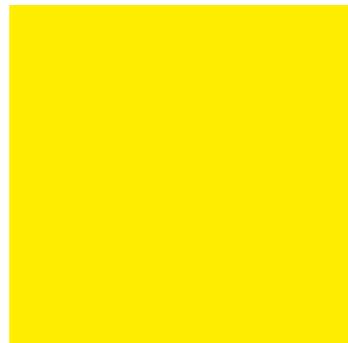
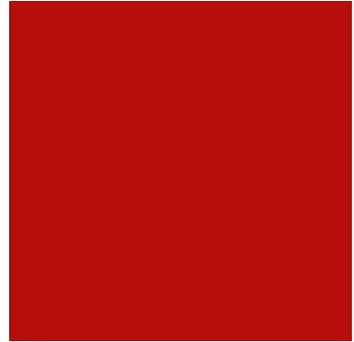
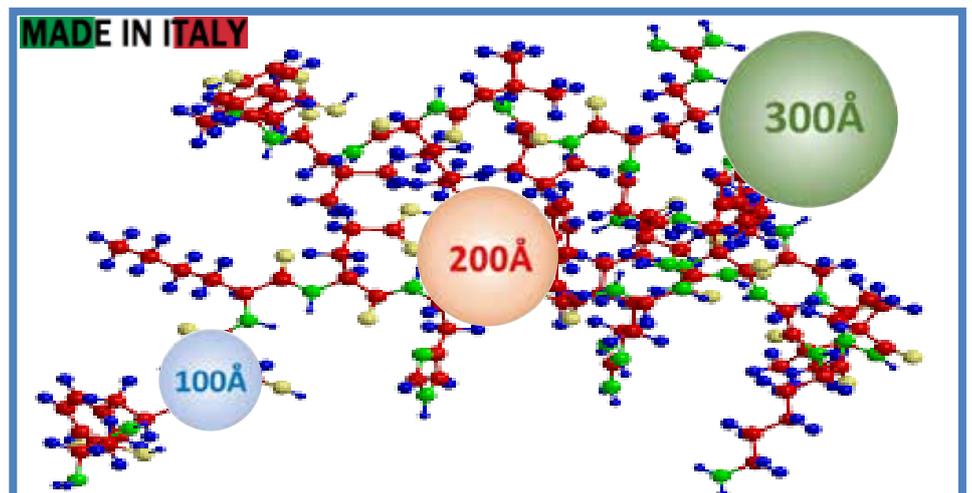


Your Specialists in Chromatography



## HPLC & Prep Columns and Media for Large Molecules Separation and Purification

**WYdamas<sup>®</sup>**



**SepaChrom**

# Analysis and Purification of Large Molecules - Introduction

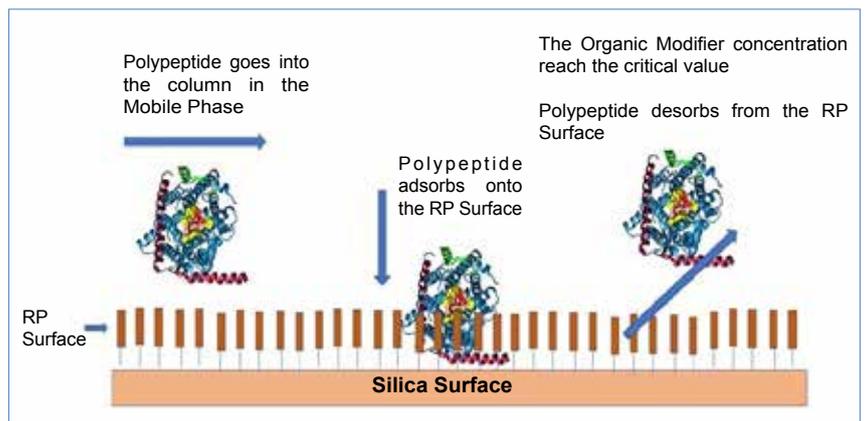
## Analysis and Purification of Peptides and Proteins by Reversed-Phase HPLC

(RP-HPLC) High Performance Liquid Chromatography in Reversed-Phase mode is the preferred choice for the analysis and purification of biomolecules. The key reason why it is the most popular choice to analyze and purify proteins and peptides is the resolution. RP-HPLC is able to separate polypeptides of nearly identical sequences, both small peptides as much larger proteins. Polypeptides with single amino acid residue difference can often be separated by RP-HPLC. Preparative RP-HPLC is often used for the purification of peptides from milligram to multigram quantities.



## Mechanism of Interaction between RP-HPLC Columns and Polypeptides

The separation of small molecules involves continuous partitioning of the molecules between the mobile phase and the hydrophobic stationary phase. As Polypeptides are too large, during the chromatographic run they adsorb to the hydrophobic surface and remain adsorbed until the change of organic modifier concentration cause their desorption. They then interact only slightly with the surface when eluting out of the column. Polypeptides have only a small part of their molecule in contact with the RP surface, commonly known as "hydrophobic foot"; large part of the molecule are exposed to the mobile phase. RP-HPLC separates polypeptides based on subtle differences in the "hydrophobic foot" of the polypeptide being separated.



## Important aspects of the adsorption/desorption mechanism of interactions between polypeptides and the hydrophobic phase.

The quantity of organic modifier required to desorb a polypeptide is very precise and consequently the desorption takes place within a very narrow range of organic modifier concentration. The sensitivity of polypeptide desorption to very precise concentrations of organic modifier explain the selectivity of RP-HPLC for the analysis of these molecules.

Sharp peaks are the result of the sudden desorption of polypeptides when the critical organic concentration is reached.

The adsorption/desorption mechanism takes place only once while the polypeptide is on the column. After its desorption, the interaction between the polypeptide and the reversed-phase surface is very little and have little effect on the separation.

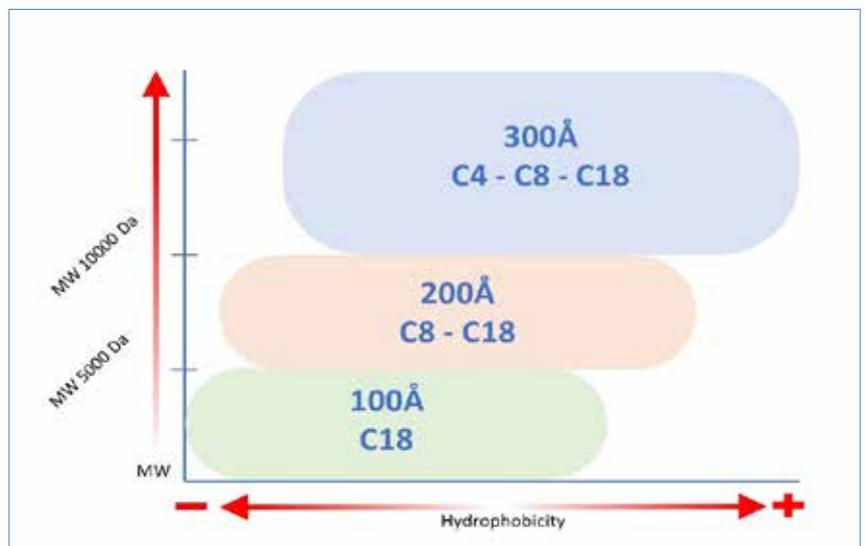
Gradient elution is usually preferred for RP-HPLC polypeptide separations, however it shall be very swallow and precise.

## The RP-HPLC Column in the Peptides and Proteins Separations

The interactive surface of a Silica Base HPLC Media is inside its pores. Polypeptides must enter into the pores in order to be adsorbed and then desorbed. Our Ultra High Purity Spherical Silica s available with three different porosities to make the most of the possibilities according with the size of the molecules of interest.

100Å pore diameter is ideal for analysis and purification of small peptides with Molecular Weight till 5000 Dalton. For larger peptides with Molecular Weight range of 5000-10000 Dalton, our 200Å pore diameter silica is the most appropriate. 300Å is the most indicate for analysis and purification of polypeptides and proteins with Molecular Weight > 10000 Dalton, up to 100K Dalton.

