP	VHL900100-0	10	100	100
Venusil HLP	VHL901000-0	10	100	1000
Venusil HLP	VHL900010-A	10	120	10
Venusil HLP	VHL900100-A	10	120	100
Venusil HLP	VHL901000-A	10	120	1000

Type	Part. No.	Particle (μm)	Pore Size (Å)	Pack (g)
Durashell C18	DC950010-0	5	100	10
Durashell C18	DC950100-0	5	100	100
Durashell C18	DC951000-0	5	100	1000
Durashell C18(L)	DC950010-L	5	100	10
Durashell C18(L)	DC950100-L	5	100	100
Durashell C18(L)	DC951000-L	5	100	1000
Durashell C18	DC900010-0	10	100	10
Durashell C18	DC900100-0	10	100	100
Durashell C18	DC901000-0	10	100	1000
Durashell RP	DS950100-0	5	150	100
Durashell RP	DS951000-0	5	150	1000
Durashell RP	DS950010-0	5	150	10
Durashell RP	DS901000-0	10	150	1000
Durashell RP	DS900010-0	10	150	10
Durashell RP	DS900100-0	10	150	100
Innoval C18	IX950010-0	5	100	10
Innoval C18	IX950100-0	5	100	100
Innoval C18	IX951000-0	5	100	1000
Innoval C18	IX900010-0	10	100	10
Innoval C18	IX900100-0	10	100	100
Innoval C18	IX901000-0	10	100	1000
Innoval Silica	ISi950010-0	5	100	10
Innoval Silica	ISi950100-0	5	100	100
Innoval Silica	ISi951000-0	5	100	1000
Innoval Silica	ISi900010-0	10	100	10
Innoval Silica	ISi900100-0	10	100	100
Innoval Silica	ISi901000-0	10	100	1000
Venusil CA	VCA900010-0P	10	1000	10
Venusil CA	VCA900100-0P	10	1000	100
Venusil CA	VCA901000-0P	10	1000	1000
Venusil CA	VCA9200010-0	20	1000	10
Venusil CA	VCA9200100-0	20	1000	100
Venusil CA	VCA9201000-0	20	1000	1000
Venusil CO	VCO900010-0P	10	1000	10
Venusil CO	VCO900100-0P	10	1000	100
Venusil CO	VCO901000-0P	10	1000	1000
Venusil CO	VCO9200010-0	20	1000	10
Venusil CO	VCO9200100-0	20	1000	100
Venusil CO	VCO9201000-0	20	1000	1000
Venusil CJ	VCJ900010-0P	10	1000	10
Venusil CJ	VCJ900100-0P	10	1000	100
Venusil CJ	VCJ901000-0P	10	1000	1000
Venusil CJ	VCJ9200010-0	20	1000	10
Venusil CJ	VCJ9200100-0	20	1000	100
Venusil CJ	VCJ9201000-0	20	1000	1000

Claricep™ Flash Chromatography Media and Columns

Column chromatography has been and will be continuously used as a major purification method for synthetic and natural products. Traditional silica-based flash chromatography columns have many drawbacks: 1) high surface activity that causes instability of certain compounds, 2) unwanted tailing or overly long retention of basic compounds due to acid/base interaction or metal chelating effect, and 3) poor reproducibility.

Bonna-Agela Technologies have developed a technology that can specifically deactivate the silica media. Our columns offer significantly improved performance and much less undesirable silica surface activities than the regular flash columns.

We provide two types flash columns packed with irregular silica or spherical silica.

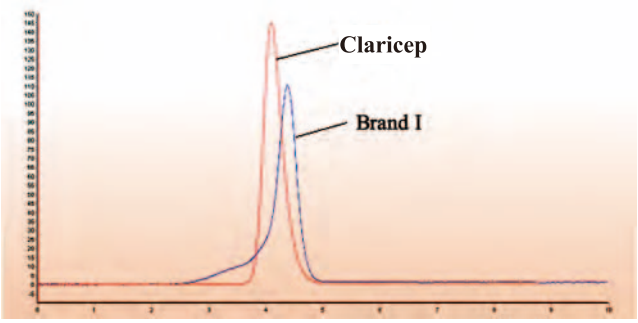
Irregular Silica Flash Columns

Claricep™ CS Silica Columns

The packing is ultra pure grade silica (specially washed with acid and DI water; narrow particle size and water content control).

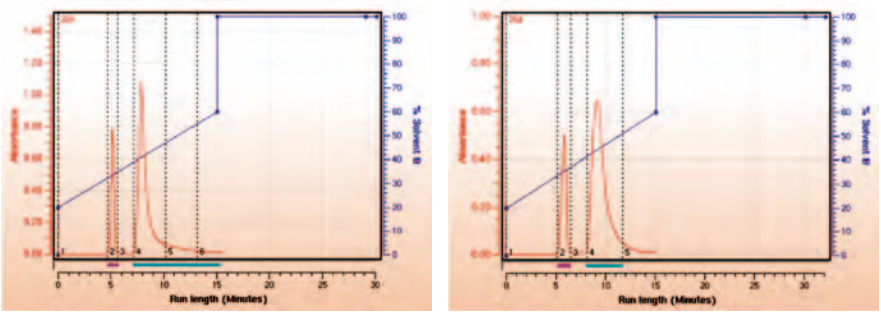
Column Specification
Surface Area: 480 m^2/g; Surface pH: 6.3-7.2; Water Content: 3.0-5.0 %; Average Particle Size: 40-60 μm; Average Pore Size: 60 Å.

Aniline Flash Column Tests Report



Column: Claricep CS (40 g), Brand I (40 g Si)
Mobile Phase: Dichloromethane : methanol = 99 : 1
Detection: 254 nm
Temperature: Ambient
Flow Rate: 20 mL/min
Rt: Brand I: 4.373 min; Claricep: 4.090 min

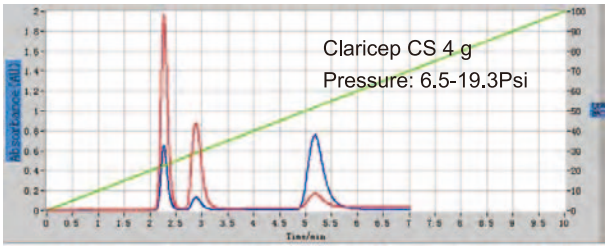
Chromatography Comparison

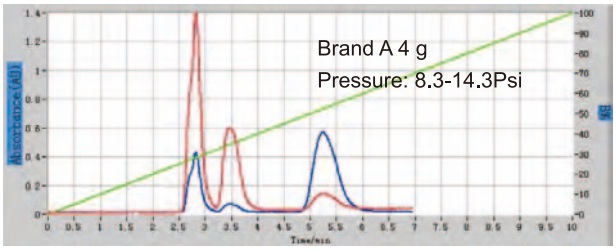


Sample: Phenyl acetone,
4-aminobenzoic acid
Mobile Phase: Hexane/ethylacetate
(gradient)
Detection: 254 nm
Temperature: Ambient

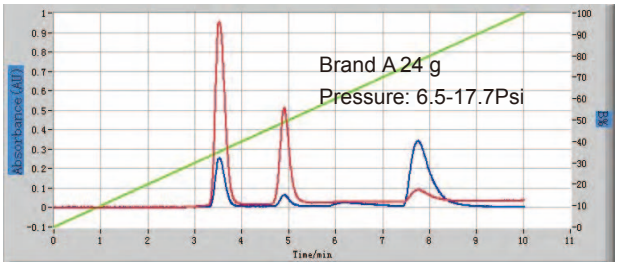
Testing of Different Brand Flash Column

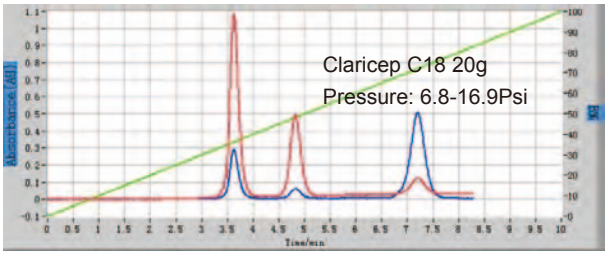
A: Petroleum ether; B: Ethyl Acetate
Wavelength: 254/280 nm
Sample: PABA Acetylbenzene Methyl Paraben
Flow Rate: 20 mL/min

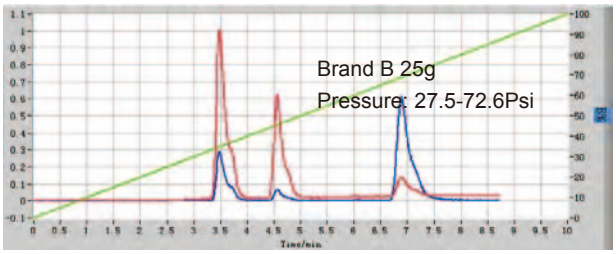




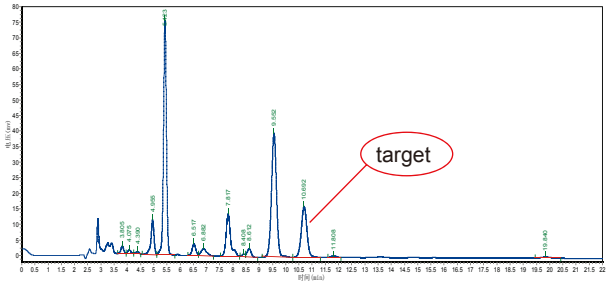
A: Petroleum ether; B: Ethyl Acetate
Wavelength: 254/280 nm
Sample: PABA Acetylbenzene Methyl Paraben
Flow Rate: 35 mL/min

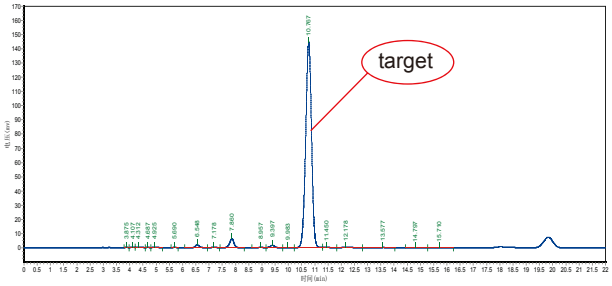




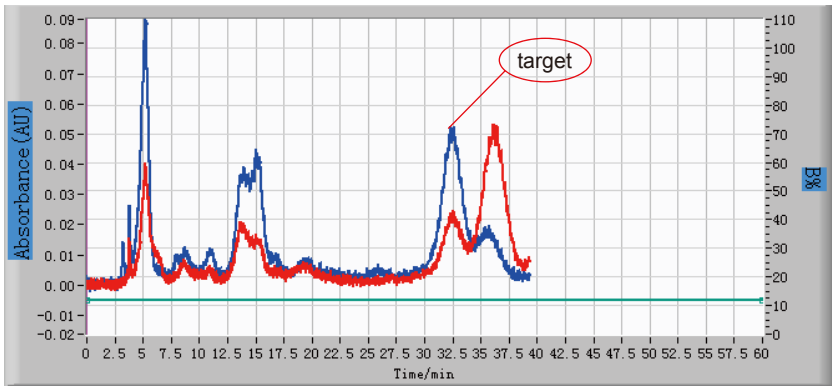


The Purify of Duantioxidant in Sesame Oil





Column: Venusil XBP C18, 4.6×150 mm, 5 μm
Mobile: MeOH: Water=75:25



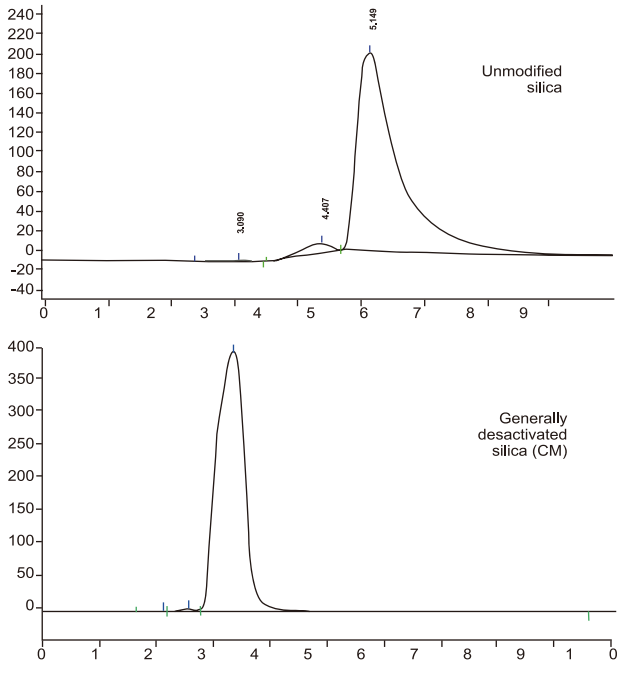
Column: Claricep Silica (CS),
40-60 μm, 60 Å,12 g
Mobile: acetic ether:petroleum ether=12:88
Flow Rate: 18 mL/min
Sample: 400 mg/20 mL
Injection: 4 mL
Instrument: CHEETAH MP 100

Claricep™ CM Silica Columns

Bonna-Agela Technologies have developed a technology that can specifically deactivate silica surface. Our columns show significantly improved performance and much less undesirable silica surface activities than the regular flash columns. Our columns may also provide alternative selectivity.

The following figures present a comparison of column performance for an Bonna-Agela's deactivated silica column vs an unmodified silica flash column.

Chromatogram Comparison of Catechol on Different Silica



Test:
The silica to be tested was packed into a stainless steel column of 4.6×150 mm and tested on a HPLC system

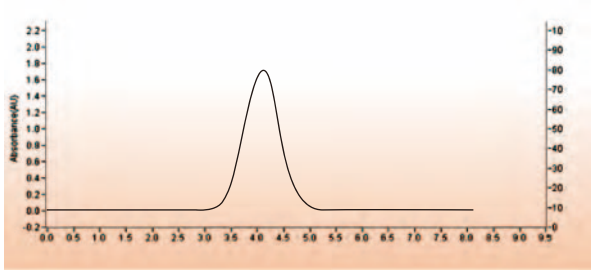
Conditions:
Sample: Catechol 100 μg/mL in mobile phase
Mobile phase: dichloromethane/methanol = 98/2
Temperature: 30 ℃
Detection: 254 nm
Injection: 5 μL

Claricep™ Amide Columns

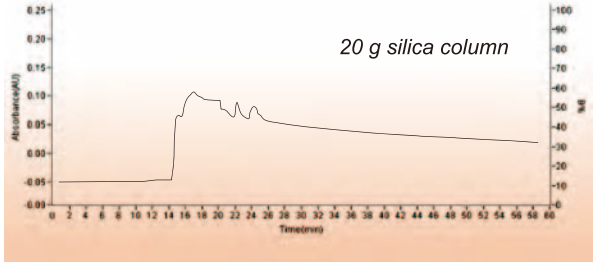
We are now introducing HILIC phases for flash Chromatography applications. Bonna-Agela's Amide columns are compatible with polar and aqueous solvents, such methanol, acetonitrile and water, which allows much easier solvent handling than conventional normal phase separations. It becomes possible to separate and elute polar compounds that are strongly retained in the regular normal-phase mode or weakly retained in the reversed-phase mode, mode. Moreover, these HILIC packed columns can be reused multiple times.

