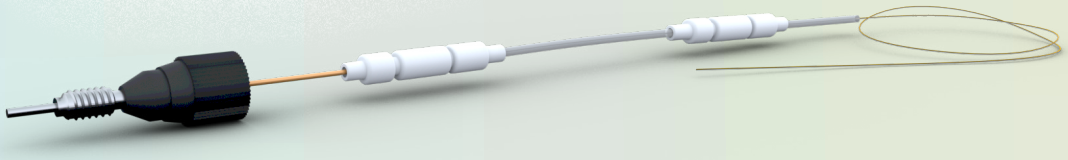
Introducing Biozen Nano LC

nano LC

biozen™
by Phenomenex



Biozen Nano LC Columns

For Omics Analysis

- Optimize IDs
- Consistent Results
- Easy Connections

www.phenomenex.com/BiozenNano

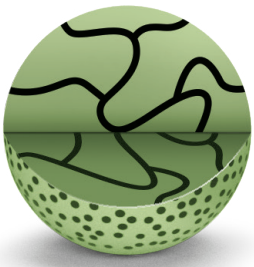
phenomenex®

2 Advanced Particle Platforms

Both Biozen particle platforms were individually designed and built by Phenomenex to take advantage of integral levels of performance, ruggedness, and reproducibility for omics applications. Individually, each platform differs in the proprietary processing techniques used to control particle size and morphology.

biozen™ by Phenomenex

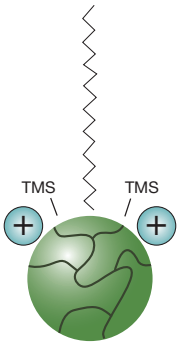
- High Efficiency
- Excellent Inertness
- Increased Sensitivity
- Exceptional Quality and Robustness



Thermally Modified Fully Porous

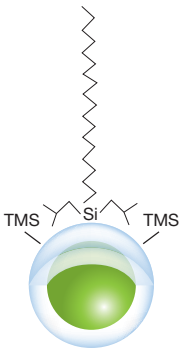
Core-Shell Technology

3 Nano Chemistries and Growing!



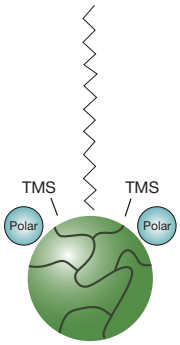
Biozen Peptide PS-C18

Excellent retention by combined positively charged surface ligand and C18 ligand.



Biozen Peptide XB-C18

Overall retention of both acidic and basic peptides through C18 stationary phase with di-isobutyl side chains.



Biozen Polar C18

Enhanced selectivity / retention for polar analytes without diminishing useful non-polar retention

Material Characteristics

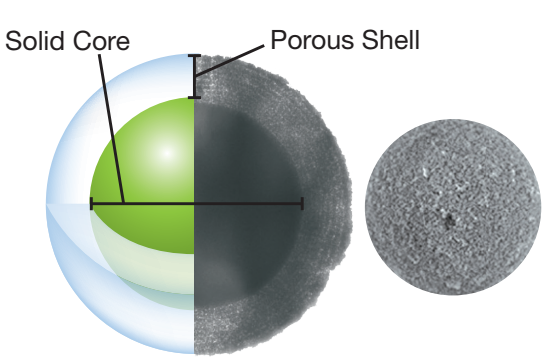
Biozen Nano Phases	Particle Size (µm)	Pore Size (Å)	Surface Area (m^2 /g)	pH Stability*	Temp* (°C)	Pressure (psi)
Peptide XB-C18	2.6, 5	100	200	1.5-9	90	10,000
Peptide PS-C18	3	100	260	1.5-8.5	60	10,000
Polar C18	3	100	260	1.5-8.5	60	10,000

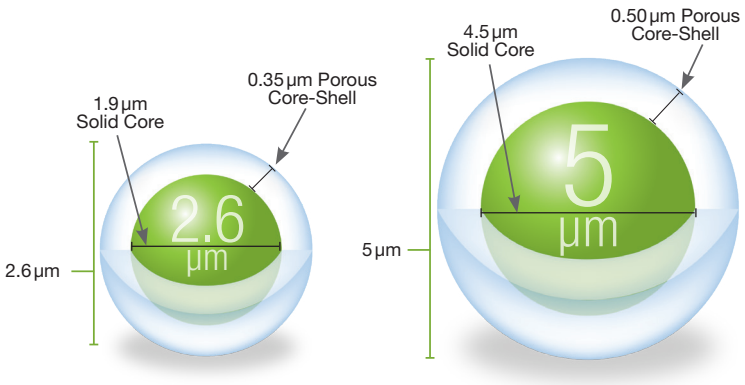
* Temperature and pH limits are dependent on method running parameters. Continuous use of Biozen columns at the maximum limit may compromise column longevity.