The particle size depend by the application you are challenging. 3-5µm are use in analytical methods (up to 4.6mmID) while the 5-10µm are preferred for a preparative laboratory scale application (up to 21.2mmID). If you need a process scale purification the choice of the particle size should go to larger particle size (15µm or >).



## Reversed-Phase Stationary Phases

Reversed-Phase HPLC adsorbents are manufactured by bonding a hydrocarbon chain to the silica base material. The hydrocarbon group forming the packing is a linear aliphatic hydrocarbon of eighteen (C18), eight (C8) or four (C4) carbons and determine the hydrophobicity of the phase. Some guidelines provide information about which packing could be the most effective for the separation of peptides and proteins.

C18 columns are usually suggested for peptides and small proteins with MW < 5000 daltons. For proteins and small polypeptides with MW range between 5000 - 10000 daltons, often a C8 or C18 columns is used, according with the hydrophobicity of the molecules.

For molecules larger than 10000 daltons and highly hydrophobic a C4 column is highly recommended, however C8 and C18 offer some-time the different selectivity which allow to separate your target compounds.

VYdamas® C8-P and VYdamas® C18-P are more suitable for polar/medium polar peptides.

<b>VYdamas® - Ultra High Purity Silica for Large Molecules Separation</b>						
Phase	Porosity	Particle Size	Surface Area	Pore Volume	Carbon Load	Metal Content*
<b>VYdamas® C4</b>	100Å	3µ-5µ-10µ-15µ-20/45µ	320 m <sup>2</sup> /g	0.80 mL/g	6 %	< 1mg/kg
	200Å	3µ-5µ-10µ-15µ-20/45µ	160 m <sup>2</sup> /g	0.80 mL/g	4 %	< 1mg/kg
	300Å	3µ-5µ-10µ-15µ-20/45µ	120 m <sup>2</sup> /g	0.80 mL/g	3 %	< 1mg/kg
<b>VYdamas® C8</b>	100Å	3µ-5µ-10µ-15µ-20/45µ	320 m <sup>2</sup> /g	0.80 mL/g	10 %	< 1mg/kg
	200Å	3µ-5µ-10µ-15µ-20/45µ	160 m <sup>2</sup> /g	0.80 mL/g	6 %	< 1mg/kg
	300Å	3µ-5µ-10µ-15µ-20/45µ	120 m <sup>2</sup> /g	0.80 mL/g	5 %	< 1mg/kg
<b>VYdamas® C8-P</b>	100Å	3µ-5µ-10µ-15µ-20/45µ	320 m <sup>2</sup> /g	0.80 mL/g	10 %	< 1mg/kg
<b>VYdamas® C18</b>	100Å	3µ-5µ-10µ-15µ-20/45µ	320 m <sup>2</sup> /g	0.80 mL/g	17 %	< 1mg/kg
	200Å	3µ-5µ-10µ-15µ-20/45µ	160 m <sup>2</sup> /g	0.80 mL/g	10 %	< 1mg/kg
	300Å	3µ-5µ-10µ-15µ-20/45µ	120 m <sup>2</sup> /g	0.80 mL/g	7 %	< 1mg/kg
<b>VYdamas® C18-P</b>	100Å	3µ-5µ-10µ-15µ-20/45µ	320 m <sup>2</sup> /g	0.80 mL/g	17 %	< 1mg/kg

\* typical value for 3µ-5µ and 10µ particle size. For 15 and 20/45µ the typical value can be higher.

## Bonding

The most commercially available reverse phase HPLC packing materials are Monomeric or Polymeric bonded phase.

When a monofunctional alkylsilane reagent is used to prepare the packing material, the functional chains have a single attachment point to the base. These are called **Monomeric** bonded phases. If di- or trifunctional alkylsilane reagent are used, the polymerically bonded phases have functional chains bound to the base silica particle at multiple attachment points and can involve cross-linking between chains. These are called **Polymeric** bonded phase. Our ultra high-purity silica phases for analysis and purification of peptides and proteins are polymerically bonded, however we can supply on request different type of bonding to offer a wide range of selectivity.

## Mobile Phase

To desorb and elute large molecules from the RP-HPLC column the aqueous mobile phase contains an organic modifier and an ion-pair reagent or buffer. The polypeptide is solubilized and desorbed from the hydrophobic surface by the organic modifier, while the ion-pair reagent or buffer sets the pH to enhance the separation. Increasing the concentration of organic modifier during the run achieve the elution of the polypeptides. The purpose of the organic modifier is to desorb the polypeptides from the hydrophobic surface.

These are most used organic modifiers :

**Acetonitrile (ACN)** : it is the most commonly used organic modifier. It is volatile, easily removed from fractions, low viscosity, minimize column back-pressure, little UV adsorption at low wavelengths, and a lot of references in the RP-HPLC polypeptide separations.

**Isopropanol** : it is commonly used for large proteins or very hydrophobic molecules, however to reduce Isopropanol viscosity it is often used mixed with Acetonitrile (50:50). In small percentage (<3%) it could increase the protein recovery.

**Ethanol** : is often referred for process scale purifications for economical reason; it comply to most important regulatory authorities

**Other solvents** : other solvents including methanol do not offer advantages compare to the most commonly used solvents for polypeptide separation and purification.

The ion-pairing reagent or buffer sets the pH of the eluent; interacting with the molecules of interest it enhances the separation.

**TFA** : The most common ion-pairing reagent is trifluoroacetic acid (TFA) due to the same reason by Acetonitrile is the preferred organic modifier. TFA is normally used at concentrations of about 0.1% (w/v). Higher concentration (up 0.5%) are used for large or high hydrophobic proteins. Lower concentration (<0.1%) are used for tryptic digest separations.

**Formic Acid** : TFA reduce the ion signal in the electrospray interface; so the use of alternative ion-pairing reagent is leading to the formic acid silylation instead of TFA. However it does not always give the same good resolution of TFA.

**Acetic Acid** : it is same of formic acid.

## pH and Temperature

Separations of Peptides are often sensitive to the eluent pH because of protonation or deprotonation of acidic or basic side-chains. pH can have a important impact on peptide selectivity and it is a great tool usable to optimize the separations.

The temperature of the column affects solvent viscosity, back pressure, retention times and it may also affect peptide and protein selectivity. Temperature is an important parameter and should be optimized in any HPLC method development for peptide and protein separation.

# HPLC Columns Formats

## HPLC Analytical, Semi-Prep and Preparative Column Formats

Choosing the right column format is critical to obtain the best performance during your analysis or purification.

### Analytical Columns Format

#### Column Length

When a new HPLC method development begins, the user has to consider the complexity of the sample and the desired run time to find the best column length for the application.

Shorter column lengths provide faster run times and solvent saving. Usually smaller particle size media in shorter column lengths achieves good resolution in shorter run time, however complex samples may need longer columns, even using smaller particle size.



#### Column Lengths Available

20-30-50mm Column Length	Fast Separations Work best with 3 µm Particle Size
75-100-125-150mm Column Length	Standard & Hi-Resolution Separations Work best with 3-5 µm Particle Size
200-250-300mm Column Length	Standard & Hi-Resolution Separations Work best with 5-10 µm Particle Size

#### Replaceable Frit

In most of the well known and popular HPLC Columns, when a backpressure increase occurs, whatever is the reason, you have to replace the expensive column.

With all the Sepachrom HPLC Columns you can replace the frit and continue to use the column till it reaches its end.



#### Column I.D.

Smaller internal diameter columns provide better mass sensitivity, smaller sample sizes injection, and reduce solvent consumption.

Wider internal diameter columns allow for larger sample sizes and minimize the negative effects of your system's dead volume.

2.1mmID columns work best with a microbore flow cell at your detector and an internal loop injector otherwise you have to tolerate some loss in efficiency and resolution.



#### Analytical Column I.D. Available

2.1mm Column I.D.	High Sensitivity and Low Sample Volume Best use with Microbore Cell and Internal Sample Loop Valve.
3.0mm Column I.D.	High Sensitivity and ideal to reduce solvent consumption Work with standard HPLC instrumentation
4.0mm Column I.D.	Standard Separations Work with standard HPLC instrumentation
4.6mm Column I.D.	Standard Separations Work with standard HPLC instrumentation

#### Full-Guard Cartridges

How can I protect my best HPLC column?