1. Solution for compounds that are not soluble in non- or low polar solvents (hexane, isopropanol, toluene and dichloromethane).
2. Solution for highly polar compounds which have too much retention on silica columns.
3. Solution for a mixture of compounds with a broad range of polarity (non-polar, semi-polar, and high polar) with alternative selectivity.

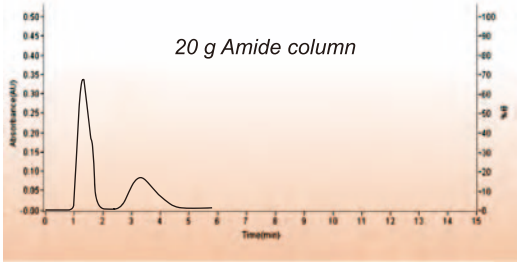
Surface Area: 480 m^2/g; Water content: 3.0-5.0 %; Average Particle Size: 40-60 μm, Average Pore Size: 60 Å; Carbon loading: 5.0 %



Column: 20 g Amide column
Sample: 10 mg of uridine in 3 mL hot water
Mobile Phase: water
Detection: 254 nm
Flow Rate: 12 mL/min

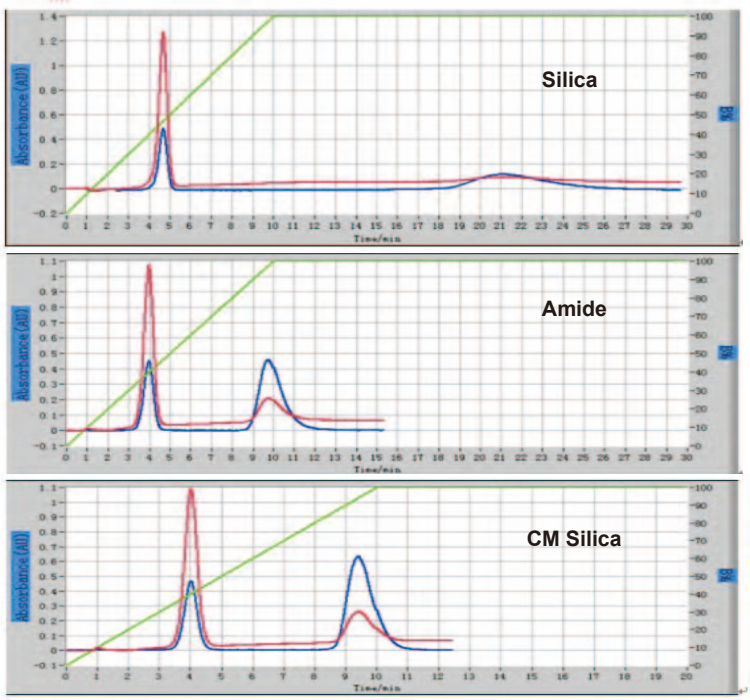


Sample:100 mg VC and 70 mg VB2, direct solid loading
Mobile phase: 0-2 min EtOAc; 2-22 min MeOH (0-100 %);
22-52 min MeOH
Detection: 280 nm
Flow Rate: 25 mL/min



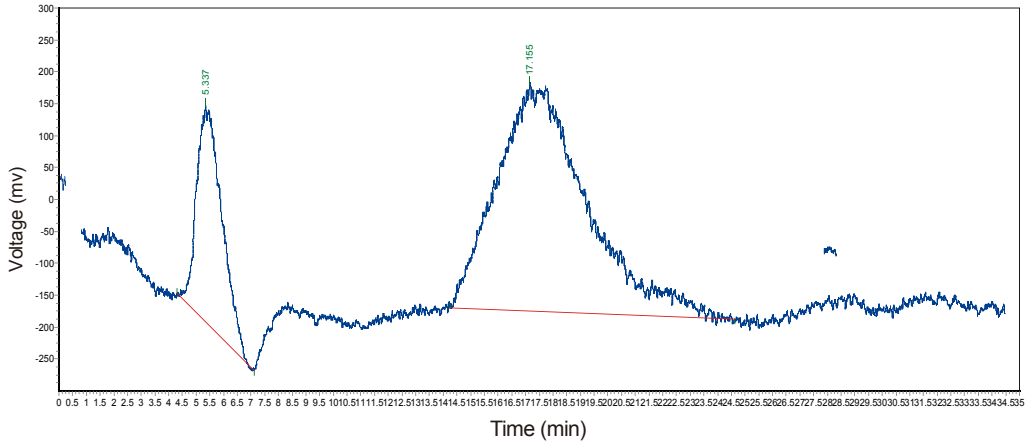
Sample: 100 mg VC and 70 mg VB2, direct solid loading
Mobile phase: 0.1% TFA : ACN = 99 : 1
Detection: 280 nm
Flow Rate: 25 mL/min

Separation Comparison of Polar Compounds with Normal Phase Application (Aniline + Caffeine)



Column: 12 gram
Mobile Phase: A: Hexane; B: Ethyl acetate
B: 0-100 % 10 min
100%-100 % 20 min
Detect: 254 nm, 280 nm
Flow: 20 mL/min
Sample: Aniline+Caffeine

Isolation of Herba Leonuri



Column: Claricep Amide, 40-60 μm,
60 Å, 4 g (3 columns)
Detector: ELSD (45 ℃)
Flow Rate: 8 mL/min
Mobile Phase: ACN:0.2 %AA=80:20

Claricep™ Reversed-phase Columns

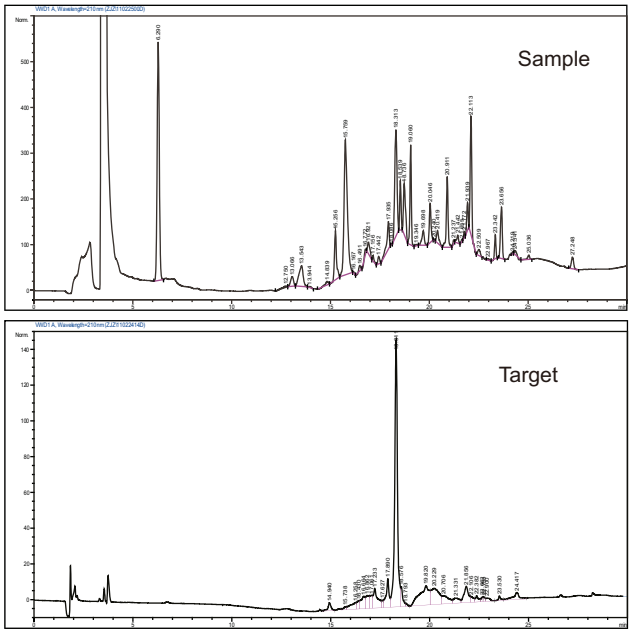
The media is chemically bonded with nonpolar alky chains such C4, C8 or C18 groups. The term reversed-phase describes the separation mode that just the opposite of the normal phase chromatography. In reversed-phase mode, non-polar or hydrophobic compounds are strongly retained, and polar samples are weakly retained, moving faster through the packing bed. The use of reversedphase media for purification is becoming more popular because of its high reproducibility and broad applicability. A blend of water and miscible polar organic solvents such as acetonitrile or methanol is used as mobile phase to ensure the proper interaction of analytes with the non-polar alky packing surface. C18 or octadecyl silane (ODS) is the most popular type of reversed-phase packing. It applies to the separation of many compounds.

Claricep™ C18 Columns

We can provide two pore size: 60 Å and 100 Å.

Characteristics:
Surface Area: 480 m^2/g; Average Particle Size: 40-60 μm, Average Pore Size: 60 Å; Carbon loading: 15 %
Surface Area: 320 m^2/g; Average Particle Size: 40-60 μm, Average Pore Size: 100 Å; Carbon loading: 14 %

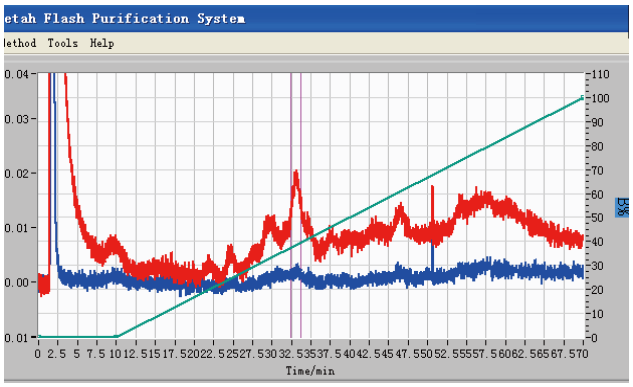
The Extraction of Small Peptides in Leavening



Mobile Phase: A: Warter, B: Acetonitrile
Column: Claricep Spherical HLP, 5 um, 4.6×250 mm
Flow Rate: 1.0 mL/min

Gradient

Time	B%
0	5
5	5
10	20
20	80
30	80



Mobile Phase: A: Warter, B: Acetonitrile
Column: Claricep Spherical HLP (4 g×3)
Flow Rate: 18 mL/min
Monitoring Wavelength: 280 nm
Collecting Wavelength: 220 nm

B%	Start	End	Duration (min)
1	0	0	5
2	0	0	10
3	0	100	60

Claricep™ Spherical Flash Columns

Claricep spherical products use silica with narrowly controlled size distribution. It has high column efficiency. Bonna-Agela Technologies have developed a variety format of reversed phase and normal phase columns. The reversed phase includes C18, AQ C18, C8 and HLP etc. The normal phase includes CS, CM and Amide (HILIC), etc.

Claricep™ Spherical C18 Columns

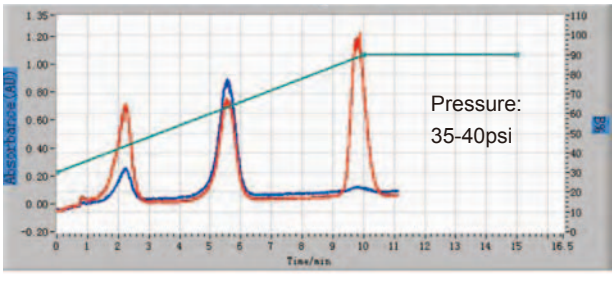
Characteristics:
20-45 μm, 100 Å, Carbon loading: 14 %;
50 μm, 120 Å, Carbon loading: 14 %

The Testing of Different Style Claricep Spherical C18 Columns

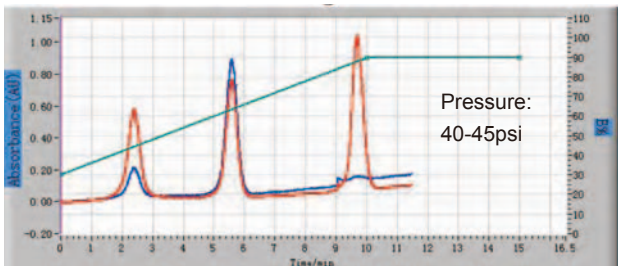
Column: Claricep Spherical C18, 12 g
Mobile Phase: A: Water; B Methanol
Wavelength: 214 nm and 230 nm
Sample: Caffeine, Naphthalene and Dimethyl phthalate

Step	Start(%)	End(%)	Duration (min)
1	30	30	5
2	30	90	10
3	90	90	5

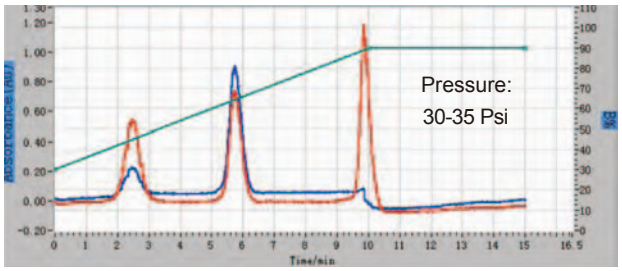
1)Claricep C18, 40-60 μm, 100 Å (Irregular silica)



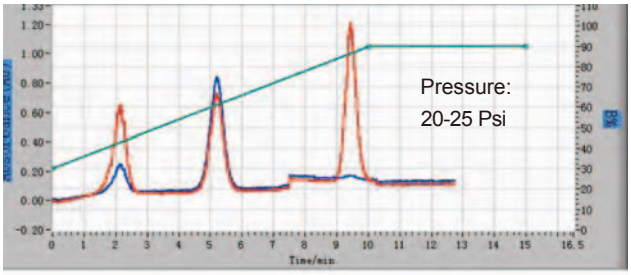
2) Claricep C18, 40-60 μm, 100 Å (Irregular silica



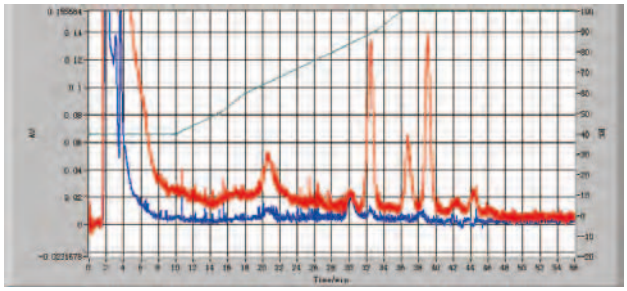
3) Claricep Spherical C18, 20-45 μm, 100 Å (Spherical silica)



4) Claricep Spherical C18, 50 μm, 120 Å (Spherical silica)



Isolation of Polypeptide

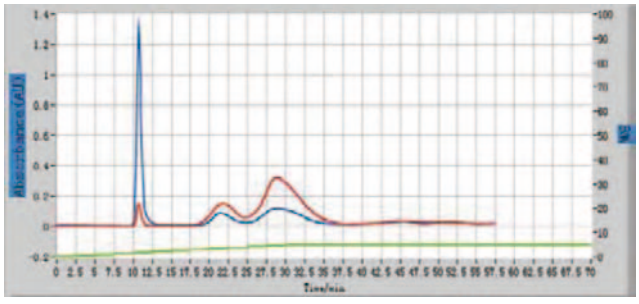


Column: Claricep Spherical C18, 20-45 μm, 100 Å (12 g/2 columns)
Flow Rate: 1 mL/min
Detection: 205 nm/280 nm
Injection: 10 μL
Temperature: 40℃

Mobile Phase:

Time	A(H2O+Time O+0.01%TFA)	B(ACN)
0	95%	5%
3	95%	5%
5	70%	30%
25	20%	80%
30	20%	80%
31	10%	90%
35	10%	90%

Isolation of Iridoids Compounds



Sample: Iridoids Compounds
Mobile Phase: MeOH -Water-Formic acid
Detection: 231 nm/214 nm
Column: Claricep Spherical AQ C18, 20-45 μm, 100 Å

Claricep™ Spherical AQ C18 Columns

Following the success of Bonna-Agela's Unisol C18 HPLC columns, we now introduce a hydrophilic reversed phase C18 for the flash chromatography applications, which offer unprecedented separation performance for compounds of a wide range of properties from hydrophilic to hydrophobic: polar, semi-polar and non-polar compounds.

Characteristics:
Surface Area: 320 m^2/g; Surface Average Particle Size: 20-45 μm, Average Pore Size: 100 Å; Carbon loading: 15 %.

Claricep™ Spherical HLP Column

Reversed-phase columns are based on Bonna-Agela's embedded polar group technology to end cap residual silanols. It is a good option to separate highly basic analytes and it has high loading capacity of samples.