Advanced Core-Shell Particle in Nano Format

The Biozen Nano Columns utilize core-shell particles with a highly consistent morphology that minimizes band broadening associated with diffusion and mass transfer, leading to higher efficiency and minimal peak widths, which enhances the separation for omics analysis.

Core-Shell Particle Chemistry





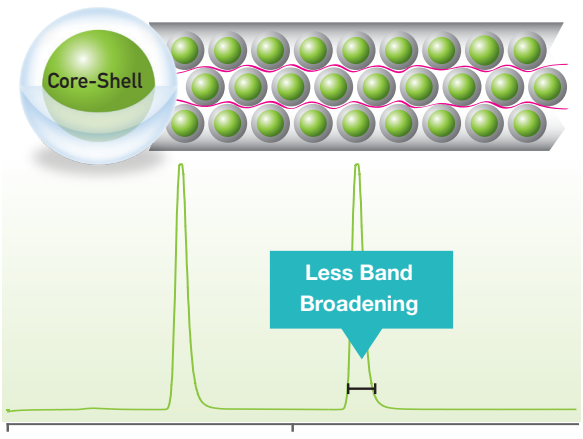
High Efficiency Core-Shell Particle

Using a rigorous core construction process, a uniform porous silica layer is grown around the spherical solid silica core. This unique combination of precise particle architecture and particle size provides dramatic leaps in performance.

Fully Porous		Biozen Nano Core-Shell	Average Efficiency Gain with Biozen Nano Core-Shell
5 µm	vs	5 µm	90 % Higher
3 µm	vs	2.6 µm	85 % Higher
1.7 µm	vs	2.6 µm	Equivalent Efficiency

Better Performance than Fully Porous Particles

Core-Shell Technology provides extremely high efficiencies for omics analysis. Industry leading column packing technology in combination with high particle consistency produces highly reproducible columns that generate greater performance compared to fully porous particles. This ultra-high efficiency can be leveraged to achieve increased resolution, improved sensitivity, and higher productivity.



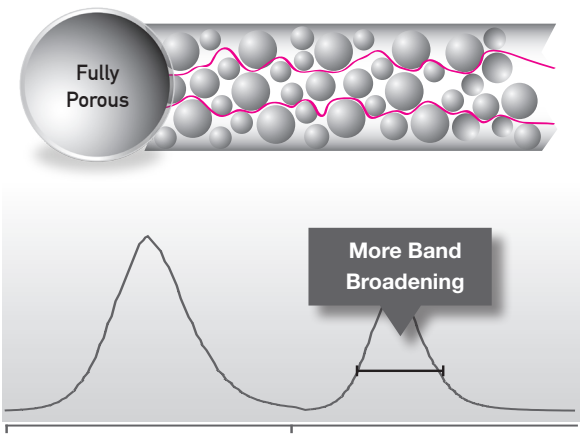


Illustration - not actual test data

Zero Dead-Volume Nano LC Connections in a CLICK

Biozen Nano's fully integrated SecurityLINK™ fingertight fitting system simplifies your system connections while providing consistent performance through Torque Limiting Technology that prevents overtightening or undertightening making every connection leak-free.

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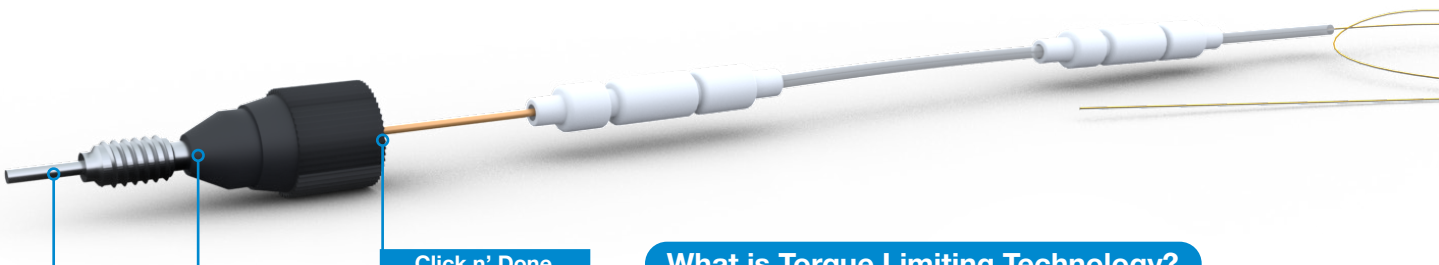