Full-Guard is the convenient protection system of your HPLC column and allows you to change the Guard Cartridge in seconds.

Select the proper reusable Holder (In-Line or Direct Connect), it works with all Full-Guard Cartridges with following IDs :

**2.1 - 3.0 - 4.0 - 4.6 mmID**

#### Full-Guard Holder

<b>CD0100</b>	Full-Guard Holder - Direct Connection
<b>CD0101</b>	Full-Guard Prep Holder - In-Line Connection



## Semi-Prep and Preparative Columns Format

### Preparative Scale-Up

In Chromatography the objectives of Preparative differ from those of Analytical separations.

In Preparative chromatography Speed and Sensitivity are usually less important than Recovery and Product Purity.

Here the 6 common steps of a Preparative Scale-Up method development :

#### Step 1 : Method Optimization

The Analytical method is optimized to achieve the max loadability through the manipulation of the mobile phase and packing selectivity.

#### Step.2 : Loading Study

It has to determine the capacity of the stationary phase. The sample loading depend also by the complexity of the mixture.

#### Step 3 : Mass Determination

The total mass to purify is used to balance the necessary throughput, purity and yield.

#### Step 4 : Scale-Up

The column size is calculated based on the output requirements.

**D = diameter      L = Length**

$$\text{Load}_{prep} = \text{Load}_{analytical} \times \left( \frac{D_{prep}}{D_{analytical}} \right)^2 \times \frac{L_{prep}}{L_{analytical}}$$

#### Step 5 : Linear Velocity

When scalin-up, the mobile phase flow rate should be adjusted proportionally to cross-sectional area of the column to maintain consistent linear velocity and retention times.

$$\text{Flow Rate}_{prep} = \text{Flow Rate}_{analytical} \times \left( \frac{D_{prep}}{D_{analytical}} \right)^2$$

#### Step 6 : Gradient

To get the resolution achieved on an analytical column while increasing column diameter, the gradient shape must be maintained by keeping the ratio of the gradient volume to the column volume constant.

Injection Load and Flow Rate Table		
Column I.D.	Load*	Flow Rate
4.6mm Column I.D.	X	1 mL/min
7.8mm Column I.D.	3X	2.88 mL/min
10mm Column I.D.	5X	4.73 mL/min
21.2mm Column I.D.	25X	21.2 mL/min
30mm Column I.D.	45X	42.5 mL/min
50mm Column I.D.	120X	118 mL/min
100mm Column I.D.	500X	473 mL/min

\*The Load Injection values suggested in the above table refer to columns with same length.

### Column Lengths & IDs

Our Preparative columns are available in the following length :  
**100mm - 150mm - 250mm**  
**and 7.8mm - 10mm - 21.2mm - 30mm & 50mmID**



#### Semi-Prep and Preparative Column I.D. Available

7.8mm Column I.D.	Semi-Prep - Very Small quantity to purify. Sample loading 3x vs. Analytical column I.D. (4.6mmID)
10.0mm Column I.D.	Semi-Prep - Small quantity to purify. Sample loading 5x vs. Analytical column I.D. (4.6mmID)
21.2mm Column I.D.	Lab Scale Prep - Standard Purification Sample loading 25x vs. Analytical column I.D. (4.6mmID)
30 & 50mm Column I.D.	Preparative - High quantity to purify Sample loading 45x120x vs. Analytical column I.D. (4.6mmID)

### Prep Full-Guard Cartridges

Often in a purification steps the sample contains undesirable molecules that can damage the Prep HPLC Column.

Expensive Preparative HPLC column deserves the best protection.

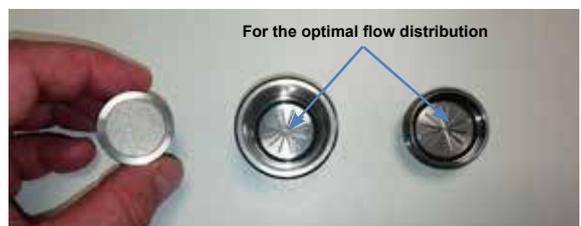
Select the proper reusable Holder according with the Prep Column I.D. and the preper Prep Guard Cartridges packed with the same material of the Prep Column.

Prep Guard Cartridges are available with 10mm length and

**7.8mm - 10mm - 21.2mm - 30mmID**

#### Full-Guard Prep Holder

<b>CX0120</b>	Full-Guard Prep Holder for 7.8 & 10mm Column I.D.
<b>CX0112</b>	Full-Guard Prep Holder for 21.2mm Column I.D.
<b>CX0121</b>	Full-Guard Prep Holder for 30 & 50mm Column I.D.



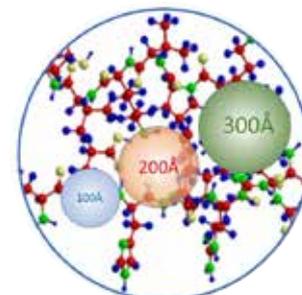


VYdamas®

Ultra High Purity Spherical Silica

- 100Å & 200Å for Peptides Analysis and Purification
- 300Å for Proteins Analysis and Purification
- 3µ - 5µ for Analytical purpose
- 5µ - 10µ - 15µ for Preparative purpose
- 20/45µ for Flash Chromatography Purification

C4



Analytical HPLC Columns

Ordering Information							
Phase	Porosity	Particle Size	Length / ID	4.6mm	4.0mm	3.0mm	2.1mm
VYdamas® C4	100Å	3µ	50mm	VD0016	VD0015	VD0014	VD0013
		3µ	100mm	VD0004	VD0003	VD0002	VD0001
		3µ	150mm	VD0012	VD0011	VD0010	VD0009
		Full-Guard - 3µ*	10mm	CD0267	CD0266	CD0265	CD0264
		5µ	100mm	VD0024	VD0023	VD0022	VD0021
		5µ	150mm	VD0032	VD0031	VD0030	VD0029
		5µ	250mm	VD0040	VD0039	VD0038	VD0037
		Full-Guard - 5µ*	10mm	CD0271	CD0270	CD0269	CD0268
	200Å	3µ	50mm	VD0060	VD0059	VD0058	VD0057
		3µ	100mm	VD0048	VD0047	VD0046	VD0045
		3µ	150mm	VD0056	VD0055	VD0054	VD0053
		Full-Guard - 3µ*	10mm	CD0275	CD0274	CD0273	CD0272
		5µ	100mm	VD0068	VD0067	VD0066	VD0065
		5µ	150mm	VD0076	VD0075	VD0074	VD0073
		5µ	250mm	VD0084	VD0083	VD0082	VD0081
		Full-Guard - 5µ*	10mm	CD0279	CD0278	CD0277	CD0276
	300Å	3µ	50mm	VD0104	VD0103	VD0102	VD0101
		3µ	100mm	VD0092	VD0091	VD0090	VD0089
		3µ	150mm	VD0100	VD0099	VD0098	VD0097
		Full-Guard - 3µ*	10mm	CD0283	CD0282	CD0281	CD0280
		5µ	100mm	VD0112	VD0111	VD0110	VD0109
		5µ	150mm	VD0120	VD0119	VD0118	VD0117
		5µ	250mm	VD0128	VD0127	VD0126	VD0125
		Full-Guard - 5µ*	10mm	CD0287	CD0286	CD0285	CD0284

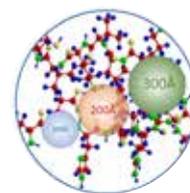
\* 3/pkg - Full-Guard Cartridges require Full-Guard Holder. Two versions available :  
 Full-Guard Holder - Direct Connection - Part.No CD0100 / In-Line Connection - Part.No CD0101

Other lengths available : 50mm - 75mm - 125mm - 200mm and 300mm.