Characteristics:
Surface Area: 320 m^2/g; Average Particle Size: 20-45 μm, Average Pore Size: 100 Å; Carbon Loading: 12 %.

Claricep™ Screw-on Flash Columns *New Products!*

The Claricep™ series are a new design of flash columns from Bonna-Agela. Besides performance and diversity of chemistry we committed to, the new formats emphasize simplicity of use, convenience of sample loading and adaptability of tubing connectivity across different platforms. This family of flash columns features:

- Hand screw-on head cap
- Higher pressure tolerance (200 psi)
- Choice of solid sample loading
- Conventional or Luer lock fittings

Claricep™ i-Series

The i-Series feature a managed column head space with a secured screw-on lid. This design allows either loading of liquid sample directly onto column head or loading of impregnated solid sample into the space. Using this format, users will benefit:

- Choice of loading method based on sample properties
- Narrow band for liquid samples because of wide loading area
- Dry-loading of solid impregnated samples minimizes band broadening
- Customized loading method upon user's request

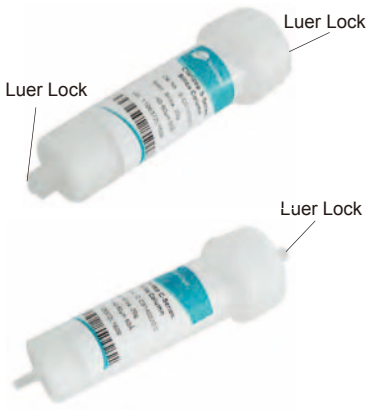
The i-series spacer apply with i-series columns, it increases loading capacity and produces tighter elution bands by removing the injection solvent effect.

Claricep™ s-Series

The s-Series columns are fully packed without a head void. But the Luer lock fittings for both inlet and outlet allow easy operation of tandem columns or coupling of loading cartridge. Refer page 55 for the guide to use "Prepacked Solid Load Cartridges".

Claricep™ c-Series

The c-Series share the same design, but the column outlet does not have a luer lock structure, which simplifies tubing connection across different flash system of other vendors.



Claricep™ Column Ordering Information

i-Series spacer	Irregular Silica; Average Particle Size: 40-60 µm; Average Pore Size: 60Å.	Spherical Silica; Average Particle Size: 20-45 µm; Average Pore Size:60 Å	Package
Silica	SNS-CS140004-0	SNS-SS130004-0	20
	SNS-CS140012-0	SNS-SS130012-0	20
	SNS-CS140020-0	SNS-SS130020-0	20
	SNS-CS140040-0	SNS-SS130040-0	10
	SNS-CS140080-0	SNS-SS130080-0	5
	SNS-CS140120-0	SNS-SS130120-0	5

i-Series spacer	Irregular Silica; Average Particle Size: 40-60 µm; Average Pore Size: 60Å.	Spherical Silica; Average Particle Size: 20-45 µm; Average Pore Size: 100 Å	Package
C18	SNS-CO140004-0	SNS-SO230004-0	20
	SNS-CO140012-0	SNS-SO230012-0	20
	SNS-CO140020-0	SNS-SO230020-0	20
	SNS-CO140040-0	SNS-SO230040-0	10
	SNS-CO140080-0	SNS-SO230080-0	5
	SNS-CO140120-0	SNS-SO230120-0	5
Amide(HILIC)	SNS-CH140004-0	SNS-SH230004-0	20
	SNS-CH140012-0	SNS-SH230012-0	20
	SNS-CH140020-0	SNS-SH230020-0	20
	SNS-CH140040-0	SNS-SH230040-0	10
	SNS-CH140080-0	SNS-SH230080-0	5
	SNS-CH140120-0	SNS-SH230120-0	5
AQ C18		SNS-SQ230004-0	20
		SNS-SQ230012-0	20
		SNS-SQ230020-0	20
		SNS-SQ230040-0	10
		SNS-SQ230080-0	5
		SNS-SQ230120-0	5

Irregular Silica; Average Particle Size: 40-60 µm; Average Pore Size: 60 Å.

Type	Claricep i-Series	Claricep s-Series	Claricep c-Series	Claricep	Silica Amount (g)	Quantity (pk)
Silica (CS) Standard Silica	SN-CS140004-0	S-CS140004-0	C-CS140004-0	CS140004-0	4	20
	SN-CS140012-0	S-CS140012-0	C-CS140012-0	CS140012-0	12	20
	SN-CS140020-0	S-CS140020-0	C-CS140020-0	CS140020-0	20	20
	SN-CS140040-0	S-CS140040-0	C-CS140040-0	CS140040-0	40	10
	SN-CS140080-0	S-CS140080-0	C-CS140080-0	CS140080-0	80	5
	SN-CS140120-0	S-CS140120-0	C-CS140120-0	CS140120-0	120	5
				CS140330-0	330	1
				CS140800-0	800	1
				CS1401500-0	1500	1
Silica (CM) Deactivated Silica	SN-CM140004-0	S-CM140004-0	C-CM140004-0	CM140004-0	4	20
	SN-CM140012-0	S-CM140012-0	C-CM140012-0	CM140012-0	12	20
	SN-CM140020-0	S-CM140020-0	C-CM140020-0	CM140020-0	20	20
	SN-CM140040-0	S-CM140040-0	C-CM140040-0	CM140040-0	40	10
	SN-CM140080-0	S-CM140080-0	C-CM140080-0	CM140080-0	80	5
	SN-CM140120-0	S-CM140120-0	C-CM140120-0	CM140120-0	120	5
				CM140330-0	330	1
				CM140800-0	800	1
				CM1401500-0	1500	1

Type	Claricep i-Series	Claricep s-Series	Claricep c-Series	Claricep	Silica Amount (g)	Quantity (pk)
C18	SN-CO140004-0	S-CO140004-0	C-CO140004-0	CO140004-0	4	20
	SN-CO140012-0	S-CO140012-0	C-CO140012-0	CO140012-0	12	20
	SN-CO140020-0	S-CO140020-0	C-CO140020-0	CO140020-0	20	20
	SN-CO140040-0	S-CO140040-0	C-CO140040-0	CO140040-0	40	10
	SN-CO140080-0	S-CO140080-0	C-CO140080-0	CO140080-0	80	5
	SN-CO140120-0	S-CO140120-0	C-CO140120-0	CO140120-0	120	5
				CO140330-0	330	1
				CO140800-0	800	1
				CO1401500-0	1500	1
Amide (HILIC)	SN-CH140004-0	S-CH140004-0	C-CH140004-0	CH140004-0	4	20
	SN-CH140012-0	S-CH140012-0	C-CH140012-0	CH140012-0	12	20
	SN-CH140020-0	S-CH140020-0	C-CH140020-0	CH140020-0	20	20
	SN-CH140040-0	S-CH140040-0	C-CH140040-0	CH140040-0	40	10
	SN-CH140080-0	S-CH140080-0	C-CH140080-0	CH140080-0	80	5
	SN-CH140120-0	S-CH140120-0	C-CH140120-0	CH140120-0	120	5
				CH140330-0	330	1
				CH140800-0	800	1
				CH1401500-0	1500	1
NH_2	SN-CN140004-0	S-CN140004-0	C-CN140004-0	CN140004-0	4	20
	SN-CN140012-0	S-CN140012-0	C-CN140012-0	CN140012-0	12	20
	SN-CN140020-0	S-CN140020-0	C-CN140020-0	CN140020-0	20	20
	SN-CN140040-0	S-CN140040-0	C-CN140040-0	CN140040-0	40	10
	SN-CN140080-0	S-CN140080-0	C-CN140080-0	CN140080-0	80	5
	SN-CN140120-0	S-CN140120-0	C-CN140120-0	CN140120-0	120	5
				CN140330-0	330	1
				CN140800-0	800	1
				CN1401500-0	1500	1
C8	SN-C8140004-0	S-C8140004-0	C-C8140004-0	C8140004-0	4	20
	SN-C8140012-0	S-C8140012-0	C-C8140012-0	C8140012-0	12	20
	SN-C8140020-0	S-C8140020-0	C-C8140020-0	C8140020-0	20	20
	SN-C8140040-0	S-C8140040-0	C-C8140040-0	C8140040-0	40	10
	SN-C8140080-0	S-C8140080-0	C-C8140080-0	C8140080-0	80	5
	SN-C8140120-0	S-C8140120-0	C-C8140120-0	C8140120-0	120	5
				C8140330-0	330	1
				C8140800-0	800	1
				C81401500-0	1500	1
SAX	SN-CS140004-AX	S-CS140004-AX	C-CS140004-AX	CS140004-AX	4	20
	SN-CS140012-AX	S-CS140012-AX	C-CS140012-AX	CS140012-AX	12	20
	SN-CS140020-AX	S-CS140020-AX	C-CS140020-AX	CS140020-AX	20	20
	SN-CS140040-AX	S-CS140040-AX	C-CS140040-AX	CS140040-AX	40	10
	SN-CS140080-AX	S-CS140080-AX	C-CS140080-AX	CS140080-AX	80	5
	SN-CS140120-AX	S-CS140120-AX	C-CS140120-AX	CS140120-AX	120	5
				CS140330-AX	330	1
				CS140800-AX	800	1
				CS1401500-AX	1500	1
SCX	SN-CS140004-CX	S-CS140004-CX	C-CS140004-CX	CS140004-CX	4	20
	SN-CS140012-CX	S-CS140012-CX	C-CS140012-CX	CS140012-CX	12	20
	SN-CS140020-CX	S-CS140020-CX	C-CS140020-CX	CS140020-CX	20	20
	SN-CS140040-CX	S-CS140040-CX	C-CS140040-CX	CS140040-CX	40	10
	SN-CS140080-CX	S-CS140080-CX	C-CS140080-CX	CS140080-CX	80	5
	SN-CS140120-CX	S-CS140120-CX	C-CS140120-CX	CS140120-CX	120	5
				CS140330-CX	330	1
				CS140800-CX	800	1
				CS1401500-CX	1500	1

Type	Claricep i-Series	Claricep s-Series	Claricep c-Series	Claricep	Silica Amount (g)	Quantity (pk)
Alumina Neutral	SN-CA140004-N	S-CA140004-N	C-CA140004-N	CA140004-N	8	20
	SN-CA140012-N	S-CA140012-N	C-CA140012-N	CA140012-N	20	20
	SN-CA140020-N	S-CA140020-N	C-CA140020-N	CA140020-N	40	20
	SN-CA140040-N	S-CA140040-N	C-CA140040-N	CA140040-N	80	10
	SN-CA140080-N	S-CA140080-N	C-CA140080-N	CA140080-N	150	5
	SN-CA140120-N	S-CA140120-N	C-CA140120-N	CA140120-N	200	5
				CA140330-N	550	1
				CA140800-N	1300	1
				CA1401500-N	2500	1
Alumina Basic	SN-CA140004-B	S-CA140004-B	C-CA140004-B	CA140004-B	8	20
	SN-CA140012-B	S-CA140012-B	C-CA140012-B	CA140012-B	20	20
	SN-CA140020-B	S-CA140020-B	C-CA140020-B	CA140020-B	40	20
	SN-CA140040-B	S-CA140040-B	C-CA140040-B	CA140040-B	80	10
	SN-CA140080-B	S-CA140080-B	C-CA140080-B	CA140080-B	150	5
	SN-CA140120-B	S-CA140120-B	C-CA140120-B	CA140120-B	200	5
				CA140330-B	550	1
				CA140800-B	1300	1
				CA1401500-B	2500	1
Alumina Acidic	SN-CA140004-A	S-CA140004-A	C-CA140004-A	CA140004-A	8	20
	SN-CA140012-A	S-CA140012-A	C-CA140012-A	CA140012-A	20	20
	SN-CA140020-A	S-CA140020-A	C-CA140020-A	CA140020-A	40	20
	SN-CA140040-A	S-CA140040-A	C-CA140040-A	CA140040-A	80	10
	SN-CA140080-A	S-CA140080-A	C-CA140080-A	CA140080-A	150	5
	SN-CA140120-A	S-CA140120-A	C-CA140120-A	CA140120-A	200	5
				CA140330-A	550	1
				CA140800-A	1300	1
				CA1401500-A	2500	1

Irregular Silica; Average Particle Size: 40-60 µm; Average Pore Size: 100 Å.

Type	Claricep i-Series	Claricep s-Series	Claricep c-Series	Claricep	Silica Amount (g)	Quantity (pk)
C18	SN-CO240004-0	S-CO240004-0	C-CO240004-0	CO240004-0	4	20
	SN-CO240012-0	S-CO240012-0	C-CO240012-0	CO240012-0	12	20
	SN-CO240020-0	S-CO240020-0	C-CO240020-0	CO240020-0	20	20
	SN-CO240040-0	S-CO240040-0	C-CO240040-0	CO240040-0	40	10
	SN-CO240080-0	S-CO240080-0	C-CO240080-0	CO240080-0	80	5
	SN-CO240120-0	S-CO240120-0	C-CO240120-0	CO240120-0	120	5
				CO240330-0	330	1
				CO240800-0	880	1
				CO2401500-0	1500	1

Irregular Silica; Average Particle Size: 40-60 µm; Average Pore Size: 300 Å.