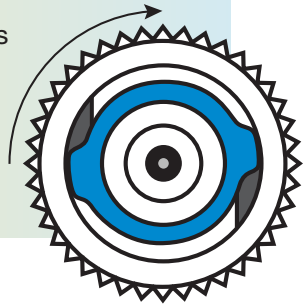
Fingertight
Easy fingertight installation, the "CLICK" feedback confirms connection is secure

Zero Dead-Volume
Sealing technology eliminates extra internal volume

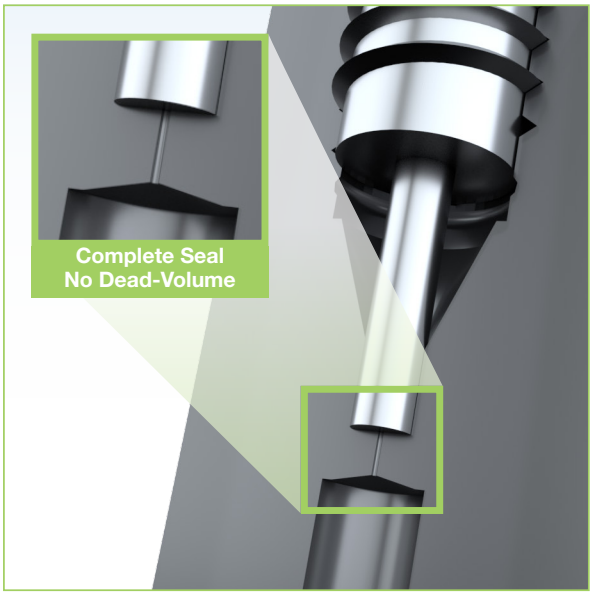
Click n' Done
Torque Limiting Technology prevents overtightening or undertightening

What is Torque Limiting Technology?

Once the perfect connection has been made through fingertightening, the SecurityLINK fitting offers a haptic "CLICK" to confirm that optimum torque has been reached. This ensures a consistent connection each and every time and prevents over or undertightening that may cause column performance issues.

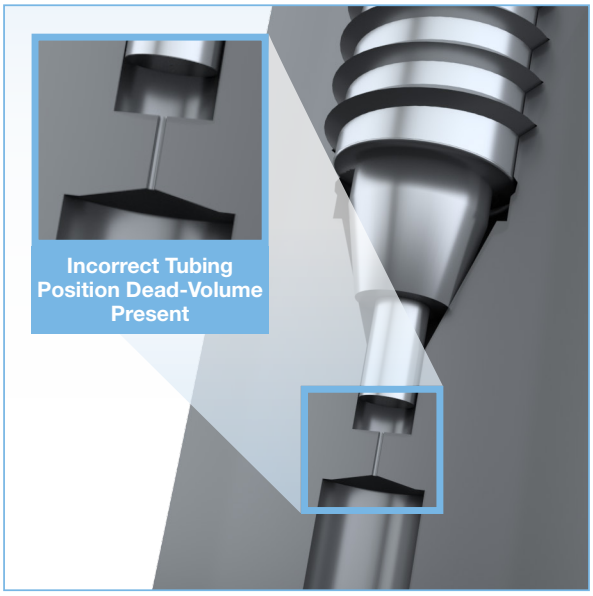


Biozen Nano Column with Integrated SecurityLINK Fingertight Fittings



vs.