VYdamas®

C4



Preparative HPLC Columns

- Columns with different sizes are available on request.
- Guard Cartridge require the proper Prep Full-Guard Holder
- DAC Column Technology Available on Request

Preparative HPLC Columns

		Ordering Information							
Phase		Particle Size	Length / ID	7.8mm	10.0mm	21.2mm	30.0mm	50.0mm	Guard
VYdamas® C4	100Å	5µ	100mm	VD0417	VD0415	VD0416	ASK	ASK	ASK 10mmL x ID (7.8-10-21.2-30-50mm)
		5µ	150mm	VD0420	VD0418	VD0419	ASK	ASK	
		5µ	250mm	VD0423	VD0421	VD0422	ASK	ASK	
		10µ	100mm	VD0399	VD0397	VD0398	ASK	ASK	
		10µ	150mm	VD0402	VD0400	VD0401	ASK	ASK	
		10µ	250mm	VD0405	VD0403	VD0404	ASK	ASK	
		15µ	100mm	VD0408	VD0406	VD0407	ASK	ASK	
		15µ	150mm	VD0411	VD0409	VD0410	ASK	ASK	
		15µ	250mm	VD0414	VD0412	VD0413	ASK	ASK	
	200Å	5µ	100mm	VD0444	VD0442	VD0443	ASK	ASK	ASK 10mmL x ID (7.8-10-21.2-30-50mm)
		5µ	150mm	VD0447	VD0445	VD0446	ASK	ASK	
		5µ	250mm	VD0450	VD0448	VD0449	ASK	ASK	
		10µ	100mm	VD0426	VD0424	VD0425	ASK	ASK	
		10µ	150mm	VD0429	VD0427	VD0428	ASK	ASK	
		10µ	250mm	VD0432	VD0430	VD0431	ASK	ASK	
		15µ	100mm	VD0435	VD0433	VD0434	ASK	ASK	
		15µ	150mm	VD0438	VD0436	VD0437	ASK	ASK	
	300Å	5µ	100mm	VD0471	VD0469	VD0470	ASK	ASK	ASK 10mmL x ID (7.8-10-21.2-30-50mm)
		5µ	150mm	VD0474	VD0472	VD0473	ASK	ASK	
		5µ	250mm	VD0477	VD0475	VD0476	ASK	ASK	
		10µ	100mm	VD0453	VD0451	VD0452	ASK	ASK	
		10µ	150mm	VD0456	VD0454	VD0455	ASK	ASK	
		10µ	250mm	VD0459	VD0457	VD0458	ASK	ASK	
		15µ	100mm	VD0462	VD0460	VD0461	ASK	ASK	
		15µ	150mm	VD0465	VD0463	VD0464	ASK	ASK	
		15µ	250mm	VD0468	VD0466	VD0467	ASK	ASK	



20 bar  
100 mL/min

## puriFlash® 5.020B

*The proteins specialist*

Quaternary Gradient Pump  
Washing Disc + Pump

Injection  
Liquid injection  
w/column equilibration.

Load & Go™ technology:  
through automated  
6 port electric valve

Detection  
PF-5.020B: UV: 254 & 280nm  
PF-5.020B + Pack-UV: UV: 200-400nm  
(Multi wavelength & Scan collection  
Spectral view & Purity confirmation)

InterSoft® X "Genius"  
User-friendly  
Click & Drag Gradient  
Intelligent Isocratic Mode

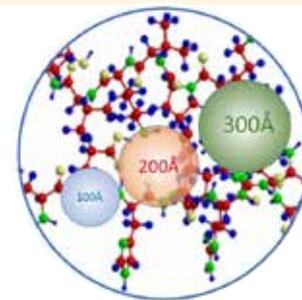
Unit Control  
15" touch screen  
Remote Control  
USB x8 - RJ45

Solvent tray w/drainage system

Pre-cols holder



C8



VYdamas®

Ultra High Purity Spherical Silica

- 100Å & 200Å for Peptides Analysis and Purification
- 300Å for Proteins Analysis and Purification
- 3µ - 5µ for Analytical purpose
- 5µ - 10µ - 15µ for Preparative purpose
- 20/45µ for Flash Chromatography Purification

VYdamas® C8 is completely endcapped and it is more suitable for the separation and the purification of non polar peptides.

VYdamas® C8-P provide an higher hydrophilic interaction which enhance the separation and purification of polar/medium polar peptides.

Analytical HPLC Columns

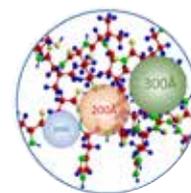
Ordering Information							
Phase	Porosity	Particle Size	Length / ID	4.6mm	4.0mm	3.0mm	2.1mm
VYdamas® C8-P		3µ	50mm	VD0651	VD0650	VD0649	VD0648
		3µ	100mm	VD0643	VD0642	VD0641	VD0640
		3µ	150mm	VD0647	VD0646	VD0645	VD0644
		Full-Guard - 3µ*	10mm	CD0339	CD0338	CD0337	CD0336
		5µ	100mm	VD0655	VD0654	VD0653	VD0652
		5µ	150mm	VD0659	VD0658	VD0657	VD0656
		5µ	250mm	VD0663	VD0662	VD0661	VD0660
		Full-Guard - 5µ*	10mm	CD0343	CD0342	CD0341	CD0340
VYdamas® C8		3µ	50mm	VD0148	VD0147	VD0146	VD0145
		3µ	100mm	VD0136	VD0135	VD0134	VD0133
		3µ	150mm	VD0144	VD0143	VD0142	VD0141
		Full-Guard - 3µ*	10mm	CD0291	CD0290	CD0289	CD0288
		5µ	100mm	VD0156	VD0155	VD0154	VD0153
		5µ	150mm	VD0164	VD0163	VD0162	VD0161
		5µ	250mm	VD0172	VD0171	VD0170	VD0169
		Full-Guard - 5µ*	10mm	CD0295	CD0294	CD0293	CD0292
		3µ	50mm	VD0192	VD0191	VD0190	VD0189
		3µ	100mm	VD0180	VD0179	VD0178	VD0177
		3µ	150mm	VD0188	VD0187	VD0186	VD0185
		Full-Guard - 3µ*	10mm	CD0299	CD0298	CD0297	CD0296
		5µ	100mm	VD0200	VD0199	VD0198	VD0197
		5µ	150mm	VD0208	VD0207	VD0206	VD0205
		5µ	250mm	VD0216	VD0215	VD0214	VD0213
		Full-Guard - 5µ*	10mm	CD0303	CD0302	CD0301	CD0300
		3µ	50mm	VD0236	VD0235	VD0234	VD0233
		3µ	100mm	VD0224	VD0223	VD0222	VD0221
		3µ	150mm	VD0232	VD0231	VD0230	VD0229
		Full-Guard - 3µ*	10mm	CD0307	CD0306	CD0305	CD0304
		5µ	100mm	VD0244	VD0243	VD0242	VD0241
		5µ	150mm	VD0252	VD0251	VD0250	VD0249
		5µ	250mm	VD0260	VD0259	VD0258	VD0257
		Full-Guard - 5µ*	10mm	CD0311	CD0310	CD0309	CD0308

\* 3/pkg - Full-Guard Cartridges require Full-Guard Holder. Two versions available : Full-Guard Holder - Direct Connection - Part.No CD0100 / In-Line Connection - Part.No CD0101

Other lengths available : 50mm - 75mm - 125mm - 200mm and 300mm.



C8



VYdamas®

Preparative HPLC Columns

- Columns with different sizes are available on request.
- Guard Cartridge require the proper Prep Full-Guard Holder
- DAC Column Technology Available on Request

VYdamas® C8 is completely endcapped and it is more suitable for the separation and the purification of non polar peptides.

VYdamas® C8-P provide an higher hydrophilic interaction which enhance the separation and purification of polar/medium polar peptides.