Type	Claricep i-Series	Claricep s-Series	Claricep c-Series	Claricep	Silica Amount (g)	Quantity (pk)
C18	SN-CO140004-T	S-CO140004-T	C-CO140004-T	CO140004-T	4	20
	SN-CO140012-T	S-CO140012-T	C-CO140012-T	CO140012-T	12	20
	SN-CO140020-T	S-CO140020-T	C-CO140020-T	CO140020-T	20	20
	SN-CO140040-T	S-CO140040-T	C-CO140040-T	CO140040-T	40	10
	SN-CO140080-T	S-CO140080-T	C-CO140080-T	CO140080-T	80	5
	SN-CO140120-T	S-CO140120-T	C-CO140120-T	CO140120-T	120	5
				CO140330-T	330	1
				CO140800-T	800	1
				CO1401500-T	1500	1

Type	Claricep i-Series	Claricep s-Series	Claricep c-Series	Claricep	Silica Amount (g)	Quantity (pk)
Silica(CS)	SN-CS140004-T	S-CS140004-T	C-CS140004-T	CS140004-T	4	20
	SN-CS140012-T	S-CS140012-T	C-CS140012-T	CS140012-T	12	20
	SN-CS140020-T	S-CS140020-T	C-CS140020-T	CS140020-T	20	20
	SN-CS140040-T	S-CS140040-T	C-CS140040-T	CS140040-T	40	10
	SN-CS140080-T	S-CS140080-T	C-CS140080-T	CS140080-T	80	5
	SN-CS140120-T	S-CS140120-T	C-CS140120-T	CS140120-T	120	5
				CS140330-T	330	1
				CS140800-T	800	1
				CS1401500-T	1500	1

Average Particle Size: 20-45 μm; Pore Size: 60 Å

Type	Claricep i-Series	Claricep s-Series	Claricep c-Series	Claricep	Silica Amount (g)	Quantity (pk)
Spherical Silica (CS) Standard Silica	SN-SS130004-0	S-SS130004-0	C-SS130004-0	SS130004-0	4	20
	SN-SS130012-0	S-SS130012-0	C-SS130012-0	SS130012-0	12	20
	SN-SS130020-0	S-SS130020-0	C-SS130020-0	SS130020-0	20	20
	SN-SS130040-0	S-SS130040-0	C-SS130040-0	SS130040-0	40	10
	SN-SS130080-0	S-SS130080-0	C-SS130080-0	SS130080-0	80	5
	SN-SS130120-0	S-SS130120-0	C-SS130120-0	SS130120-0	120	5
				SS130330-0	330	1
				SS130800-0	800	1
				SS1301500-0	1500	1

Average Particle Size: 20-45 μm; Pore Size: 100 Å

Type	Claricep i-Series	Claricep s-Series	Claricep c-Series	Claricep	Silica Amount (g)	Quantity (pk)
Spherical Silica (CM) Deactivated Silica	SN-SM230004-0	S-SM230004-0	C-SM230004-0	SM230004-0	4	20
	SN-SM230012-0	S-SM230012-0	C-SM230012-0	SM230012-0	12	20
	SN-SM230020-0	S-SM230020-0	C-SM230020-0	SM230020-0	20	20
	SN-SM230040-0	S-SM230040-0	C-SM230040-0	SM230040-0	40	10
	SN-SM230080-0	S-SM230080-0	C-SM230080-0	SM230080-0	80	5
	SN-SM230120-0	S-SM230120-0	C-SM230120-0	SM230120-0	120	5
				SM230330-0	330	1
				SM230800-0	800	1
				SM2301500-0	1500	1
Spherical C18	SN-SO230004-0	S-SO230004-0	C-SO230004-0	SO230004-0	4	20
	SN-SO230012-0	S-SO230012-0	C-SO230012-0	SO230012-0	12	20
	SN-SO230020-0	S-SO230020-0	C-SO230020-0	SO230020-0	20	20
	SN-SO230040-0	S-SO230040-0	C-SO230040-0	SO230040-0	40	10
	SN-SO230080-0	S-SO230080-0	C-SO230080-0	SO230080-0	80	5
	SN-SO230120-0	S-SO230120-0	C-SO230120-0	SO230120-0	120	5
				SO230330-0	330	1
				SO230800-0	800	1
				SO2301500-0	1500	1
Spherical AQ C18	SN-SQ230004-0	S-SQ230004-0	C-SQ230004-0	SQ230004-0	4	20
	SN-SQ230012-0	S-SQ230012-0	C-SQ230012-0	SQ230012-0	12	20
	SN-SQ230020-0	S-SQ230020-0	C-SQ230020-0	SQ230020-0	20	20
	SN-SQ230040-0	S-SQ230040-0	C-SQ230040-0	SQ230040-0	40	10
	SN-SQ230080-0	S-SQ230080-0	C-SQ230080-0	SQ230080-0	80	5
	SN-SQ230120-0	S-SQ230120-0	C-SQ230120-0	SQ230120-0	120	5
				SQ230330-0	330	1
				SQ230800-0	800	1
				SQ2301500-0	1500	1

Type	Claricep i-Series	Claricep s-Series	Claricep c-Series	Claricep	Silica Amount (g)	Quantity (pk)
Spherical HLP	SN-SHL230004-0	S-SHL230004-0	C-SHL230004-0	SHL230004-0	4	20
	SN-SHL230012-0	S-SHL230012-0	C-SHL230012-0	SHL230012-0	12	20
	SN-SHL230020-0	S-SHL230020-0	C-SHL230020-0	SHL230020-0	20	20
	SN-SHL230040-0	S-SHL230040-0	C-SHL230040-0	SHL230040-0	40	10
	SN-SHL230080-0	S-SHL230080-0	C-SHL230080-0	SHL230080-0	80	5
	SN-SHL230120-0	S-SHL230120-0	C-SHL230120-0	SHL230120-0	120	5
				SHL230330-0	330	1
				SHL230800-0	800	1
				SHL2301500-0	1500	1
Spherical Amide (HILIC)	SN-SH230004-0	S-SH230004-0	C-SH230004-0	SH230004-0	4	20
	SN-SH230012-0	S-SH230012-0	C-SH230012-0	SH230012-0	12	20
	SN-SH230020-0	S-SH230020-0	C-SH230020-0	SH230020-0	20	20
	SN-SH230040-0	S-SH230040-0	C-SH230040-0	SH230040-0	40	10
	SN-SH230080-0	S-SH230080-0	C-SH230080-0	SH230080-0	80	5
	SN-SH230120-0	S-SH230120-0	C-SH230120-0	SH230120-0	120	5
				SH230330-0	330	1
				SH230800-0	800	1
				SH2301500-0	1500	1
Spherical NH_2	SN-SN230004-0	S-SN230004-0	C-SN230004-0	SN230004-0	4	20
	SN-SN230012-0	S-SN230012-0	C-SN230012-0	SN230012-0	12	20
	SN-SN230020-0	S-SN230020-0	C-SN230020-0	SN230020-0	20	20
	SN-SN230040-0	S-SN230040-0	C-SN230040-0	SN230040-0	40	10
	SN-SN230080-0	S-SN230080-0	C-SN230080-0	SN230080-0	80	5
	SN-SN230120-0	S-SN230120-0	C-SN230120-0	SN230120-0	120	5
				SN230330-0	330	1
				SN230800-0	800	1
				SN2301500-0	1500	1
Spherical CN	SN-SC230004-0	S-SC230004-0	C-SC230004-0	SC230004-0	4	20
	SN-SC230012-0	S-SC2300012-0	C-SC23012-0	SC230012-0	12	20
	SN-SC230020-0	S-SC2300020-0	C-SC23012-0	SC230020-0	20	20
	SN-SC230040-0	S-SC2300040-0	C-SC23040-0	SC230040-0	40	10
	SN-SC230080-0	S-SC2300080-0	C-SC23080-0	SC230080-0	80	5
	SN-SC230120-0	S-SC2300120-0	C-SC23120-0	SC230120-0	120	5
				SC230330-0	330	1
				SC230800-0	800	1
				SC2301500-0	1500	1

Average Particle Size: 50 µm; Pore Size: 120 Å

Type	Claricep i-Series	Claricep s-Series	Claricep c-Series	Claricep	Silica Amount (g)	Quantity (pk)
Spherical C18	SN-SO150004-A	S-SO150004-A	C-SO150004-A	SO150004-A	4	20
	SN-SO150012-A	S-SO150012-A	C-SO150012-A	SO150012-A	12	20
	SN-SO150020-A	S-SO150020-A	C-SO150020-A	SO150020-A	20	20
	SN-SO150040-A	S-SO150040-A	C-SO150040-A	SO150040-A	40	10
	SN-SO150080-A	S-SO150080-A	C-SO150080-A	SO150080-A	80	5
	SN-SO150120-A	S-SO150120-A	C-SO150120-A	SO150120-A	120	5
				SO150330-A	330	1
				SO150800-A	800	1
				SO1501500-A	1500	1

Claricep™ Bulk Media Ordering Information

Bulk Silica Gel Media from Bonna-Agela Technologies (Average Pore Size: 60 Å)

Part. No.	Grade	Particle Size	Pack
CS605001-P	P	40-60 μm	1 kg
CS605002-P	P	40-60 μm	2.5 kg
CS605005-P	P	40-60 μm	5 kg
CS605025-P	P	40-60 μm	25 kg
CS605001-G	G	40-60 μm	1 kg
CS605002-G	G	40-60 μm	2.5 kg
CS605005-G	G	40-60 μm	5 kg
CS605025-G	G	40-60 μm	25 kg
CS608001-P	P	70-90 μm	1 kg
CS608002-P	P	70-90 μm	2.5 kg
CS608005-P	P	70-90 μm	5 kg
CS608025-P	P	70-90 μm	25 kg
CS608001-G	G	70-90 μm	1 kg
CS608002-G	G	70-90 μm	2.5 kg
CS608005-G	G	70-90 μm	5 kg
CS608025-G	G	70-90 μm	25 kg

P: Reagent Grade; G: Technical Grade

Irregular Silica; Average Particle Size: 40-60 μm;

Type	New Part. No.	Pore Size (Å)	Pack (g)	Old Part. No.
Claricep Silica(CM) Deactivated Silica	FCM140100-0	60	100	
	FCM1401000-0	60	1000	
	FCM1405000-0	60	5000	
Claricep C18	FCO140100-0	60	100	CO605000
	FCO1401000-0	60	1000	CO605001
	FCO1405000-0	60	5000	CO605005
	FCO240100-0	100	100	
	FCO2401000-0	100	1000	
	FCO2405000-0	100	5000	
	FCO140100-T	300	100	
	FCO1401000-T	300	1000	
	FCO1405000-T	300	5000	
Claricep Amide (HILIC)	FCH140100-0	60	100	CH605000
	FCH1401000-0	60	1000	CH605001
	FCH1405000-0	60	5000	CH605005
Claricep NH_2	FCN140100-0	60	100	CN605000
	FCN1401000-0	60	1000	CN605001
	FCN1405000-0	60	5000	CN605005

Type	New Part. No.	Pore Size (Å)	Pack (g)	Old Part. No.
Claricep C8	FC8140100-0	60	100	
	FC81401000-0	60	1000	
	FC81405000-0	60	5000	
Claricep SAX	FCS140100-AX	60	100	SAX605000
	FCS1401000-AX	60	1000	SAX605001
	FCS1405000-AX	60	5000	SAX605005
Claricep SCX	FCS140100-CX	60	100	SCX605000
	FCS1401000-CX	60	1000	SCX605001
	FCS1405000-CX	60	5000	SCX605005
Claricep Alumina Neutral	FCA140100-N	60	100	CAN605000
	FCA1401000-N	60	1000	CAN605001
	FCA1405000-N	60	5000	CAN605005
Claricep Alumina Basic	FCA140100-B	60	100	CAB605000
	FCA1401000-B	60	1000	CAB605001
	FCA1405000-B	60	5000	CAB605005
Claricep Alumina Acidic	FCA140100-A	60	100	CAA605000
	FCA1401000-A	60	1000	CAA605001
	FCA1405000-A	60	5000	CAA605005

Spherical Silica; Average particle size: 20-45 µm: Average pore size: 60 Å.

Type	New Part. No.	Pack (g)
Claricep Spherical Silica (CS) Standard Silica	FSS130100-0	100
	FSS1301000-0	1000
	FSS1305000-0	5000

Spherical Silica; Average particle size: 20-45 µm: Average pore size: 100 Å.

Type	New Part. No.	Pack (g)
Claricep Spherical Silica (CM) Deactivated Silica	FSM230100-0	100
	FSM2301000-0	1000
	FSM2305000-0	5000
Claricep Spherical C18	FSO230100-0	100
	FSO2301000-0	1000
	FSO2305000-0	5000
Claricep Spherical AQ C18	FSQ230100-0	100
	FSQ2301000-0	1000
	FSQ2305000-0	5000
Claricep Spherical HLP	FSHL230100-0	100
	FSHL2301000-0	1000
	FSHL2305000-0	5000
Claricep Spherical Amide (HILIC)	FSH230100-0	100
	FSH2301000-0	1000
	FSH2305000-0	5000
Claricep Spherical NH_2	FSN230100-0	100
	FSN2301000-0	1000
	FSN2305000-0	5000

Spherical Silica; Average particle size: 50 μm: Average pore size: 120 Å.

Type	New Part. No.	Pack (g)
Claricep Spherical C18	FSO150100-A	100
	FSO1501000-A	1000
	FSO1505000-A	5000

Cross-reference for Columns

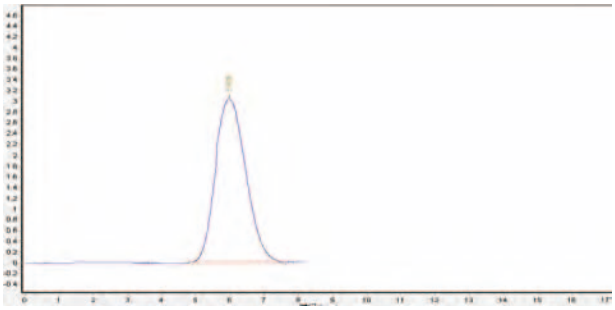
Bonna-Agelal	SCO	UCT	Luknova	Biotage	AnalogixG	Supelco	race	Silica (Weight)
CS140004	68-2203-025 (68-2207-407)	FUSIL12S-20	FC003004		1368-8		8618502	4 g
CS140012	68-2203-026 (68-2207-404)	FUSIL12M-20	FC003012	FSKO-1107-0010	1369-7		8618522	12 g
CS140020			FC003025	FSK0 - 1107-0025	1404-6			20 g
CS140040	68-2203-027 (68-2207-405)	FUSIL40S-12	FC003040	FSKO-1107-0050	1281-6	97704-u	8618521	40 g
CS140080	68-2203-198	FULSIL40M-12	FC003080		1213-6		8618520	80 g
CS140120	68-2203-024 (68-2207-406)	FUSIL40L-12	FC003120		1217-4	97706-u	8618509	150 g
CS140330	68-2203-058 (68-2207-408)	FUSIL65M-6	FC003330	FSK0 - 1107-0340	1219-3	97708-u	8618525	330 g
CS140800	68-2203-275 (68-2207-411)							800 g
CS141500	68-2203-277 (68-2207-412)							1500 g

Glass Columns

The glass chromatography columns manufactured by Bonna-Agela Technologies are in an enhanced format of column housing. A complete line of high quality sorbents provides unique or better separation performance to meet customers' needs. The unique CM silica and amide-bonded silica extend the application of normal phase to the separation of very polar compounds.

Features and Benefits

- Good pressure tolerance: can be used at higher flow rate to speed up separation
- Broad chemical compatibility: convenient for broad applications.
- Polymer coated glass: providing extra safety
- Special column inlet design improves performance, peak shape and efficiency.
- Fast solid sample loading.



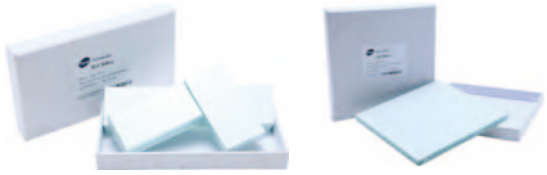
Sample: dimethyl-o-phthalate
Glass Column: 40-60 μm C18 (G31026-1)
Mobile: MeOH: water = 85:15

Specification Data Sheet

Part. No.	Pressure (bar)	Column ID(mm)	Column Length(mm)	Packed Silica weight 40-60μm(g)	Loading weight (g)
G31015-1	50-40	15	310	45	0.45--4.5
G46015-1	50-40	15	460	70	0.70--7.0
G92015-1	50-40	15	920	140	1.40--14.0
G31026-1	40-30	26	310	130	1.30--13.0
G46026-1	40-30	26	460	200	2.00--20.0
G92026-1	40-30	26	920	400	4.00--40.0
G31036-1	40-30	36	310	240	2.40--24.0
G46036-1	40-30	36	460	350	3.50--35.0
G92036-1	40-30	36	920	700	7.00--70.0
G31049-1	30-20	49	310	450	4.50--45.0
G46049-1	30-20	49	460	650	6.50--65.0
G92049-1	30-20	49	920	1300	13.0--130.0
G31070-1	15	70	310	880	8.80--88.00
G46070-1	15	70	460	1300	13.0--130.0
G92070-1	15	70	920	2600	26.0--260.0
G31000-1	10	100	310	1900	19.0--190.0
G46000-1	10	100	460	2750	27.5--275.0
G92000-1	10	100	920	5500	55.5--550.0

Thin Layer Chromatography (TLC)

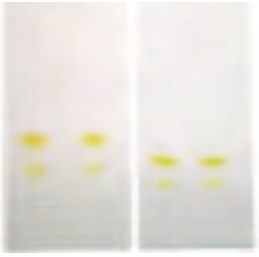
Bonna-Agela carries a full line of thin layer chromatography (TLC) plates with a variety of chemistries. They are flexible or glass backed for easy use. When matching with Claricep flash cartridges, the TLC plates serve as a tool for reaction monitoring and method development based on Rf values for flash chromatography.



