CDS Empore™ Spin Columns

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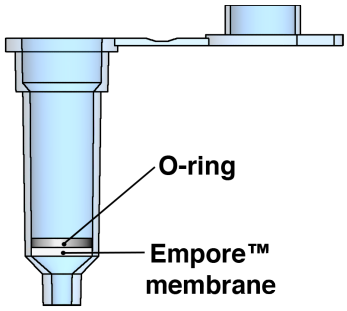
Centrifuge-Ready Spin Columns With Empore™ Technology for Peptide and Protein Applications

Empore™ Spin Columns are now available pre-packed with the Empore™ membrane offering researchers a much-needed alternative to arduous and monotonous manual packing procedures.
This quick and easy-to-use spin column format is perfect for applications too large for StageTip processing. Empore™ membrane has high capacity enabling small-volume desalting and fractionation of peptides and proteins.

1. High capacity and recovery rate with low elution volume
2. Chemically resistant, low-binding polypropylene material
3. Standard layers of Empore™ membrane and leakage-free after rigorous testing
4. Highly customizable for customer needs
5. Same Empore™ membrane used in the Empore™ product line



Empore ™ Spin Column

Product Features:

- **Sample Size** - Up to 500 µL per column.
- **Reliability** – Empore™ membranes evenly load samples for efficient and consistently reproducible results.
- **Universal Compatibility** - Chemically resistant to organic solvents and basic and acidic conditions for all protein and peptide desalting / fractionation applications.
- **Leaching free** – We acknowledge that dealing with leaching from colored columns can be challenging for some researchers. However, you can rest assured that our spin columns eliminate this concern entirely!
- **Versatility** – A wide range of load volumes and capacity meet most experimental constraints.

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Technical Specifications:

Reverse Phase Phases	C18, C8, SDB-XC
Mixed-Mode Phases	SDB-RPS
Ion Exchange Phases	Anion Exchange (SAX), Cation Exchange (SCX)
Volume	500 µL (Up to its collar)
Layers of Empore™ Membrane	1
Particle Weight	15 mg (C18-HD)
Diameter	7 mm
Capacity	300 µg (C18-HD)

Product Listings:

Sorbent	Size (µL)	Quantity	Product Number	Catalog Number
C18-HD	500	25 / 100	70-2019-2001-0	6491
C8-HD	500	25 / 100	70-2019-2002-2	6492
SDB-XC	500	25 / 100	70-2019-2003-4	6493
SDB-RPS	500	25 / 100	70-2019-2004-6	6494
SAX	500	25 / 100	70-2019-2005-8	6495
SCX	500	25 / 100	70-2019-2006-1	6496
E3	500	25/100	70-2019-3101-0	6497

HD - high density
SAX - strong anion exchange
SCX - strong cation exchange
E3- Proteomics sample preparation (protein cleanup and digestion)

Example Application:

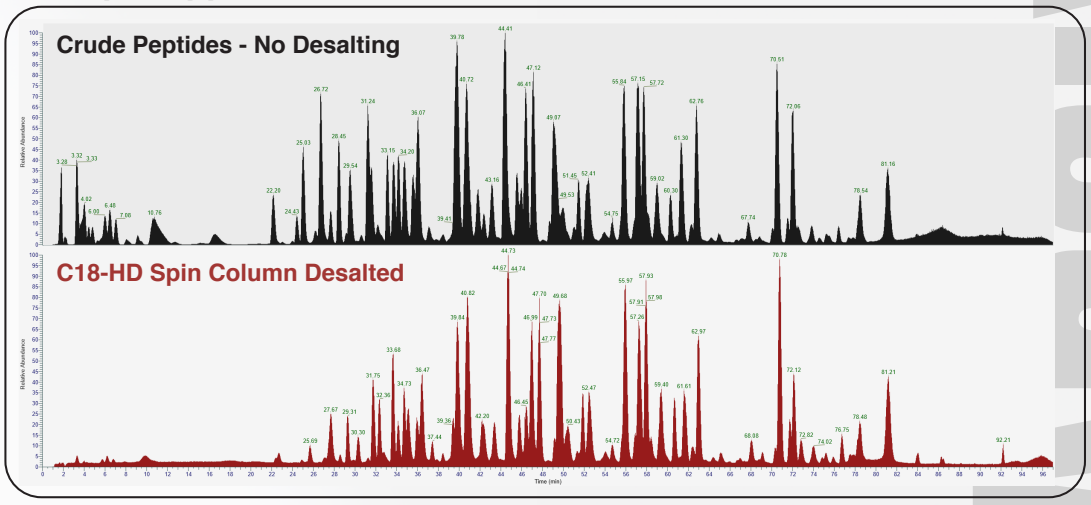

Figure1. Total Ion Chromatogram (TIC) of BSA digested peptides before (top) and after desalting (bottom).
100 µg of BSA peptides were desalted on C18-HD Spin Column and analyzed by LC-MS.

CDS Analytical

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Empore™ C18 Spin Columns

Part Number: 70-2019-2001-0

Product Description

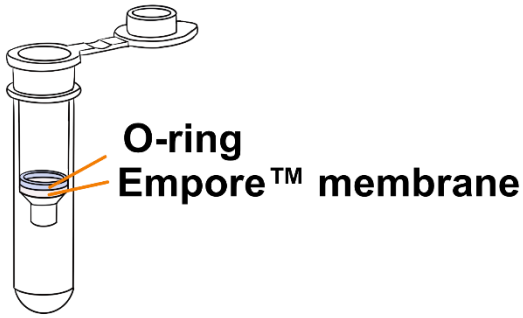
Empore's C18 spin column products can be used for a variety of applications in peptide sample cleanup and concentration. Empore™ membrane technology fixes high-density fillers in a polymer fiber netSwork, minimizing the gaps between particles, and making the membrane very efficient in binding and recovering peptides.