Preparative HPLC Columns

		Ordering Information								
Phase		Particle Size	Length / ID	7.8mm	10.0mm	21.2mm	30.0mm	50.0mm	Guard	
VYdamas® C8-P		5µ	100mm	VD0684	VD0682	VD0683	ASK	ASK	ASK  10mmL x ID (7.8-10-21.2-30-50mm)	
		5µ	150mm	VD0687	VD0685	VD0686	ASK	ASK		
		5µ	250mm	VD0690	VD0688	VD0689	ASK	ASK		
		10µ	100mm	VD0666	VD0664	VD0665	ASK	ASK		
		10µ	150mm	VD0669	VD0667	VD0668	ASK	ASK		
		10µ	250mm	VD0672	VD0670	VD0671	ASK	ASK		
		15µ	100mm	VD0675	VD0673	VD0674	ASK	ASK		
		15µ	150mm	VD0678	VD0676	VD0677	ASK	ASK		
		15µ	250mm	VD0681	VD0679	VD0680	ASK	ASK		
VYdamas® C8		5µ	100mm	VD0498	VD0496	VD0497	ASK	ASK	ASK  10mmL x ID (7.8-10-21.2-30-50mm)	
		5µ	150mm	VD0501	VD0499	VD0500	ASK	ASK		
		5µ	250mm	VD0504	VD0502	VD0503	ASK	ASK		
		10µ	100mm	VD0480	VD0478	VD0479	ASK	ASK		
		10µ	150mm	VD0483	VD0481	VD0482	ASK	ASK		
		10µ	250mm	VD0486	VD0484	VD0485	ASK	ASK		
		15µ	100mm	VD0489	VD0487	VD0488	ASK	ASK		
		15µ	150mm	VD0492	VD0490	VD0491	ASK	ASK		
		15µ	250mm	VD0495	VD0493	VD0494	ASK	ASK		
		5µ	100mm	VD0525	VD0523	VD0524	ASK	ASK	ASK  10mmL x ID (7.8-10-21.2-30-50mm)	
		5µ	150mm	VD0528	VD0526	VD0527	ASK	ASK		
		5µ	250mm	VD0531	VD0529	VD0530	ASK	ASK		
		10µ	100mm	VD0507	VD0505	VD0506	ASK	ASK		
		10µ	150mm	VD0510	VD0508	VD0509	ASK	ASK		
		10µ	250mm	VD0513	VD0511	VD0512	ASK	ASK		
		15µ	100mm	VD0516	VD0514	VD0515	ASK	ASK		
		15µ	150mm	VD0519	VD0517	VD0518	ASK	ASK		
		15µ	250mm	VD0522	VD0520	VD0521	ASK	ASK		
		5µ	100mm	VD0552	VD0550	VD0551	ASK	ASK	ASK  10mmL x ID (7.8-10-21.2-30-50mm)	
		5µ	150mm	VD0555	VD0553	VD0554	ASK	ASK		
		5µ	250mm	VD0558	VD0556	VD0557	ASK	ASK		
		10µ	100mm	VD0534	VD0532	VD0533	ASK	ASK		
		10µ	150mm	VD0537	VD0535	VD0536	ASK	ASK		
		10µ	250mm	VD0540	VD0538	VD0539	ASK	ASK		
15µ		100mm	VD0543	VD0541	VD0542	ASK	ASK			
15µ		150mm	VD0546	VD0544	VD0545	ASK	ASK			
15µ		250mm	VD0549	VD0547	VD0548	ASK	ASK			

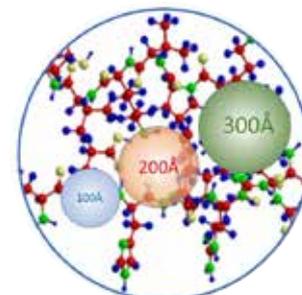


VYdamas®

Ultra High Purity Spherical Silica

- 100Å & 200Å for Peptides Analysis and Purification
- 300Å for Proteins Analysis and Purification
- 3µ - 5µ for Analytical purpose
- 5µ - 10µ - 15µ for Preparative purpose
- 20/45µ for Flash Chromatography Purification

# C18



VYdamas® C18 is completely endcapped and it is more suitable for the separation and the purification of non polar peptides.

VYdamas® C18-P provide an higher hydrophilic interaction which enhance the separation and purification of polar/medium polar peptides.

## Analytical HPLC Columns

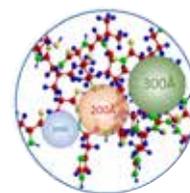
Ordering Information							
Phase	Porosity	Particle Size	Length / ID	4.6mm	4.0mm	3.0mm	2.1mm
VYdamas® C18-P		3µ	50mm	VD0702	VD0701	VD0700	VD0699
		3µ	100mm	VD0694	VD0693	VD0692	VD0691
		3µ	150mm	VD0698	VD0697	VD0696	VD0695
		Full-Guard - 3µ*	10mm	CD0347	CD0346	CD0345	CD0344
		5µ	100mm	VD0706	VD0705	VD0704	VD0703
		5µ	150mm	VD0710	VD0709	VD0708	VD0707
		5µ	250mm	VD0714	VD0713	VD0712	VD0711
		Full-Guard - 5µ*	10mm	CD0351	CD0350	CD0349	CD0348
VYdamas® C18		3µ	50mm	VD0280	VD0279	VD0278	VD0277
		3µ	100mm	VD0268	VD0267	VD0266	VD0265
		3µ	150mm	VD0276	VD0275	VD0274	VD0273
		Full-Guard - 3µ*	10mm	CD0315	CD0314	CD0313	CD0312
		5µ	100mm	VD0288	VD0287	VD0286	VD0285
		5µ	150mm	VD0296	VD0295	VD0294	VD0293
		5µ	250mm	VD0304	VD0303	VD0302	VD0301
		Full-Guard - 5µ*	10mm	CD0319	CD0318	CD0317	CD0316
		3µ	50mm	VD0324	VD0323	VD0322	VD0321
		3µ	100mm	VD0312	VD0311	VD0310	VD0309
		3µ	150mm	VD0320	VD0319	VD0318	VD0317
		Full-Guard - 3µ*	10mm	CD0323	CD0322	CD0321	CD0320
		5µ	100mm	VD0332	VD0331	VD0330	VD0329
		5µ	150mm	VD0340	VD0339	VD0338	VD0337
		5µ	250mm	VD0348	VD0347	VD0346	VD0345
		Full-Guard - 5µ*	10mm	CD0327	CD0326	CD0325	CD0324
		3µ	50mm	VD0368	VD0367	VD0366	VD0365
		3µ	100mm	VD0356	VD0355	VD0354	VD0353
		3µ	150mm	VD0364	VD0363	VD0362	VD0361
		Full-Guard - 3µ*	10mm	CD0331	CD0330	CD0329	CD0328
		5µ	100mm	VD0376	VD0375	VD0374	VD0373
		5µ	150mm	VD0384	VD0383	VD0382	VD0381
		5µ	250mm	VD0392	VD0391	VD0390	VD0389
		Full-Guard - 5µ*	10mm	CD0335	CD0334	CD0333	CD0332

\* 3/pkg - Full-Guard Cartridges require Full-Guard Holder. Two versions available :  
Full-Guard Holder - Direct Connection - Part.No CD0100 / In-Line Connection - Part.No CD0101

Other lengths available : 50mm - 75mm - 125mm - 200mm and 300mm.



C18



VYdamas®

Preparative HPLC Columns

- Columns with different sizes are available on request.
- Guard Cartridge require the proper Prep Full-Guard Holder
- DAC Column Technology Available on Request

VYdamas® C18 is completely endcapped and it is more suitable for the separation and the purification of non polar peptides.

VYdamas® C18-P provide an higher hydrophilic interaction which enhance the separation and purification of polar/medium polar peptides.