Traditional Silica with a Variety of Selectivity Match

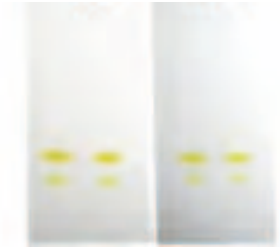
We offer traditional bare silica based products with the best performance to cost value. M series feature an equivalent selectivity to popular EMD plates, while G series have a very good match with most of Flash chromatography columns.

1-Comparison of G-series with EMD plates



AgelaA MerckM

2-Comparison of M-series with EMD plates



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Deactivated Silica Media for TLC

The CM silica is a unique media developed by Bonna-Agela Technologies to reduce peak tailing and to alleviate overly strong retention of polar compounds on unmodified silica. The following figures present a comparison of performance for Bonna-Agela's deactivated silica vs. unmodified silica.

Amide-bonded Silica for TLC

Following the success of Bonna-Agela's Unisol Amide HPLC columns, we are now introducing Amide (HILIC) phases for the TLC applications. The Amide (HILIC) is a silica media bonded with short chain amide, which may interact more with the polar compounds to perform separation. Amide TLC plates are compatible with all non-polar, polar and aqueous solvents.

Sample: Aniline and Caffeine

Silica Amide Silica CM

TLC Plate Ordering Information

TLC Plate Type	Part. No.	Specification/mm	Package (pcs/pk)
Standard Silica	T-CS7525-0	25×75 mm, pH=7.0, G, glass back	50
	T-CSF7525-0	25×75 mm, pH=7.0, GF254, glass back	50
	T-CS7525-M	25×75 mm, pH=5.0 (equivalent to EMD) M, glass back	50
	T-CSF7525-M	25×75 mm, pH=5.0 (equivalent to EMD) MF254, glass back	50
	T-CS10050-M	50×100 mm pH=5.0 (equivalent to EMD) M, glass back	40
	T-CSF10050-M	50×100 mm pH=5.0 (equivalent to EMD) MF254, glass back	40
	T-CS100100-M	100×100 mm, pH=5.0 (equivalent to EMD) M, glass back	20
	T-CSF100100-M	100×100 mm, pH=5.0 (equivalent to EMD) MF254, glass back	20
	T-CS200200-0	200×200 mm, G, glass back	10
	T-CSF200200-0	200×200 mm, GF254, glass back	10
	T-CS200200-M	200×200 mm, pH=5.0 (equivalent to EMD) M, glass back	10
	T-CSF200200-M	200×200 mm, pH=5.0 (equivalent to EMD) MF254, glass back	10
	T-CS200200-A	200×200 mm, pH=5.0 (equivalent to EMD) M, aluminum back	20
	T-CSF200200-A	200×200 mm, pH=5.0 (equivalent to EMD) MF254, aluminum back	20
Deactivated Silica	T-CM7525-0	25×75 mm, G, glass back	50
	T-CMF7525-0	25×75 mm, GF254, glass back	50
	T-CM200200-0	200×200 mm, G, glass back	10
	T-CMF200200-0	200×200mm, GF254, glass back	10
Amide (HILIC)	T-CH7525-0	25×75 mm, 60 Å, G	50
	T-CHF7525-0	25×75 mm, 60 Å, GF254	50
	T-CH200200-0	200×200 mm, 60 Å, G	10
	T-CHF200200-0	200×200 mm, 60 Å, GF254	10
NH_2	T-NH7525-0	25×75 mm, G, glass back	50
	T-NHF7525-0	25×75 mm, GF254, glass back	50
	T-NH200200-0	200×200 mm, G, glass back	10
	T-NHF200200-0	200×200 mm, GF254, glass back	10
Preparative TLC Plate (Standard Silica)	TZ-CS200200-0	200×200 mm, G, prep, glass back layer thickness 1000 μm	10
	TZ-CSF200200-0	200×200 mm, GF254, prep, glass back layer thickness 1000 μm	10
	TZ-CS20020020-0	200×200 mm, G, prep, glass back, layer thickness 2000 μm	10
	TZ-CSF20020020-0	200×200 mm, GF254, prep, glass back, layer thickness 2000 μm	10

All silica: Particle Size 10-15 μm; Surface Area 480-500 m^2/g; Pore Size 60 Å; M, MF: pH=5.0; G, GF, pH=7.0;
Layer thickness: 250 μm (except for preparative TLC, 1000 um and 2000 um).

Other Purification Products

Quick Work-up Cartridges

They are specially designed to replace the conventional aqueous work up procedure such as liquid-liquid extraction as a part of organic synthesis and purification. They are used as a filter-through method to quickly work up reaction mixtures or purification.

How to use:

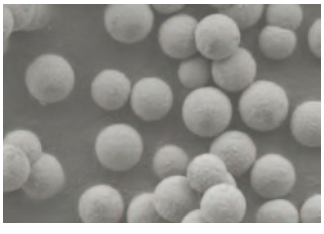
1. A synthetic mixture is injected directly injected onto a column.
2. Chose a solvent which is not immiscible with water to rinse the desired compounds out of c olumn.
3. Concentrate the collected solution.
4. Add the concentrated mixture to a flash column or a HPLC column for further separation.

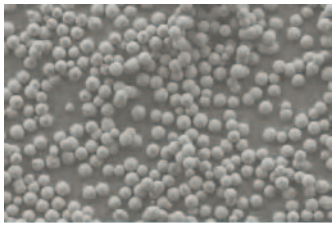
Quick Work-up Cartridge Ordering Information

Part. No.	Phase	Specification	Quantity (PK)
QW9001	C18	1 mL; IC	50
QW9003	C18	3 mL; IC	50
QW9006	C18	6 mL	30
QWC001	Celite	1 mL; IC	50
QWC003	Celite	3 mL; IC	50
QWC006	Celite	6 mL	30
QWH001	Amide	1 mL; IC	50
QWH003	Amide	3 mL; IC	50
QWH006	Amide	6 mL	30
QWS001	SCX	1 mL; IC	50
QWS003	SCX	3 mL; IC	50
QWS006	SCX	6 mL	30
QWA001	SAX	1 mL; IC	50
QWA003	SAX	3 mL; IC	50
QWA006	SAX	6 mL	30
QWP001	PEP	1 mL; IC	50
QWP003	PEP	3 mL; IC	50
QWP006	PEP	6 mL	30
QWM001	Catalyst/metal removal	1 mL; IC	50
QWM003	Catalyst/metal removal	3 mL; IC	50
QWM006	Catalyst/metal removal	6 mL	30

Scavenger Media

As the advent of combinatorial chemistry and parallel synthesis, scavenger chemistry has emerging as a modern separation technique for medicinal chemists. Solid-supported bases, acids and thiols are often used for different types of post-synthesis cleanup and separation. Bonna-Agela provides a pool of different scavengers used for these purposes.





Pore Size: 60 Å; Particle Size: 40-60 µm

Type	Pk. (g)	Part. No.	Description
Si-Amine	100	SSNH0100-0	Scavenger of acids, metals, acid chlorides, isocyanates and electrophilic compounds; silica bonded with an aminopropyl group; 1.7 mmol/g
Si-Diamine	100	SSDN0100-0	Scavenger of acids, metals, acid chlorides, isocyanates and electrophilic compounds; silica bonded with a diamine group; 1.5 mmol/g
Si-Triamine	100	SSTN0100-0	Scavenger of acids, metals, acid chlorides, isocyanates and electrophilic compounds; silica bonded with a triamine group; 1.5 mmol/g
Si- TAAcOH	100	SSTH0100-0	Scavenger of acids, metals; silica bonded with alpha aminoacid group; 0.6 mmol/g
Si- TAAcONa	100	SSTA0100-0	Scavenger of acids, metals; silica bonded with aminoacid sodium ; 0.6 mmol/g
Si- Thiourea	100	SSTU0100-0	Scavenger of metals; silica bonded with a thiourea group; 1.1 mmol/g
Si- SO_3H	100	SSCX0100-0	Scavenger of amines and other organic bases; silica bonded with a benzenesulfonic group; 0.6 mmol/g
Si- quartenary amine	100	SSAX0100-0	Scavenger of acids; silica bonded with a quartenary amine carbonate ; 0.8 mmol/g
Si- imidazol	100	SSIM0100-0	Scavenger of acids, metals, acid chlorides, isocyanates and electrophilic compounds; silica bonded with an imidazole group; 1.5mmol/g
Si-Pyridine	100	SSPY0100-0	Scavenger of acids, metals, acid chlorides, isocyanates and electrophilic compounds; silica bonded with a pyridine group; 1.5 mmol/g
Si-PPh2	100	SSPP0100-0	Scavenger of acids, metals, acid chlorides, isocyanates and electrophilic compounds; silica bonded with an aminopropyl group; 1.7 mmol/g
Si-Amine	10	SSNH0010-0	Scavenger of acids, metals, acid chlorides, isocyanates and electrophilic compounds; silica bonded with a diamine group; 1.5 mmol/g
Si-Diamine	10	SSDN0010-0	Scavenger of acids, metals, acid chlorides, isocyanates and electrophilic compounds; silica bonded with a triamine group; 1.5 mmol/g
Si-Triamine	10	SSTN0010-0	Scavenger of acids, metals; silica bonded with alpha aminoacid group; 0.6 mmol/g
Si- TAAcOH	10	SSTH0010-0	Scavenger of metals; silica bonded with a thiourea group; 1.1 mmol/g
Si- TAAcONa	10	SSTA0010-0	Scavenger of amines and other organic bases; silica bonded with a benzenesulfonic group; 0.6 mmol/g
Si- Thiourea	10	SSTU0010-0	Scavenger of acids; silica bonded with a quartenary amine carbonate ; 0.8 mmol/g
Si- SO_3H	10	SSCX0010-0	Scavenger of acids, metals, acid chlorides, isocyanates and electrophilic compounds; silica bonded with an imidazole group; 1.5mmol/g
Si- quartenary amine	10	SSAX0010-0	Scavenger of acids, metals, acid chlorides, isocyanates and electrophilic compounds; silica bonded with a pyridine group; 1.5 mmol/g
Si- imidazol	10	SSIM0010-0	Scavenger of metals, and solid supported catalyst ; silica bonded with a diphenylphosphine group; 0.5 mmol/g
Si-Pyridine	10	SSPY0010-0	Scavenger of acids, metals, acid chlorides, isocyanates and electrophilic compounds; Polystyrene bonded with an aminopropyl group; 2.5 mmol/g
Si-PPh2	10	SSPP0010-0	Scavenger of acids, metals, acid chlorides, isocyanates and electrophilic compounds; Polystyrene bonded with a diamine group; 2.3 mmol/g
PS-Amine	100	PSNH0100-0	Scavenger of acids, metals, acid chlorides, isocyanates and electrophilic compounds; Polystyrene bonded with a triamine group; 2.0 mmol/g
PS-Diamine	100	PSDN0100-0	Scavenger of acids, metals; silica bonded with aminoacid sodium ; 0.6 mmol/g, 60A, 40-60 µm silica
PS-Triamine	100	PSTN0100-0	Scavenger of metals, and solid supported catalyst ; silica bonded with a diphenylphosphine
PS- Thiol	100	PSTL0100-0	Scavenger of metals and electrophilics; Polystyrene bonded with a thiol group; 2.0 mmol/g
PS- TAAcOH	100	PSTH0100-0	Scavenger of acids, metals; Polystyrene bonded with alpha aminoacid group; 1.4 mmol/g

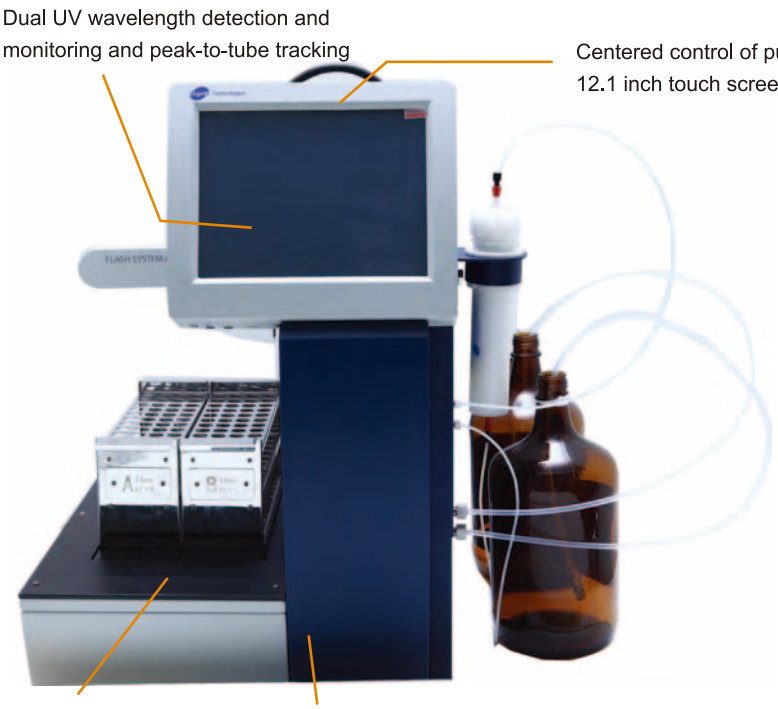
Type	Pk. (g)	Part. No.	Description
PS- TAAcONa	100	PSTA0100-0	Scavenger of acids, metals; Polystyrene bonded with aminoacid sodium ; 1.4 mmol/g
PS- Thiourea	100	PSTU0100-0	Scavenger of metals; Polystyrene bonded with a thiourea group; 1.6 mmol/g
PS- SO_3H	100	PSCX0100-0	Scavenger of amines and other organic bases; Polystyrene bonded with a benzenesulfonic group; 2.0 mmol/g
PS- quartenary amine	100	PSAX0100-0	Scavenger of acids; polystyene bonded with a quartenary amine carbonate ; 2.0 mmol/g
PS- morpholine	100	PSMP0100-0	Scavenger of acids, metals, acid chlorides, isocyanates and electrophilic compounds; Polystyrene bonded with a morpholine group; 2.2mmol/g
PS-borohydride	100	PSBH0100-0	Solid supported reducing agent; Polystyrene bonded with a boron hydride group; 1.5 mmol/g
PS-hydrazide	100	PSHD0100-0	Scavenger of aldehydes and electrophilics ; Polystyrene bonded with a sulfonyl hydrazide group; 2.0 mmol/g
PS-Amine	10	PSNH0010-0	Scavenger of acids, metals, acid chlorides, isocyanates and electrophilic compounds; Polystyrene bonded with an aminopropyl group; 2.5 mmol/g
PS-Diamine	10	PSDN0010-0	Scavenger of acids, metals, acid chlorides, isocyanates and electrophilic compounds; Polystyrene bonded with a diamine group; 2.3 mmol/g
PS-Triamine	10	PSTN0010-0	Scavenger of acids, metals, acid chlorides, isocyanates and electrophilic compounds; Polystyrene bonded with a triamine group; 2.0 mmol/g
PS- Thiol	10	PSTL0010-0	Scavenger of metals and electrophilics; Polystyrene bonded with a thiol group; 2.0 mmol/g
PS- TAAcOH	10	PSTH0010-0	Scavenger of acids, metals; Polystyrene bonded with alpha aminoacid group; 1.4 mmol/g
PS- TAAcONa	10	PSTA0010-0	Scavenger of acids, metals; Polystyrene bonded with aminoacid sodium; 1.4 mmol/g
PS- Thiourea	10	PSTU0010-0	Scavenger of metals; Polystyrene bonded with a thiourea group; 1.6 mmol/g
PS- SO_3H	10	PSCX0010-0	Scavenger of amines and other organic bases; Polystyrene bonded with a benzenesulfonic group; 2.0 mmol/g
PS- quartenary amine	10	PSAX0010-0	Scavenger of acids; polystyene bonded with a quartenary amine carbonate; 2.0 mmol/g
PS- morpholine	10	PSMP0100-0	Scavenger of acids, metals, acid chlorides, isocyanates and electrophilic compounds; Polystyrene bonded with a morpholine group; 2.2mmol/g
PS-borohydride	10	PSBH0010-0	Solid supported reducing agent; Polystyrene bonded with a boron hydride group; 1.5 mmol/g
PS-hydrazide	10	PSHD0010-0	Scavenger of aldehydes and electrophilics ; Polystyrene bonded with a sulfonyl hydrazide group; 2.0 mmol/g

Purification System

CHEETAH™ Series Flash Purification Systems

Bonna-Agela Technologies introduce CHEETAH MP Series preparative chromatography system to significantly improve the throughput of purification for synthetic and natural product chemistries. CHEETAH MP Series are designed to automate purification process with online peak detection and fraction collection. The series include two platforms, CHEETAH MP100 and MP200 with different flow capacities.
The systems are revolutionized replacement of traditional column chromatography.