Nano Columns using Standard Nut Ferrule Fittings

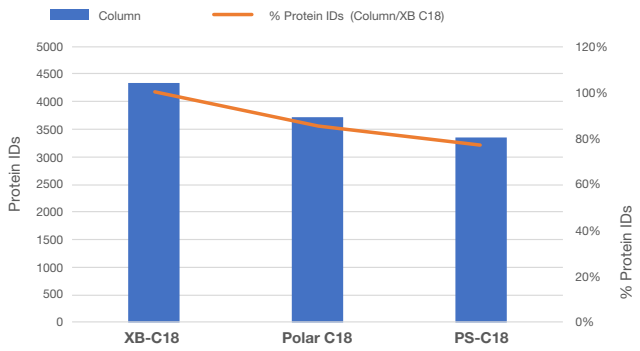


Robust Selectivity Portfolio for Improved IDs and Peak Shape

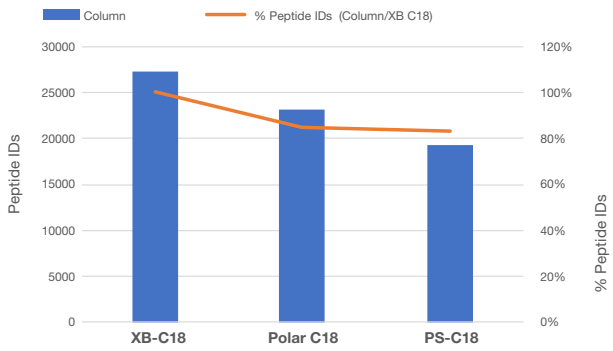
The total number of proteins and peptides that were identified using nano LC-MS analysis while using Biozen 2.6 µm Peptide XB-C18, Biozen 3 µm Polar C18, and Biozen 3 µm Peptide PS-C18 columns.

Column Selectivity Comparison

Protein Identifications

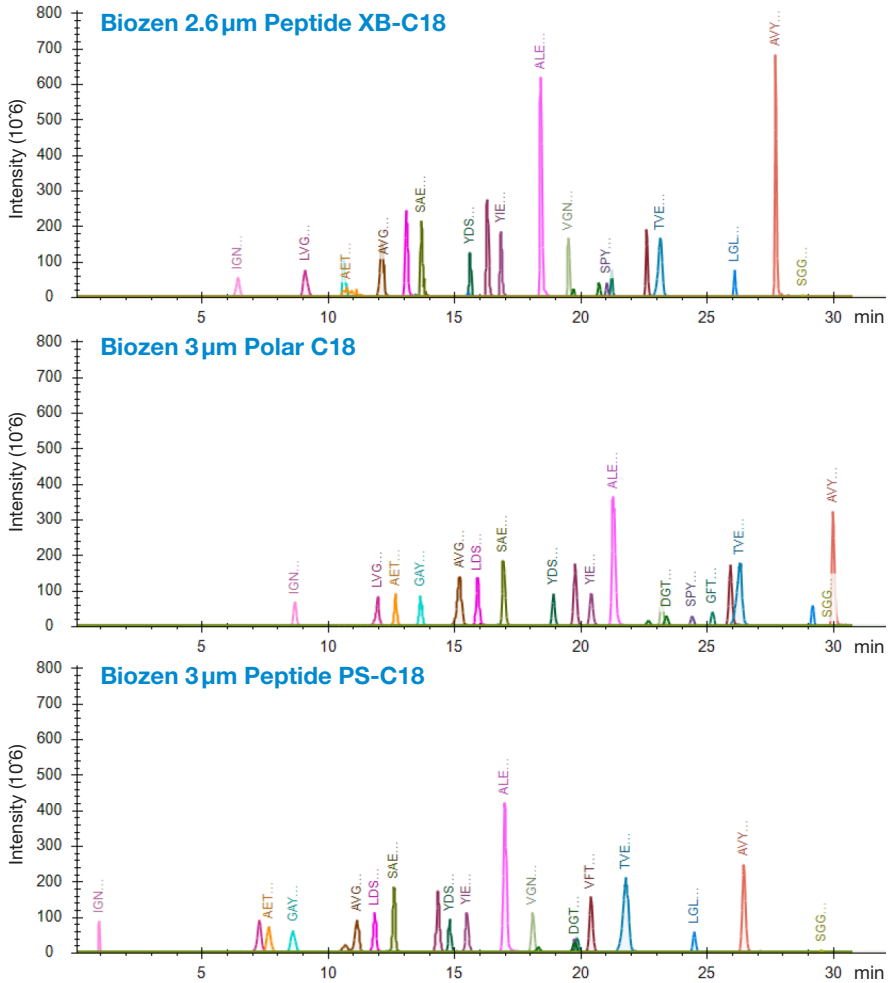


Peptide Identifications



Column Peak Width Comparison

The core-shell based Peptide XB-C18 column had narrower peaks overall. The Polar C18 column had greater overall retention of the peptides. The Peptide PS-C18 column showed very short retention for the most hydrophilic IGN peptide despite retention of the peptide being short, the peak was extremely narrow.