Preparative HPLC Columns

		Ordering Information								
Phase		Particle Size	Length / ID	7.8mm	10.0mm	21.2mm	30.0mm	50.0mm	Guard	
VYdamas® C18-P		5µ	100mm	VD0735	VD0733	VD0734	ASK	ASK	ASK 10mmL x ID (7.8-10-21.2-30-50mm)	
		5µ	150mm	VD0738	VD0736	VD0737	ASK	ASK		
		5µ	250mm	VD0741	VD0739	VD0740	ASK	ASK		
		10µ	100mm	VD0717	VD0715	VD0716	ASK	ASK		
		10µ	150mm	VD0720	VD0718	VD0719	ASK	ASK		
		10µ	250mm	VD0723	VD0721	VD0722	ASK	ASK		
		15µ	100mm	VD0726	VD0724	VD0725	ASK	ASK		
		15µ	150mm	VD0729	VD0727	VD0728	ASK	ASK		
		15µ	250mm	VD0732	VD0730	VD0731	ASK	ASK		
VYdamas® C18		5µ	100mm	VD0579	VD0577	VD0578	ASK	ASK	ASK 10mmL x ID (7.8-10-21.2-30-50mm)	
		5µ	150mm	VD0582	VD0580	VD0581	ASK	ASK		
		5µ	250mm	VD0585	VD0583	VD0584	ASK	ASK		
		10µ	100mm	VD0561	VD0559	VD0560	ASK	ASK		
		10µ	150mm	VD0564	VD0562	VD0563	ASK	ASK		
		10µ	250mm	VD0567	VD0565	VD0566	ASK	ASK		
		15µ	100mm	VD0570	VD0568	VD0569	ASK	ASK		
		15µ	150mm	VD0573	VD0571	VD0572	ASK	ASK		
		15µ	250mm	VD0576	VD0574	VD0575	ASK	ASK		
		5µ	100mm	VD0606	VD0604	VD0605	ASK	ASK	ASK 10mmL x ID (7.8-10-21.2-30-50mm)	
		5µ	150mm	VD0609	VD0607	VD0608	ASK	ASK		
		5µ	250mm	VD0612	VD0610	VD0611	ASK	ASK		
		10µ	100mm	VD0588	VD0586	VD0587	ASK	ASK		
		10µ	150mm	VD0591	VD0589	VD0590	ASK	ASK		
		10µ	250mm	VD0594	VD0592	VD0593	ASK	ASK		
		15µ	100mm	VD0597	VD0595	VD0596	ASK	ASK		
		15µ	150mm	VD0600	VD0598	VD0599	ASK	ASK		
		15µ	250mm	VD0603	VD0601	VD0602	ASK	ASK		
		5µ	100mm	VD0633	VD0631	VD0632	ASK	ASK	ASK 10mmL x ID (7.8-10-21.2-30-50mm)	
		5µ	150mm	VD0636	VD0634	VD0635	ASK	ASK		
		5µ	250mm	VD0639	VD0637	VD0638	ASK	ASK		
		10µ	100mm	VD0615	VD0613	VD0614	ASK	ASK		
		10µ	150mm	VD0618	VD0616	VD0617	ASK	ASK		
		10µ	250mm	VD0621	VD0619	VD0620	ASK	ASK		
15µ		100mm	VD0624	VD0622	VD0623	ASK	ASK			
15µ		150mm	VD0627	VD0625	VD0626	ASK	ASK			
15µ		250mm	VD0630	VD0628	VD0629	ASK	ASK			

# VYdamas® - Silica Gel for Large Molecules Purification

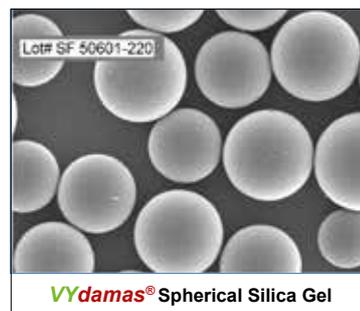
Analysis and Purification of large molecules such as **Proteins and Peptides** needs a wide pore size media.

**SepaChrom** offers a complete line of **Reverse Phase 100Å - 200Å & 300Å Spherical Silica Gel** media for **Laboratory and Industrial scale Purification**.

**VYdamas®** is based on Ultra High Purity Silica Base media; the low metal trace content ensures optimal performance in the purification of Proteins and Peptides. **VYdamas®** is available in C4, C8 and C18 Bonded media.

**VYdamas® C18** is completely endcapped and it is more suitable for the separation and the purification of non polar peptides. **VYdamas® C18-P** provide a higher hydrophilic interaction which enhance the separation and purification of polar/medium polar peptides.

**Flash Cartridges** packed with **VYdamas®** media are also available, please contact our office for a quote.



## VYdamas® Silica Gel for Large Molecules Purification



Type	Porosity (Å)	Silica	Particle Size (µm)	% Carbon Load	Packaging (kg)	Stock N#	Applications
<b>VYdamas® C4</b>	100Å	Spherical	10 µm	6.0	250g	<b>VY0037</b>	Preparative Chromatography
	100Å	Spherical	10 µm	6.0	1kg	<b>VY0038</b>	
	100Å	Spherical	15 µm	6.0	250g	<b>VY0039</b>	
	100Å	Spherical	15 µm	6.0	1kg	<b>VY0040</b>	
	100Å	Spherical	20-45 µm	6.0	1kg	<b>VY0041</b>	
<b>VYdamas® C8-P</b>	100Å	Spherical	10 µm	10.0	250g	<b>VY0059</b>	Preparative Chromatography
	100Å	Spherical	10 µm	10.0	1kg	<b>VY0060</b>	
	100Å	Spherical	15 µm	10.0	250g	<b>VY0061</b>	
	100Å	Spherical	15 µm	10.0	1kg	<b>VY0062</b>	
	100Å	Spherical	20-45 µm	10.0	1kg	<b>VY0063</b>	
<b>VYdamas® C8</b>	100Å	Spherical	10 µm	10.0	250g	<b>VY0043</b>	Preparative Chromatography
	100Å	Spherical	10 µm	10.0	1kg	<b>VY0044</b>	
	100Å	Spherical	15 µm	10.0	250g	<b>VY0045</b>	
	100Å	Spherical	15 µm	10.0	1kg	<b>VY0046</b>	
	100Å	Spherical	20-45 µm	10.0	1kg	<b>VY0047</b>	
<b>VYdamas® C18-P</b>	100Å	Spherical	10 µm	17.0	250g	<b>VY0064</b>	Preparative Chromatography
	100Å	Spherical	10 µm	17.0	1kg	<b>VY0065</b>	
	100Å	Spherical	15 µm	17.0	250g	<b>VY0066</b>	
	100Å	Spherical	15 µm	17.0	1kg	<b>VY0067</b>	
	100Å	Spherical	20-45 µm	17.0	1kg	<b>VY0068</b>	
<b>VYdamas® C18</b>	100Å	Spherical	10 µm	17.0	250g	<b>VY0049</b>	Preparative Chromatography
	100Å	Spherical	10 µm	17.0	1kg	<b>VY0050</b>	
	100Å	Spherical	15 µm	17.0	250g	<b>VY0051</b>	
	100Å	Spherical	15 µm	17.0	1kg	<b>VY0052</b>	
	100Å	Spherical	20-45 µm	17.0	1kg	<b>VY0053</b>	

### Scale-Up to Preparative

The process of Scaling-Up from **analytical to larger scale** separation can best be described as a balancing act. The user has to optimize purification conditions such as column size, media type, solvent use, loadability and yield.

**Linear velocity** is the key parameter when scaling up.

By maintaining constant linear velocity, the retention times of the various fractions will be similar for different column ID's.

The formula below can be used to maintain constant linear velocity when scaling up **from a smaller (ID-small) to larger column (ID-large)** of the same column length.

$$F\text{-large} = F\text{-small} \times (ID\text{-large} / ID\text{-small})^2$$

F-large = flow rate of the larger column  
F-small = flow rate of the smaller column

ID-large = inner diameter of the larger column  
ID-small = inner diameter of the smaller column

To convert volumetric flow rates (mL/min) to linear flow rates (cm/hour) use the following formula:

$$\text{Linear (Y) to Volumetric (X) flow rate : } X = \frac{Y}{60} \pi \frac{ID^2}{4}$$

$$\text{Volumetric (X) to Linear (Y) flow rate : } Y = 60X \frac{4}{\pi ID^2}$$

X = volumetric flow rate in mL/min    Y = linear flow rate in cm/h    ID = column inner diameter in cm



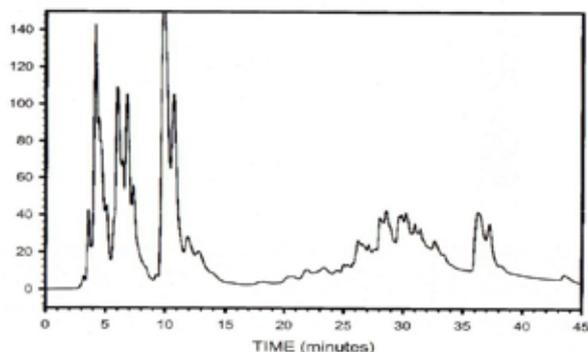
Injection Load and Flow Rate Table

Column	I.D.	Load*	Flow Rate
Analytical	4.6mm	X	1 mL/min
Semi-Prep	7.8mm	3X	2.88 mL/min
	10mm	5X	4.73 mL/min
Preparative.	21.2mm	25X	21.2 mL/min
	30mm	45X	42.5 mL/min
	50mm	120X	118 mL/min
	100mm	500X	473 mL/min