In protein-related mass spectrometry (MS) analysis, salts and detergents in the sample may cause reduced sensitivity and spectral quality. Meanwhile, the precipitation of salt at the sample line connections will cause the rotary valve to wear off. Sample cleanup using Empore™ C-18 spin column with the optimized protocol can significantly improve signal-to-noise ratio and sequence coverage and avoid valves early wear off by removing these interferences commonly used in protein or peptide preparations.

Contents

Item	Part No.	Amount
Empore™ C18 Spin Columns	70-2019-2001-0EA	25 pcs of spin columns, 25 pcs of 2 mL collection tubes, 15 mg high density C18 particles in each spin column.
	70-2019-2001-0	100 pcs of spin columns, 100 pcs of 2mL collection tubes, 15 mg high density C18 particles in each spin column.

Operation Steps



- The spin columns can be stored at room temperature.
- The high density C18 particles in the spin column can bind up to 300 µg of peptide from 10-500 µL sample volumes.
- Recovery >90% desalting BSA peptides

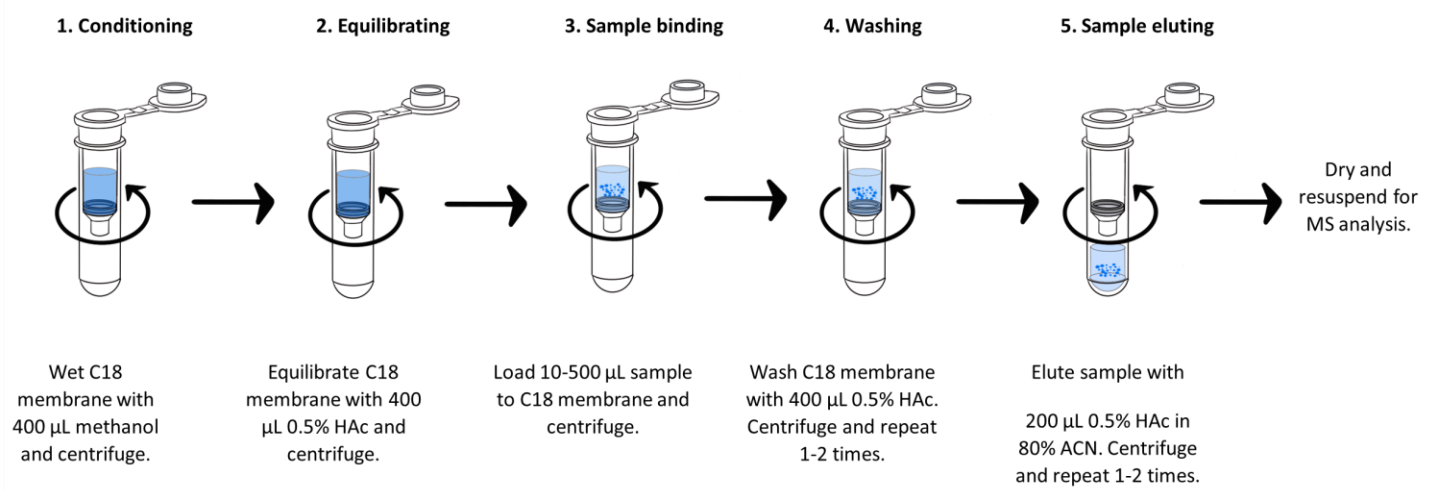


Figure 1. Empore™ C18 Spin Columns workflow

Sample preparation	Sample should be in acidic conditions pH Added with a 2% TFA solution (solution/sample =1/3), a sample in volume of 10 to 500 µL can be processed by each Empore C18 Spin Column. The final sample will be in volume of 600 µL and contain 0.5% TFA.
Sample cleanup	
1. Conditioning	1.1 Put the spin column into a collection tube. 1.2 Add 400 µL methanol into the column to wet the C18 membrane. 1.3 Centrifuge at 500 x *g* for 10-20 seconds. Do not spin to dryness. Discard the flow through. Optionally, Repeat steps 1.2 – 1.3.
2. Equilibrating	2.1 Add 400 µL of 0.1% TFA. Centrifuge at 500 x *g* for 20-30 seconds. Do not spin to dryness. Discard the flow through.
3. Sample binding	3.1 Put the spin column into a new collection tube. Load the sample onto the C18 membrane. 3.2 Centrifuge at 500 x *g* for 1-2 minutes depending on sample volume. 3.3 For improved loading repeat loading one more time with eluted solution. Note: Keep the flow through to confirm sample binding.
4. Washing	4.1 Put the spin column into a collection tube. 4.2 Add 400 µL of 0.1% TFAonto the C18 membrane. 4.3 Centrifuge at 500 x *g* for 1 minute. 4.4 Repeat steps 4.2 – 4.3. Discard the flow through. Note: Depending on the level of contaminants in the sample, more wash steps maybe necessary.
5. Sample eluting	5.1 Put the spin column into a new collection tube. 5.2 Add 20-150 µL of 80% ACN in 0.1% TFA onto the C18 membrane. 5.3 Centrifuge at 500 x *g* for 1 minute. 5.4 Repeat steps 5.2 – 5.3 Note: Elution volume for a high recovery may depend on how many micrograms of sample loaded. At maximum capacity, 800 µL total over a few elutions may be necessary for maximum recovery. The sample is ready for further concentration followed by mass spectrometry analysis.