Improved IDs for Trap and Elute Analysis

Number of proteins and peptides that were identified on a nano LC-MS analysis of a digested HeLa sample using a Biozen 2.6 µm Peptide XB-C18 column formatted in direct inject, trap and elute using a RP-1 trap and a RP-2 trap respectively.

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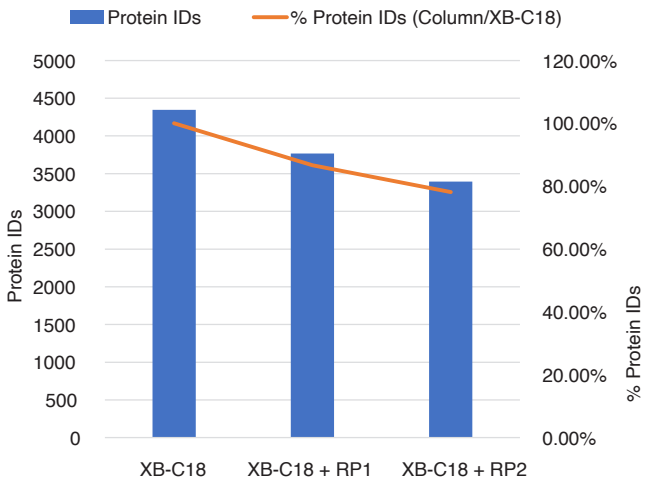
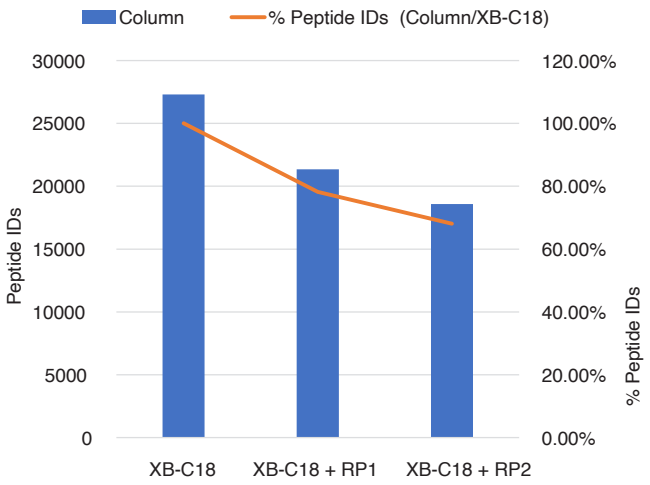
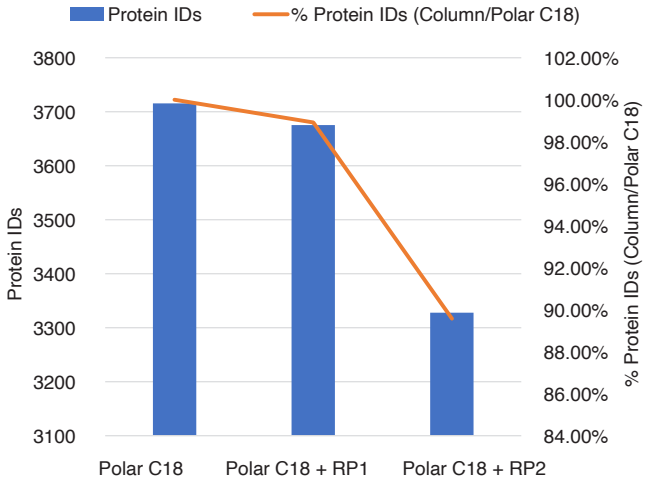
Peptide XB-C18 + Trap Selectivity Protein Identifications



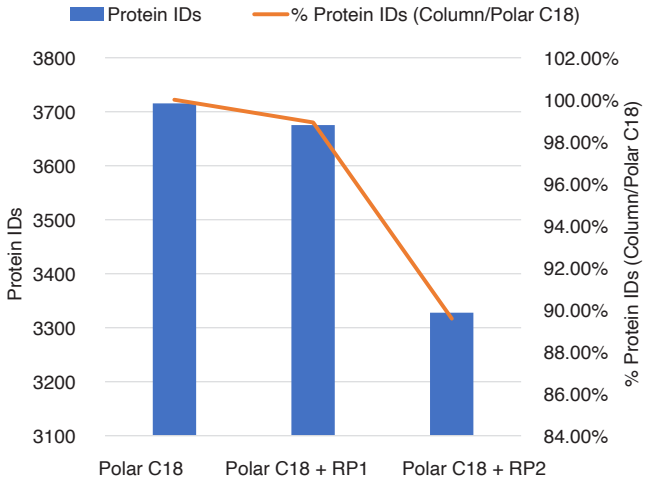
Peptide XB-C18 + Trap Selectivity Peptide Identifications