Type	Porosity (Å)	Silica	Particle Size (µm)	% Carbon Load	Packaging (kg)	Stock N#	Applications
<b>VYdamas® C4</b>	200Å	Spherical	10 µm	4.0	250g	VY0019	Preparative Chromatography
	200Å	Spherical	10 µm	4.0	1kg	VY0020	
	200Å	Spherical	15 µm	4.0	250g	VY0021	
	200Å	Spherical	15 µm	4.0	1kg	VY0022	
	200Å	Spherical	20-45 µm	4.0	1kg	VY0023	Preparative & Flash Chromatography
<b>VYdamas® C8</b>	200Å	Spherical	10 µm	6.0	250g	VY0025	Preparative Chromatography
	200Å	Spherical	10 µm	6.0	1kg	VY0026	
	200Å	Spherical	15 µm	6.0	250g	VY0027	
	200Å	Spherical	15 µm	6.0	1kg	VY0028	
	200Å	Spherical	20-45 µm	6.0	1kg	VY0029	Preparative & Flash Chromatography
<b>VYdamas® C18</b>	200Å	Spherical	10 µm	10.0	250g	VY0031	Preparative Chromatography
	200Å	Spherical	10 µm	10.0	1kg	VY0032	
	200Å	Spherical	15 µm	10.0	250g	VY0033	
	200Å	Spherical	15 µm	10.0	1kg	VY0034	
	200Å	Spherical	20-45 µm	10.0	1kg	VY0035	Preparative & Flash Chromatography

### Purification of Peptides from a Peptone



#### Operating conditions :

Column : VYdamas® C18 200Å HPLC column - 5 µm - 250 x 4.6 mmID.  
 Mobile Phase : A: 1% TFA in water  
                   B: 1% TFA in acetonitrile  
 Gradient : 100% A for 15 min., 0-22% B in 21 min., hold 22% B for 6 min.,  
                   100% A for 25 min.  
 Flow Rate : 1.0 mL/min.  
 Detector : UV at 254 nm.  
 Temperature : 30°C.



Type	Porosity (Å)	Silica	Particle Size (µm)	% Carbon Load	Packaging (kg)	Stock N#	Applications
<b>VYdamas® C4</b>	300Å	Spherical	10 µm	3.0	250g	VY0001	Preparative Chromatography
	300Å	Spherical	10 µm	3.0	1kg	VY0002	
	300Å	Spherical	15 µm	3.0	250g	VY0003	
	300Å	Spherical	15 µm	3.0	1kg	VY0004	
	300Å	Spherical	20-45 µm	3.0	1kg	VY0005	Preparative & Flash Chromatography
<b>VYdamas® C8</b>	300Å	Spherical	10 µm	5.0	250g	VY0007	Preparative Chromatography
	300Å	Spherical	10 µm	5.0	1kg	VY0008	
	300Å	Spherical	15 µm	5.0	250g	VY0009	
	300Å	Spherical	15 µm	5.0	1kg	VY0010	
	300Å	Spherical	20-45 µm	5.0	1kg	VY0011	Preparative & Flash Chromatography
<b>VYdamas® C18</b>	300Å	Spherical	10 µm	7.0	250g	VY0013	Preparative Chromatography
	300Å	Spherical	10 µm	7.0	1kg	VY0014	
	300Å	Spherical	15 µm	7.0	250g	VY0015	
	300Å	Spherical	15 µm	7.0	1kg	VY0016	
	300Å	Spherical	20-45 µm	7.0	1kg	VY0017	Preparative & Flash Chromatography

# Sepa-Bulk - Silica Gel for Chromatography

SepaChrom offers a complete line of **100Å Spherical Silica Gel** media used in many applications, including **Laboratory and Industrial scale Purification**.

Sepa-Bulk is available in a wide range of **Particle Sizes** :

- 10µ & 15µ for Preparative HPLC,
- 20-45µ for Preparative LC
- 40-75µ for Flash Chromatography
- 75-200µ for Industrial Scale Purification.

To complete the product line **Sepa-Bulk** is available with a wide range of **Porosity**, including 70Å, 150Å, 200Å, 300Å, 500Å, 800Å and 1000Å.



Functionalization	Porosity (Å)	Particle Size (µm)	Description	Packaging (kg)	Stock N#	Applications
Sepa-Bulk Silica	100Å	10 µm	Spherical Ultra High Pure Silica	1kg	FF0001	Preparative Chromatography
	100Å	15 µm	Spherical Ultra High Pure Silica	1kg	FF0002	
	100Å	20-45 µm	Spherical Ultra High Pure Silica	1kg	FF0003	
	Preparative & Flash Chromatography	100Å	20-45 µm	Spherical Ultra High Pure Silica	10kg	FF0004
		100Å	20-45 µm	Spherical Ultra High Pure Silica	20kg	FF0005
		100Å	40-75 µm	Spherical Ultra High Pure Silica	1kg	FF0006
		100Å	40-75 µm	Spherical Ultra High Pure Silica	10kg	FF0007
	100Å	40-75 µm	Spherical Ultra High Pure Silica	20kg	FF0008	
	Industrial Scale Purification	100Å	75-200 µm	Spherical Ultra High Pure Silica	1kg	FF0009
		100Å	75-200 µm	Spherical Ultra High Pure Silica	10kg	FF0010
		100Å	75-200 µm	Spherical Ultra High Pure Silica	20kg	FF0011
Sepa-Bulk C18	100Å	10 µm	Spherical Ultra High Pure Bonded Silica	250g	FF0012	Preparative Chromatography
	100Å	10 µm	Spherical Ultra High Pure Bonded Silica	1kg	FF0013	
	100Å	15 µm	Spherical Ultra High Pure Bonded Silica	250g	FF0014	
	Preparative & Flash Chromatography	100Å	15 µm	Spherical Ultra High Pure Bonded Silica	1kg	FF0015
		100Å	20-45 µm	Spherical Ultra High Pure Bonded Silica	1kg	FF0022
		100Å	20-45 µm	Spherical Ultra High Pure Bonded Silica	10kg	FF0016
		100Å	40-75 µm	Spherical Ultra High Pure Bonded Silica	1kg	FF0017
	100Å	40-75 µm	Spherical Ultra High Pure Bonded Silica	10kg	FF0018	
	Industrial Scale Purification	100Å	75-200 µm	Spherical Ultra High Pure Bonded Silica	1kg	FF0019
		100Å	75-200 µm	Spherical Ultra High Pure Bonded Silica	10kg	FF0020
		100Å	75-200 µm	Spherical Ultra High Pure Bonded Silica	20kg	FF0021

Sepa-Bulk product lines include a wide range of **bonded media** to meet any purification challenge from **Laboratory to Industrial** scale.

Packaging is available from 100g to multi-ton for laboratory to process scale applications.