Terminator of Traditional Column Chromatography...




Safenet Limited
EC Examination Certificate

Main Features:

√ Fully Integrated and Automatic: streamline your purification just by clicking a button.
√ Expandability: optional components such as a secondary detector can be added upon request.
√ Compatibility: compatible with any flash columns on the market such as disposable and glass columns.

Advantages of CHEETAH™:

√ Simple operation and fast process for any purification.
√ Low Cost: cCompetitive with any competitors yet no compromise on performance.
√ Large Capacity: delivers a wide range of sample scale from mg to Kg.
√ Large Capacity:versatile gradient makes difficult separation ever faster.

CHEETAH™ MP Technical Specifications

CHEETAH MP						
CHEETAH MP 100	FS-8200	FS-8204	FS-8200T	FS-8204T	FS-8200S	FS-8204S
CHEETAH MP 200	FS-9200	FS-9204	FS-9200T	FS-9204T	FS-9200S	FS-9204S
Solvent Delivery Pump	Binary	Quaternary	Binary	Quaternary	Binary	Quaternary
	CHEETAH MP 100：Flow Rate: 1-100 mL/min; Max. pressure: 200 psi CHEETAH MP 200：Flow Rate: 1-200 mL/min; Max. pressure: 200 psi					
Detector	Wavelength Range: 200-400 nm Wavelength Accuracy: ±0.5 nm; Absorbance Range: 0-2 AU		Wavelength Range: 200-400 nm Wavelength Accuracy: ±1 nm; Absorbance Range: 0-5 AU		Wavelength Range: 200-800 nm Wavelength Accuracy: ±1 nm; Absorbance Range: 0-5 AU	
	Dual wavelength detector					
Collector	Collection container: 13, 15, 18 or 25 mm tube; and 100 mL round-bottomed flask; and self defined coordinates for customized collection					
Compatibility	Compatible with other detector such as ELSD and RI					
Sample Loading	Solid/Liquid					
Collection Mode	Volume/time, UV/RI/ELSD threshold, Collect everything (All), peak based collection (Peak), manual collection (Manual) and time window based collection (Windows).					
Real-time control	Linear or step or linear/step elution with on-the-fly editing feature					
Safety	Leakage alarm, usage tracking and solvent backpressure monitoring, waste alarm					

CHEETAH™ HP 100 High Performance Prep HPLC

CHEETAH HP 100 is an automated high pressure preparative LC system from Bonna-Agela Technologies. It is an integrated system featuring binary gradient pump, UV detector and fraction collector. The system can drive back pressure up to 20 MPa, and the max flow speed is 100 mL/min. The design of the system emphasized small footprint and simple operation. It is a solution to purify complex sample employing high-solutions columns packed with small particle media.

Main Features:

- One point control via touch screen PC
- User friendly user interfaces
- Dual wavelength detection/monitor via VW detector
- Intelligent fraction collecting: Collect all, slope/threshold and time window

Applications:

- Purification complex mixture of synthetic compounds
- Isolation of biopolymers such as peptides and nucleotides
- Separation of combichem arrays
- Purification of natural products

—Higher Efficiency, Higher Speed and Higher Purity !

Cat. No	HS-1000
Solvent Delvent Pump	Binary Gradient; Flow Rate: 0.1-100.0 mL/min; Increment: 0.1 mL/min Max. pressure: ≤20 MPa
Detector	Double wavelength detection and collection; Wavelength Range: 200-400/800 nm, Wavelength Accuracy: ± 1nm; Absorbcence Range: 0 - 5.0 AU
Control Software	Memory: 1 GB; HDD: 320 GB; Touch Screen: 12.1” CPU: 1.6 GHz
Collector	By Peak, total collection, by window, manual collection, Tube rack : F1-13 mm tube, F2-15 mm tube, F3-18 mm tube, F4-25 mm tube; F5-100 mL flask

Collector* : conical flask, beaker and flask is selectable

Pump

- Proprietary technology of cam compensation results in low pulse
- Multiple-point calibration ensure accurate flow delivery
- Floating design of plunger extends lifetime of seals

Injection Valve

- 6 port manual valve
- 2 mL Loop (Standard), 1-10mL is optional
- Max Presssure 5000 psi, 1/16” OD, 0.75 ID

Prep Columns

Bonna-Agela also provides prep HPLC columns with ID 4.6-50 mm and glasss columns with ID 15-49 mm. The function of pressure alarm ensures programmed

- Easy to scale up
- Satable
- High Loading
- Wide pH range
- Wide compatibility

Columns Heater (Optional)

- Cat.No: Prep TC-500
- Temperture: 30-50 ℃
- Accuracy: ± 0.2 ℃
- Reproducibility: ≤ 0.5 ℃

Accessories for CHEETAH™ Flash Chromatography System

Part. No.	Type	Description
FS-8200-1/8GJT	Male nut	1/8 ID, Black
FS-8200-SH	Ferrule	1/8 ID, Yellow
FS-8200-F Luer	Female luer connector B	Red
FS-8200-M Luer	Male luer connector A	Red
FS-8200-1/8TFLG	Teflon tubing	1/8 ID, meter

FLEXA™ Series Purification Modules

Bonna-Agela Technologies offer a line of modular components for LC purification. The Flexa series provide flexibility of choosing a customized system based on user's specification. The option includes a variety of stand-alone pumps, detectors, and PC based control unit.

Pumps

- Different Flow Options
- Back Pressure Setting and Display
- Current Flow Display
- Touch Pad Control and LCD Display

Middle Pressure

Catalog Number	FL-GP100	FL-GP200
Max Pressure	200 psi	200 psi
Flow Range	1-100 mL	1-200 mL
Flow Precision	±2 %	±2 %
Gradient Precision	±1 %	±1 %
Gradient Type	Binary	Binary
Gradient Range	0-100 %	0-100 %

High Pressure

Catalog Number	HP-Q-P010	HP-Q-P050	HP-Q-P100
Max Pressure	42 MPa	30 MPa	20 MPa
Flow Range	0.001-10 mL/min	0.001-50 mL/min	0.001-100 mL/min
Flow Precision	±0.5 %	±0.5 %	±1 %
Gradient Precision	±1 %	±1 %	±1 %
Gradient Type	Binary	Binary	Binary
Gradient Range	1-100 %	1-100 %	1-100 %

Detector UV and UV-Vis Detectors

- Different Wavelength Options
- Auto-Zero and Attenuation Function
- Optional Bio Flow Cell

	UV Detector	UV-Vis Variable Wavelength Detector	UV-Vis Variable Wavelength Detector (Bio-compatible)	UV-Vis Variable Wavelength Detector (Bio-compatible)
Catalog No	FL-UV2040	FL-UV2080	FL-UV2080B	FL-UV2040B
Wavelength	200-400 nm	200-800 nm	200-800 nm	200-400 nm
Channel	Dual-wavelength	Dual-wavelength	Dual-wavelength	Dual-wavelength
Range	0-5AU	0-5AU	0-5AU	0-5AU
Light Source	Deuterium lamp	Deuterium lamp Tungsten lamp	Deuterium lamp Tungsten lamp	Deuterium lamp
Auto Zero	By Digital			
Screen	320×240 Pixels			

* Other wavelengths is available: 280 nm, 214 nm, 360 nm

Fraction Collector

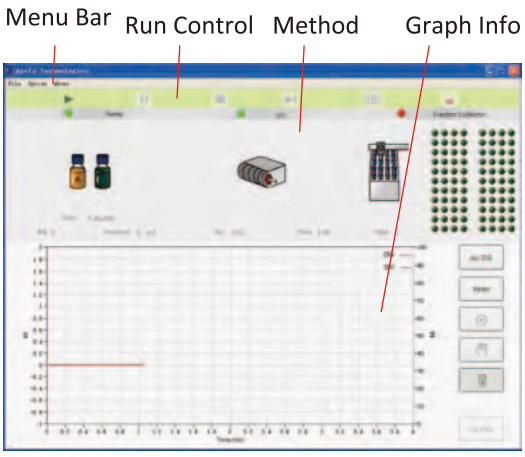
- ◆ Stand-alone Operation
- ◆ Time/Volume based Triggering
- ◆ Choice of forced collection or waste vending
- ◆ Highlighted collecting position
- ◆ Customized definition of coordinates

Catalog No	FL-C100
Collecting Configuration	Preset for 13 mm, 15 mm, 18 mm, 25 mm tubes and 100 mL flask; selfconfiguration program available 15 mm test tube: 100
Communication Port	RS232
Collection Mode	By peak (threshold), volume; Forced collection and forced waste

PC Based Control System

A PC based control system is available to users for streamlined operation or automation.

Memory	1 GB
Screen	12.1", SVGA TFT LCD 1024×768 Pixels
CPU	Intel AtomTM1.6G Hz
Graphics Card	Intel GMA950 224 MB

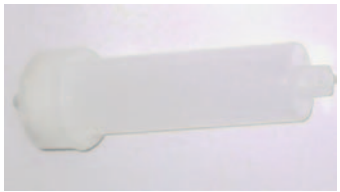


Accessories for Flash Purification Products

Fritted Empty Cartridges for Solid Sample Loading with Screw Caps

(One set of empty Flash column inlcude one column,one cap and two frit plates)

Part No.	Column Type & Description		Quantity (PK)
FCH004-C	Full set Empty column for 4 g/6 mL		100
FCH012-C	Full set Empty column for 12 g/20 mL		100
FCH020-C	Full set Empty column for 20 g/30 mL		100
FCH040-C	Full set Empty column for 40 g/60 mL		100
FCH080-C	Full set Empty column for 80 g/120 mL		100
FCH120-C	Full set Empty column for 120 g/225 mL		100
FCH004-S	Full set Empty column for 4 g/6 mL	Luer lock	100
FCH012-S	Full set Empty column for 12 g/20 mL	Luer lock	100
FCH020-S	Full set Empty column for 20 g/30 mL	Luer lock	100
FCH040-S	Full set Empty column for 40 g/60 mL	Luer lock	100
FCH080-S	Full set Empty column for 80 g/120 mL	Luer lock	100
FCH120-S	Full set Empty column for 120 g/225 mL	Luer lock	100



Fritted Empty Cartridges for Solid Sample Loading for ISCO System

(One set of empty SPE column inlcude one column and two frit plates)

Part No.	Column Type & Description	Quantity (PK)
SLC 0024-I	Full set Empty column for 12 mL	50
SLC 0040-I	Full set Empty column for 20 mL	30
SLC0150-I	Full set Empty column for 60 mL	20

Disposable Filter Cartridge

(One set of disposable filter cartridge inlcude one column and one sieve plate)

Part No.	Description	Quantity (PK)
SLC0001-F	1 mL	100
SLC0003-F	3 mL	100
SLC0006-F	6 mL	100
SLC0008-F	12 mL	100
SLC0025-F	30 mL	100
SLC0060-F	60 mL	50
SLC0150-F	150 mL	25

Cleanert Phase Separation Cartridge

Bonna-Agela provide phase separator with a PDFE member design, which can separate organic and aqueous phases effectively; 12 mL, 60 mL,150 mL volume size column are available; This product can be used to exclude water or to separate solvent phases.

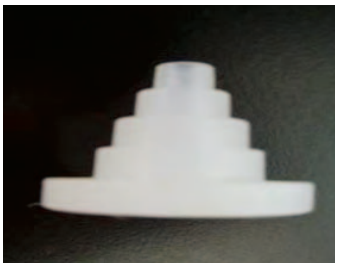
Advantages:
1) Easy to operate and time saving;
2) Efficient and economic;
3) Suitable to automated processing.

Operation:
Operation of this separation cartridge is straightforward by transferring liquid sample to the head space of cartridge that organic portion will pass through but aqueous phase will be retained. This selective filtration works well for separating very small amount aqueous or organic part of a liquid mixture.