Packing	Porosity	Particle Size
C18	70Å-150Å-200Å-300Å-500Å-800Å-1000Å	10µ - 15µ - 20/45µ - 40/75µ - 75/200µ
Silica	70Å-150Å-200Å-300Å-500Å-800Å-1000Å	10µ - 15µ - 20/45µ - 40/75µ - 75/200µ
C8	70Å-100Å-150Å-200Å-300Å-500Å-800Å-1000Å	10µ - 15µ - 20/45µ - 40/75µ - 75/200µ
PHENYL	70Å-100Å-150Å-200Å-300Å-500Å-800Å-1000Å	10µ - 15µ - 20/45µ - 40/75µ - 75/200µ
PEI	70Å-100Å-150Å-200Å-300Å-500Å-800Å-1000Å	10µ - 15µ - 20/45µ - 40/75µ - 75/200µ
COOH	70Å-100Å-150Å-200Å-300Å-500Å-800Å-1000Å	10µ - 15µ - 20/45µ - 40/75µ - 75/200µ
SO3H	70Å-100Å-150Å-200Å-300Å-500Å-800Å-1000Å	10µ - 15µ - 20/45µ - 40/75µ - 75/200µ
DIOL	70Å-100Å-150Å-200Å-300Å-500Å-800Å-1000Å	10µ - 15µ - 20/45µ - 40/75µ - 75/200µ
CN	70Å-100Å-150Å-200Å-300Å-500Å-800Å-1000Å	10µ - 15µ - 20/45µ - 40/75µ - 75/200µ
NH2	70Å-100Å-150Å-200Å-300Å-500Å-800Å-1000Å	10µ - 15µ - 20/45µ - 40/75µ - 75/200µ
DNH	70Å-100Å-150Å-200Å-300Å-500Å-800Å-1000Å	10µ - 15µ - 20/45µ - 40/75µ - 75/200µ
HILIC	70Å-100Å-150Å-200Å-300Å-500Å-800Å-1000Å	10µ - 15µ - 20/45µ - 40/75µ - 75/200µ

Are you looking for a **Preparative or Process Scale Column or Chromatographic System**?

SepaChrom offers a complete line of **Stainless Steel Low-Medium & High Pressure columns** (up to 2m ID - 100bar) and systems (up to 5000 l/hr flow rate) for **Laboratory and Industrial scale Purification**.

Contact our office for more details





## The peptides specialist

125  
bar

250  
mL/min

### *puriFlash*<sup>®</sup> 5.125P



InterSoft<sup>®</sup> X "Genius"  
User-friendly  
Click & Drag Gradient  
Intelligent Isocratic Mode

Unit Control  
15" touch screen  
Remote Control  
USB x8 - RJ45

Solvent tray w/drainage system

Pre-cols holder

Quaternary Gradient Pump  
Air purge  
Washing Disc + Pump

Injection  
Liquid or Dry-Load injection  
w/column equilibration.

Load & Go<sup>™</sup> technology:  
an automated  
6 port electric valve  
+ 10 port electric valve  
manages solid injection

Detection  
PF-5.125P: UV: 200-400nm

PF-5.125P + Pack-UVextended: UV: 200-800nm  
(Multi wavelength & Scan collection  
Spectral view & Purity confirmation)

Flow Cell: 1.3mm / 55µL

Integrated cols holder

Fraction Collector  
3 racks Gen5  
132 tubes 18x150mm  
Drainage system

Column i.d. up to  
=> 80mm

## Purification of complex mixtures of peptides

250  
bar

125  
mL/min

### *puriFlash*<sup>®</sup> 5.250P



InterSoft<sup>®</sup> X "Genius"  
User-friendly  
Click & Drag Gradient  
Intelligent Isocratic Mode

Unit Control  
15" touch screen  
Remote Control  
USB x8 - RJ45

Solvent tray w/drainage system

Pre-cols holder

Quaternary Gradient Pump  
Air purge  
Washing Disc + Pump

Injection  
Liquid or Dry-Load injection  
w/column equilibration.

Load & Go<sup>™</sup> technology:  
an automated  
6 port electric valve  
+ 10 port electric valve  
manages solid injection

Detection  
PF-5.250P: UV: 200-400nm

PF-5.250P + Pack-UVextended: UV: 200-800nm  
(Multi wavelength & Scan collection  
Spectral view & Purity confirmation)

Flow Cell: 1.3mm / 55µL

Integrated cols holder

Fraction Collector  
3 racks Gen5  
132 tubes 18x150mm  
Drainage system

Column i.d. up to  
=> 60mm

## The proteins specialist

20  
bar

100  
mL/min

### *puriFlash*<sup>®</sup> 5.020B



InterSoft<sup>®</sup> X "Genius"  
User-friendly  
Click & Drag Gradient  
Intelligent Isocratic Mode

Unit Control  
15" touch screen  
Remote Control  
USB x8 - RJ45

Solvent tray w/drainage system

Pre-cols holder

Quaternary Gradient Pump  
Air purge  
Washing Disc + Pump

Injection  
Liquid injection  
w/column equilibration.

Load & Go<sup>™</sup> technology:  
through automated  
6 port electric valve

Detection  
PF-5.020B: UV: 254 & 280nm

PF-5.020B + Pack-UV: UV: 200-400nm  
(Multi wavelength & Scan collection  
Spectral view & Purity confirmation)

Integrated cols holder

Fraction Collector  
3 racks Gen5  
132 tubes 18x150mm  
Drainage system

Column i.d. up to  
=> 50mm

## Other Products available from SepaChrom



**HPLC**

MADE IN ITALY

SepaChrom

HPLC, UHPLC Silica Based Columns for Analytical Applications  
Polymer Base Columns for Carbohydrate & Organic Acids Analysis  
Chiral HPLC Columns  
Ion Chromatography Columns for Anions and Cations Analysis  
Guard-Columns



**MEDIA**

Irregular and Spherical Silica Gel for Flash, Prep & Industrial Purification  
Bonded Silica C18, Cyano, Diol, Amino  
Wide Range Porosity (30Å- 2500Å) and Particle Size (10µ-200µ) for Any Application  
Polymer Based Resin for Reversed Phase and Ion Exchange Chromatography



**PREP**

10mm-25mmID Packed Prep Columns for Lab Scale Purification  
25mm-100mmID Packed & Empty, Flanged & Spring Column Technology  
50mm-2000mmID Process Scale Chromatography Columns & Systems, Flanged & DAC Technology  
Scale-up Method Development & Packing Service



**FLASH**

Instruments for Flash and Prep Chromatography up to 750mL/min & 400 bar Pressure.  
190-840 Multi Wavelength & Scan Collection, Integrated ELSD, MS Simple Quad Detector  
Flash Columns for All Existing Flash Instruments : Silica, Reverse Phase, CN, Diol, NH<sub>2</sub>, Chiral Phases, 15µ to 50µ Particle Size



**SPE**

Silica Based SPE Cartridges for Pharma, Environmental, Food&Beverage Applications.  
Polymer Base SPE Cartridges for Clinical & Forensic Applications.  
Ion Chromatography SPE Cartridges  
Accessories for SPE  
Syringe Filters & QuEChERS



**VIALS**

Autosampler Vials for HPLC, IC e GC  
Sampling Vials  
Head Space Vials  
Crimper & Decapper and  
Sampling Accessories



**MEGA**

**GC Columns**

**GC**

Full Range of High Performance GC Capillary Column MEGA :  
MS Columns, Chiral, Mega-HT, Fast-GC, Mega-2D, Custom Dedicated Columns.  
Formerly GRACE/ALLTECH GC Capillary Columns  
Econo-Cap™ & Heliflex®



**Accessori**

**HPLC-GC**

SS & PEEK Tubing for Analytical, Preparative and Ion Chromatography  
Fittings, Ferrule & Valves for HPLC, IC and GC  
Syringes and Septa for GC  
Traps for GC Gas Lines  
Gas Generators

## Company Profile

### About us :

**SepaChrom** is a new company specialising in **Chromatography**. **SepaChrom** is the brainchild of the founders who wanted to create a dedicated and unique company able to support **Chromatography Users** in optimizing their challenges. Our Core competence is the manufacture, sale and support of **High-Quality** products for **GC**, **Analytical** and **Preparative** scale **HPLC** and **Flash** purification, including consumables and accessories, through **Process** scale purification.

### Our Mission :

Our team has decades of experience, which, combined with a range of High Quality selected products and the most efficient technological solutions, allows **SepaChrom** to support Pharma, Biotech, Chemical, Food and Beverage, Cosmetic, Environmental, Clinical and Petrochemical industries, in R&D departments as well in QC laboratories and Production. Our commitment is to provide the Highest level of Technical Support that Chromatographers expect from **Your Specialist in Chromatography**

### Customers in Mind :

The success of **SepaChrom** is driven by complete **satisfaction** of our customers, and consequently by their success. **SepaChrom**'s expertise results in High-Quality **pre & post** sale support to the Chromatographic Users. This includes **fast delivery** of your products from our warehouse to your location.



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