Ordering information:

Part Number	Description	Vol	Package
PSC12	Cleanert Phase Separator Cartridge	12 mL	100
PSC60	Cleanert Phase Separator Cartridge	60 mL	50
PSC150	Cleanert Phase Separator Cartridge	150 mL	25

Universal Work-up Adapters



Part Number	Description	Package
QWT	Application for 3 mL, 6 mLand 12 mL and Cartridge	10
QWT-1	Application for 30 mL and 60 mL Cartridge	10

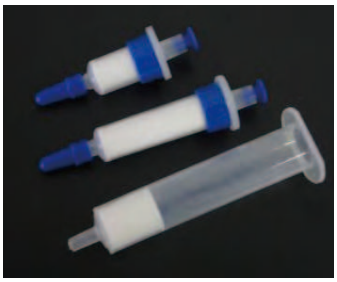
Glass Adapters

Part Number	Description	Package
SLA1420	$14/20	10
SLA1922	$19/22	10
SLA2440	$24/40	10

Pistons, seals and cartridges

Part Number	Vol	Package
SLS 0008	10 mL	1
SLS 0024	30 mL	1
SLS 0040	50 mL	1

Drying Cartridges for Quick Work-up



Part. No.	Description	Quantity(PK)
QWD001	$MgSO_4$; 1 mL; IC	50
QWD003	$MgSO_4$; 3 mL; IC	50
QWD006	$MgSO_4$; 6 mL	30

Pre-packed flash columns for other system vendors

Part No.	Column Type & Description	Quantity (PK)	
SLC6050-2512	Silica 2.5 g/12 mL Prepacked solid load cartridges	20	
SLC6050-5025	Silica 5 g/25 mL Prepacked solid load cartridges	20	Fit Isco Systems
SLC6050-10060	Silica 10 g/60 mL Prepacked solid load cartridges	16	Fit Isco Systems
SLC6050-20060	Silica 20 g/60 mL Prepacked solid load cartridges	16	Fit Isco Systems
SLC6050-25060	Silica 25 g/60 mL Prepacked solid load cartridges	16	Fit Isco Systems
SLC6050-400150	Silica 40 g/150 mL Prepacked solid load cartridges	8	
SLC6050-500150	Silica 50 g/150 mL Prepacked solid load cartridges	8	
SLC6050-700150	Silica 70 g/150 mL Prepacked solid load cartridges	8	
SLN6050-2512	NH2 2.5 g/12 mL Prepacked solid load cartridges	20	
SLN6050-5025	NH2 5 g/25 mL Prepacked solid load cartridges	20	Fit Isco Systems
SLN6050-10060	NH2 10 g/60 mL Prepacked solid load cartridges	16	Fit Isco Systems
SLN6050-20060	NH2 20 g/60 mL Prepacked solid load cartridges	16	Fit Isco Systems
SLN6050-25060	NH2 25 g/60 mL Prepacked solid load cartridges	16	Fit Isco Systems
SLN6050-400150	NH2 40 g/150 mL Prepacked solid load cartridges	8	
SLN6050-500150	NH2 50 g/150 mL Prepacked solid load cartridges	8	
SLN6050-700150	NH2 70 g/150 mL Prepacked solid load cartridges	8	
SL96050-2512	C18 2.5 g/12 mL Prepacked solid load cartridges	20	
SL96050-5025	C18 5 g/25 mL Prepacked solid load cartridges	20	Fit Isco Systems
SL96050-10060	C18 10 g/60 mL Prepacked solid load cartridges	16	Fit Isco Systems
SL96050-20060	C18 20 g/60 mL Prepacked solid load cartridges	16	Fit Isco Systems
SL96050-25060	C18 25 g/60 mL Prepacked solid load cartridges	16	Fit Isco Systems
SL96050-400150	C18 40 g/150 mL Prepacked solid load cartridges	8	
SL96050-500150	C18 50 g/150 mL Prepacked solid load cartridges	8	
SL96050-700150	C18 70 g/150 mL Prepacked solid load cartridges	8	

Other Format Columns for Solid Sample Loading

Operation:

1. Open the column
2. Add sample solution
3. Evaporate the solution
4. Cap the column
5. Put the column on the top of main separation column

Ordering information:

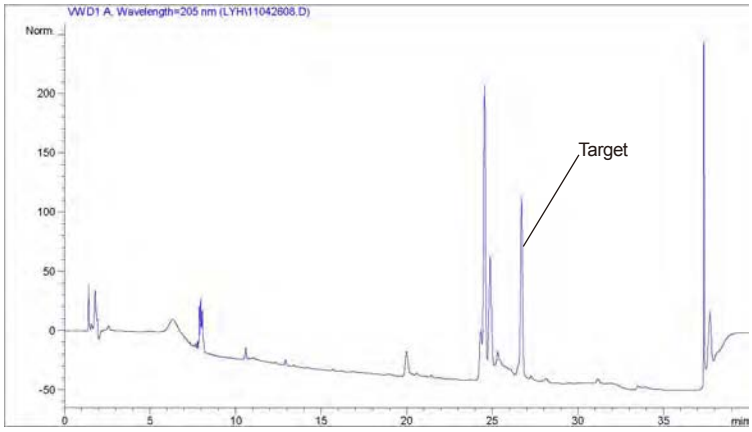
Part No.	Description	Quantity (PK)
QW001	Silica; 1 mL; IC	50
QW003	Silica; 3 mL; IC	50
S-CS140004	Silica; 4 g	20
S-CS140012	Silica; 12 g	20
S-CS140020	Silica; 20 g	20
S-CS140040	Silica; 40 g	10
S-CS140080	Silica; 80 g	5

Applications

The extraction of a polypeptide

HPLC Analysis

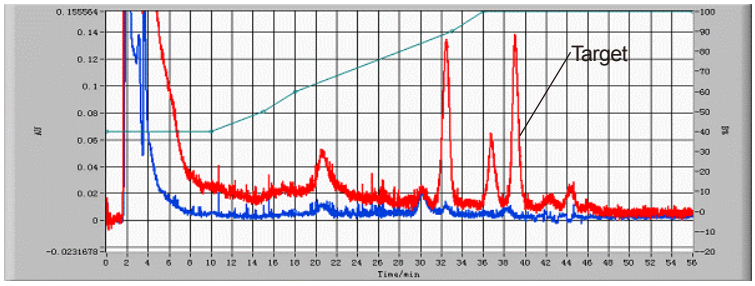
Column Venusil XBP C18, 5 μm, 100 Å, 4.6*150 mm
Mobile phase: A (water+0.01 %TFA: B (ACN) =73: 27
Flow Rate: 1 mL/min; detection: 205 nm; Sample Injection: 1 μL



HPLC chromatogram of polypeptide

Preparation

Column: Claricep™ FLASH C18 12 g, 40~60 μm, 100 Å
Mobile phase: ACN/Water; Flow Rate: 15 mL/min
Detection: UV 205 nm, 280 nm; Sample Injection: 2 mL



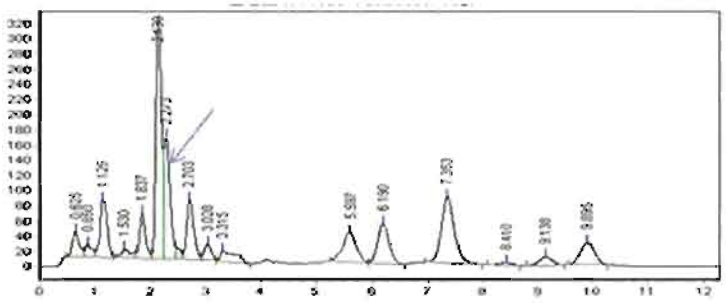
Prep chromatogram of the peptide (collection time 36-38 min)

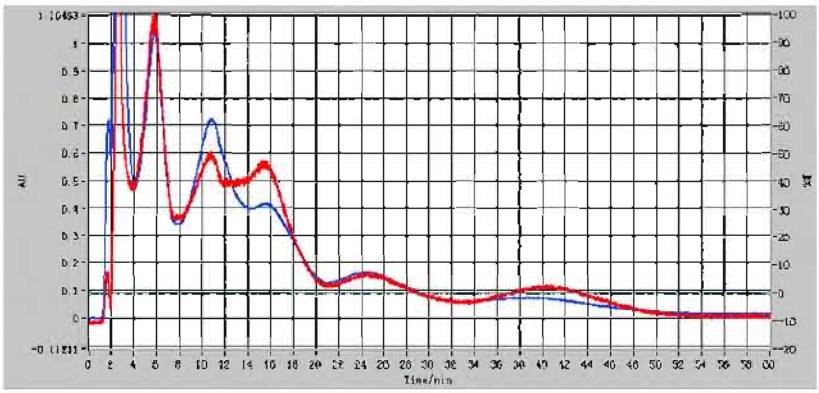
Purity test of the fraction

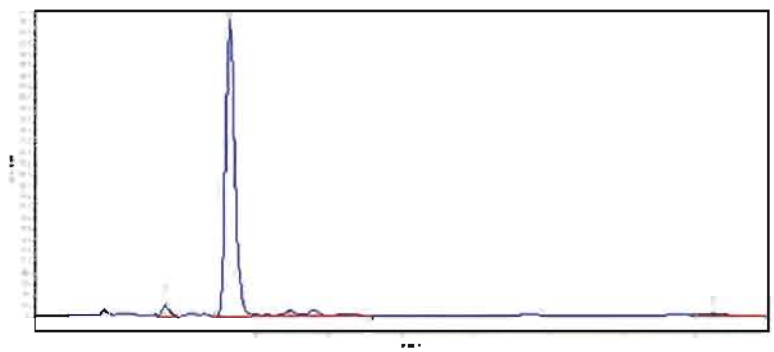
Chromatogram of the fraction

Conclusion

Claricep™ FLASH C18 gives adequate separation of the polypeptide sample with purity up to 90.1 %, and 78 % recovery.



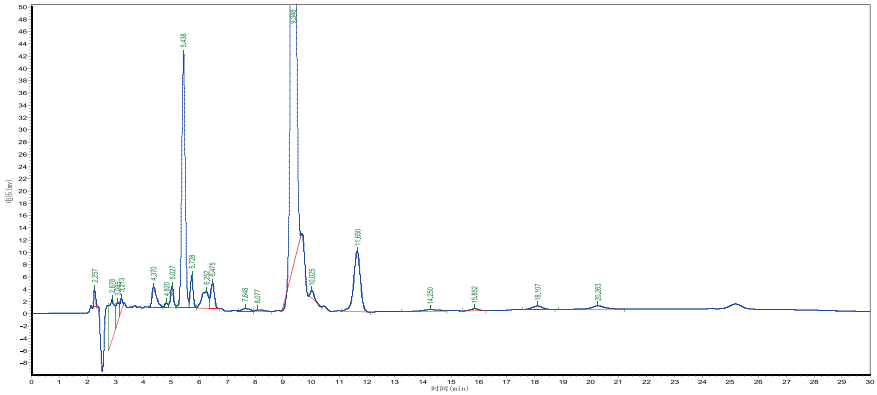




Purification of a small bioactive compound

HPLC Analysis

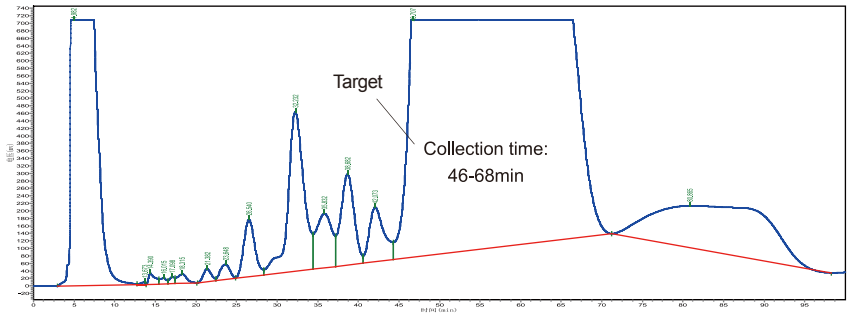
Column: Unisol C18, 4.6*150 mm, 5 μm, 150 Å
Mobile phase: A (water): B (ACN) =75:25; Flow Rate: 1.0 mL/min
Detection: UV 268 nm; Sample Injection: 1 μL



HPLC chromatogram of the sample

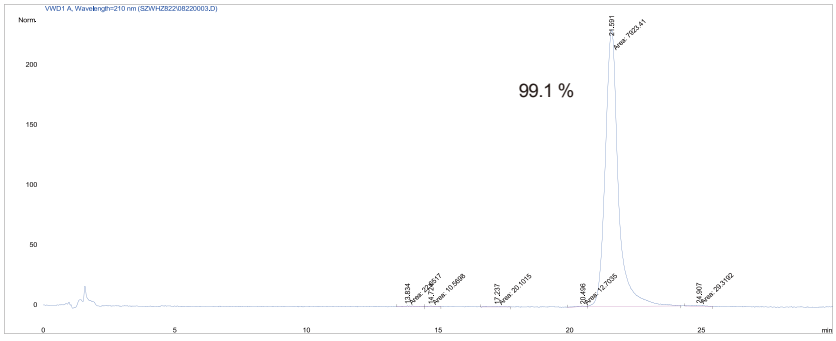
Preparation

Column: Venusil XBP Silica, 20*250 mm, 10 μm, 100 Å
Mobile phase: Dichloromethane: methanol: water = 85:20:2; Flow Rate: 23 mL/min
Detection: UV 268 nm; Sample Injection: 8.5 mL



Prep chromatogram of the sample (collection time 46-68 min)

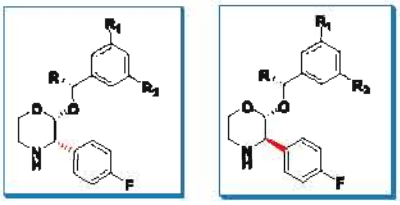
Purity test of the fraction

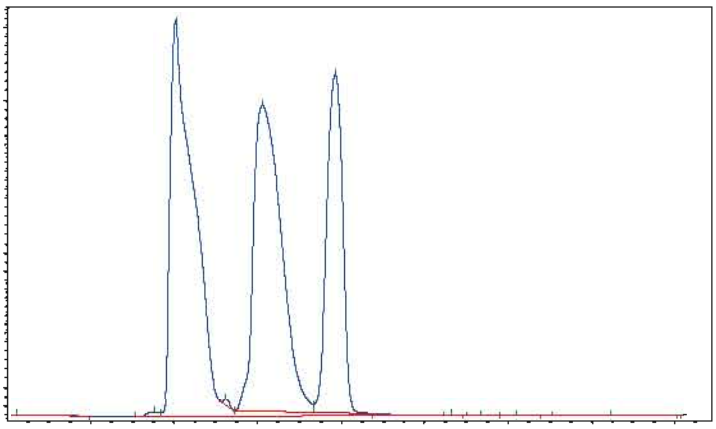


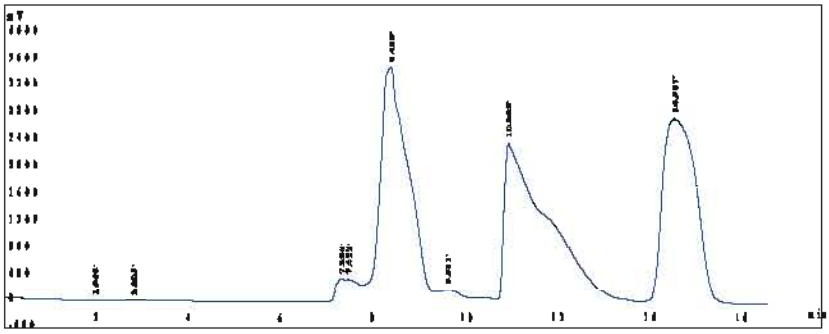
Chromatogram of the fraction

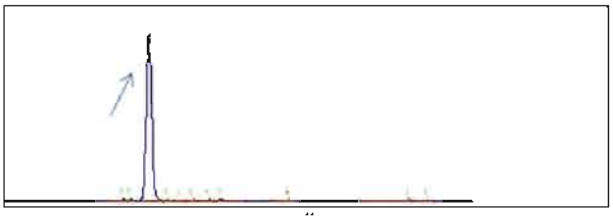
Conclusion

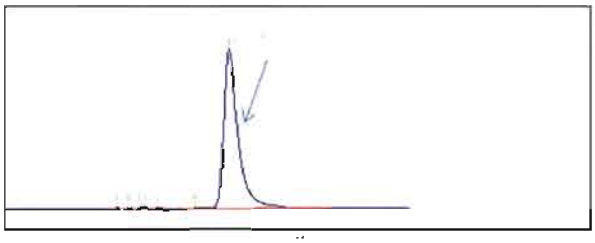
A NP purification procedure was used in this application, followed purity analysis with a reversed-phase method. It was found that loading capacity of the NP procedure was 10 times higher than reversed-phase separation. The recovery of the NP separation was above 90%, and the purity of the monomer was increased from 62% to 99% by the purification method.







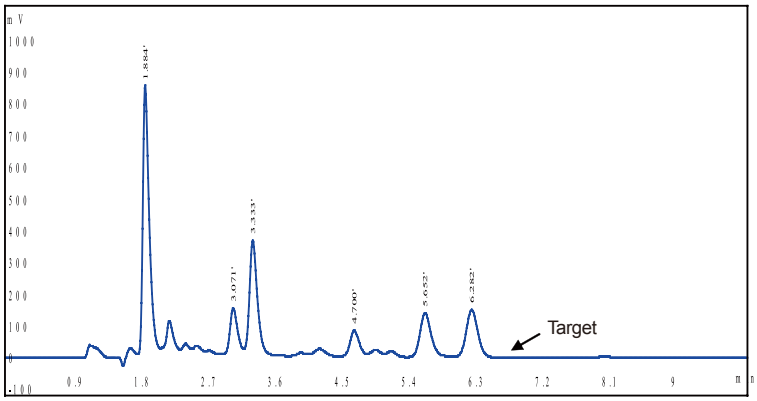




The separation of naturally occurring phenol

HPLC analysis

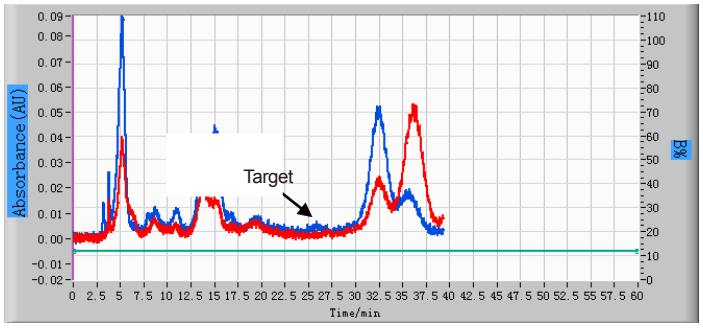
Column: Venusil XBP C18, 5 μm, 100 Å, 4.6*150 mm
Mobile phase: Methanol: water =75:25; Flow Rate: 1 mL/min
Sample Injection: 20 μL (methanol dissolved); Detection: UV 287 nm



Chromatoghram of sesame meal sample

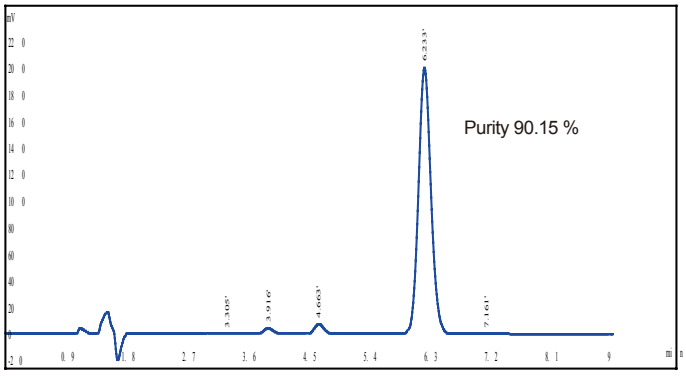
Preparation

Column: ClaricepTM Flash Si, 90 Å, 20 g* 3
Mobile phase: Ethyl acetate: petroleum ether =12:88; Flow Rate: 30 mL/min
Sample Injection: 2 mL (420 mg); Detection: UV287 nm, 254 nm



Prep chromatogram of sample (collection time 30.5-33.5 min)

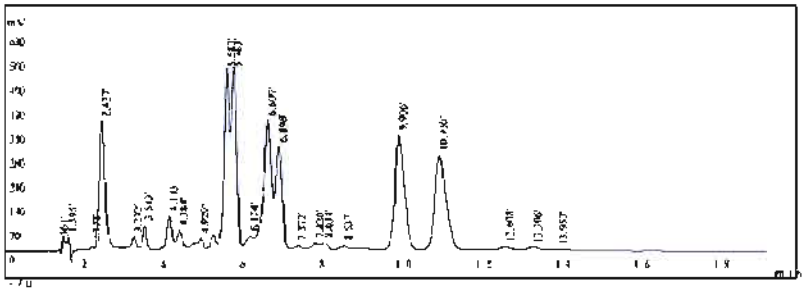
Purity test of the fraction

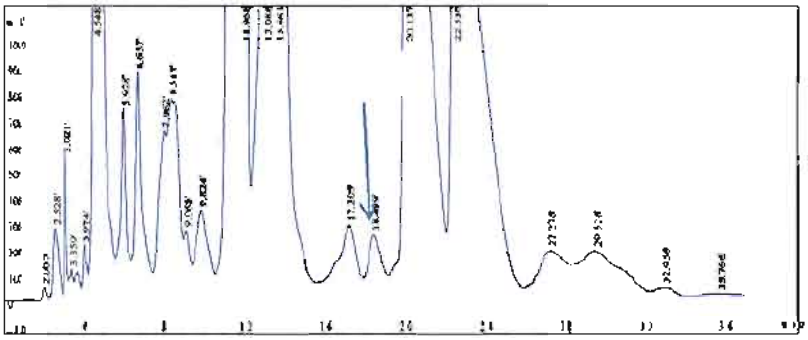


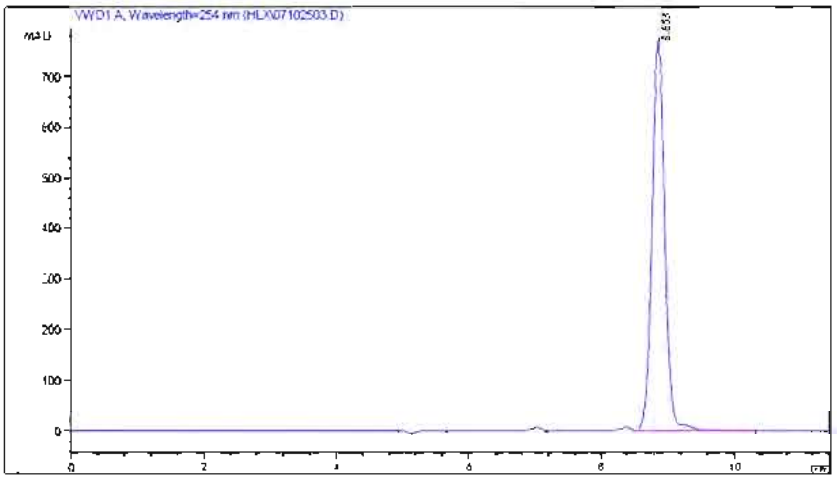
Chromatogram of fraction

Conclusions

A extraction procedure is established for the natural product. The purity of column extracted target was up to 90 %. A large volume loading method was successful for this application by NP mechanism, and the purity of the compound was detected by RP mode.





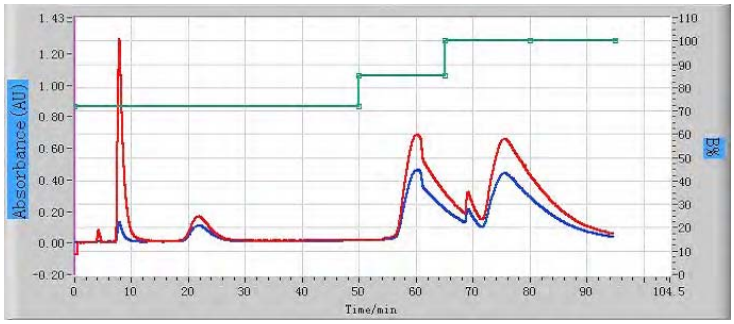

VWD1 A, Wavelength=254 nm (HLX\07102503.D)
mAU
700
600
500
400
300
200
100
0
0
2
4
6
8
10
min

The derivatives of a DNA fragment

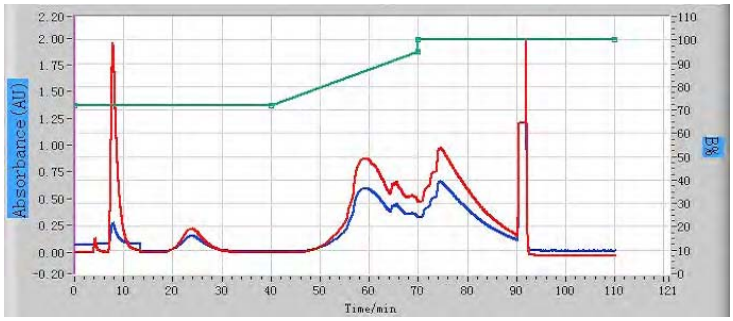
Sample: yellow power, soluble in ACN, molecular weight less than 5000

Preparation

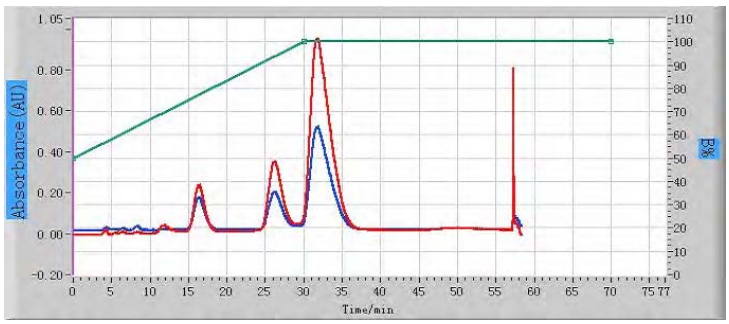
Column: 120 g Hilic Flash column (20-45 μm)
Instrument: CHEETAH MP 100
Mobile phase: Petroleum ether: ethyl acetate =30:70
Flow Rate: 50 mL/min
Detection: 240 nm, 280 nm



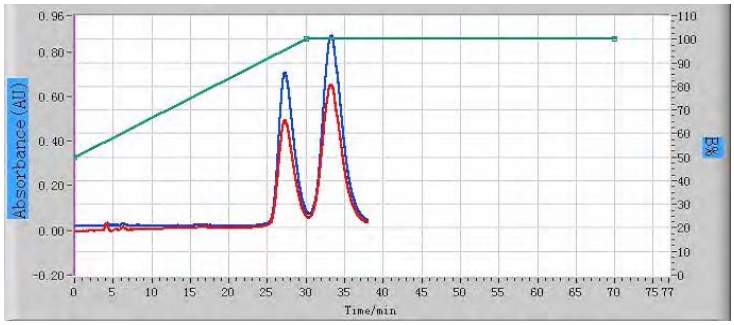
Prep chromatogram of TB-G (120 g Hilic Flash column, sample loading 1.4 g)



Prep chromatogram of TB-G (120 g Hilic Flash column, sample loading: 2.5 g）



Prep chromatogram of TB-U (120 g Hilic Flash column, sample loading: 0.8 g)



Prep chromatogram of TB-A (120 g Hilic Flash column, sample loading: 0.8 g)

Conclusions

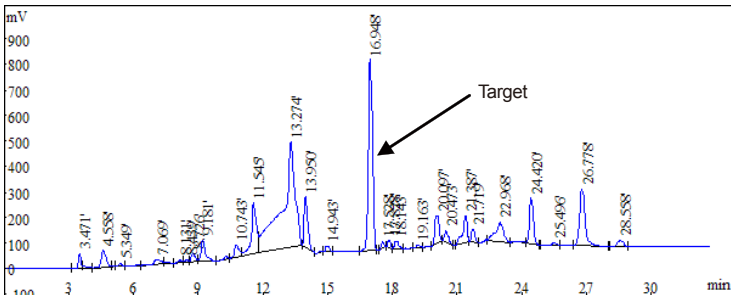
Hilic columns perform well to obtain purified derivatives of the DNA fragment. Three derivatives of the DNA fragment were prepared.

Clomazone

Crude sample is a brownish and viscous liquid with some insoluble white particles. 10 mg of the sample was dissolved in 0.5 mL methanol.

Impurity: pyridine

Semi-preparation
Column: Venusil XBP C18 (10×250 mm, 5 μm,100 Å, S/N: V9510515BI0118b)
Mobile phase: A: water B: methanol



Semi-preparation chromatogram of fraction

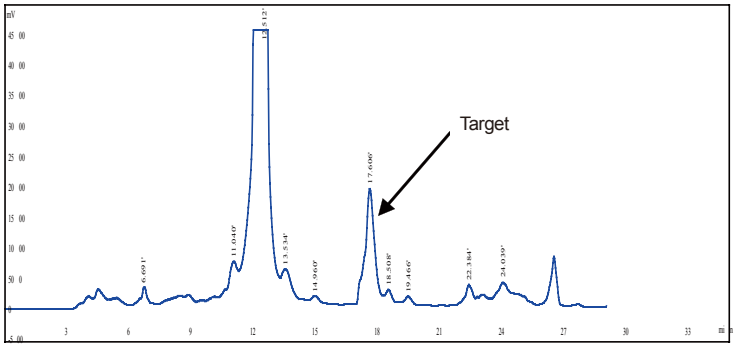
Gradient

Time	B%
0	60
20	90
30	90

Detection: UV 230 nm
Flow Rate: 4 mL/min;
Sample Injection: 20 μL

Preparation

Column; Venusil XBP C18 (20×250 mm, 5 μm,100 Å, S/N: V9510515BI0118b)
Mobile phase: A: water B: methanol



Prep chromatogram of fraction

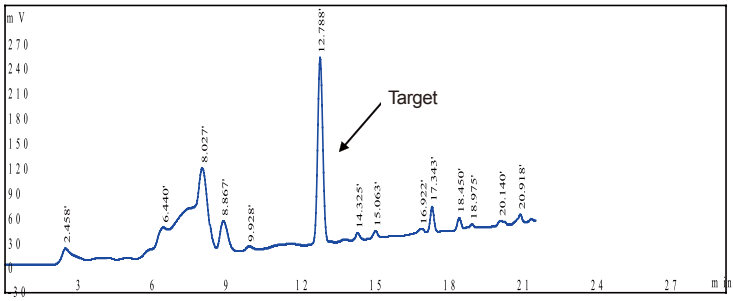
Gradient

Time	B%
0	60
20	90
30	90

Detection: UV 230 nm
Flow Rate: 16 mL/min;
Sample Injection: 1 mL (dissolve 1 g with 5 mL methanol)

HPLC analysis

Column: Venusil XBP C18 (4.6×150 mm,5 μm,100 Å, S/N: V9510525CK0300)
Mobile phase: A: water B: methanol



HPLC chromatogram of fraction

Gradient

Time	B%
0	60
20	90
30	90

Detection: UV 230 nm
Flow Rate: 1 mL/min
Sample Injection: 20 μL

Agela Technologies

Bonna-Agela Technologies
2038A Telegraph Rd.
Wilmington, DE 19808, USA
Tel: (302) 438 8798
Fax: (302) 636 9339
E-mail: info@bonnaagela.com

Bonna-Agela India
#212, 2nd Floor, Sector-63, Noida, Uttar Pradesh
Tel: 91120-4225466/67
Fax: 91120-4225465

Bonna-Agela China
179 South Street, Teda West Zone, Tianjin 300462, China
Tel:+86(22)25321032/7023
Fax:+86(22)25321033

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