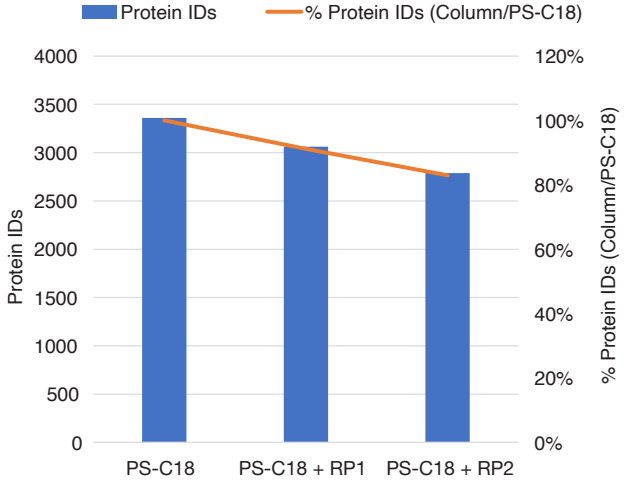
Polar C18 + Trap Selectivity Protein Identifications



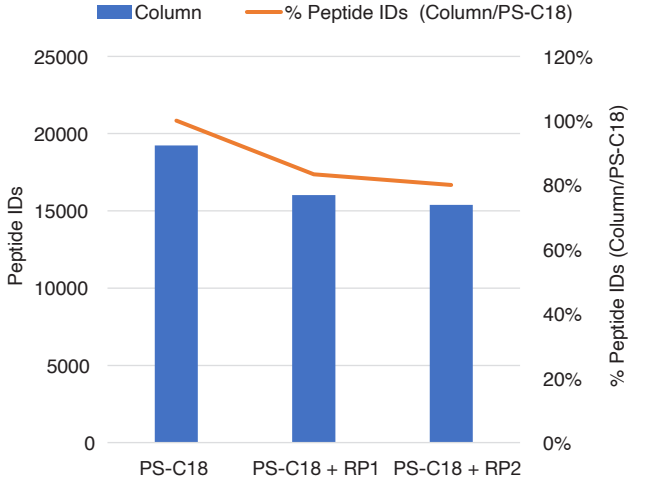
Polar C18 + Trap Selectivity Peptide Identifications



Peptide PS-C18 + Trap Selectivity Protein Identifications



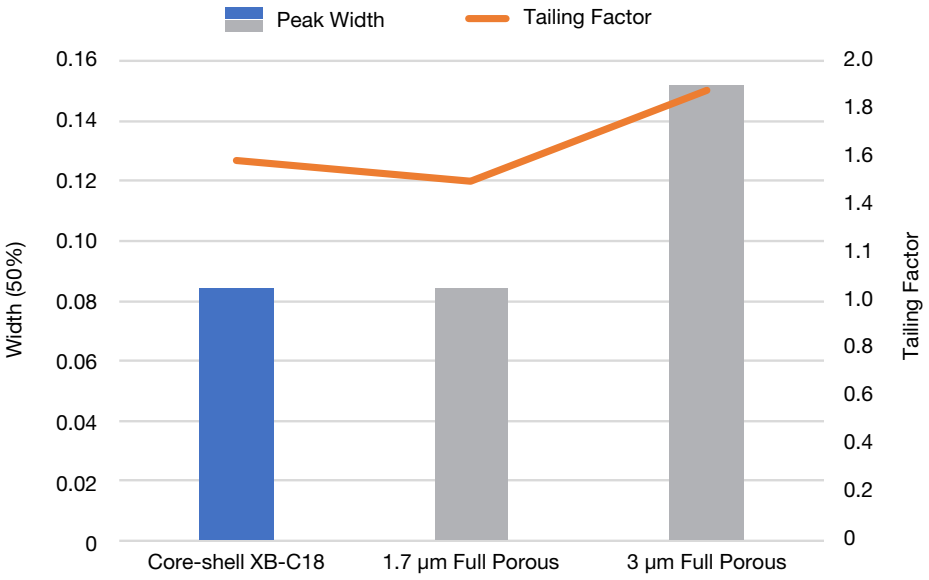
Peptide PS-C18 + Trap Selectivity Peptide Identifications



Robust Performance for Low-Flow Analysis

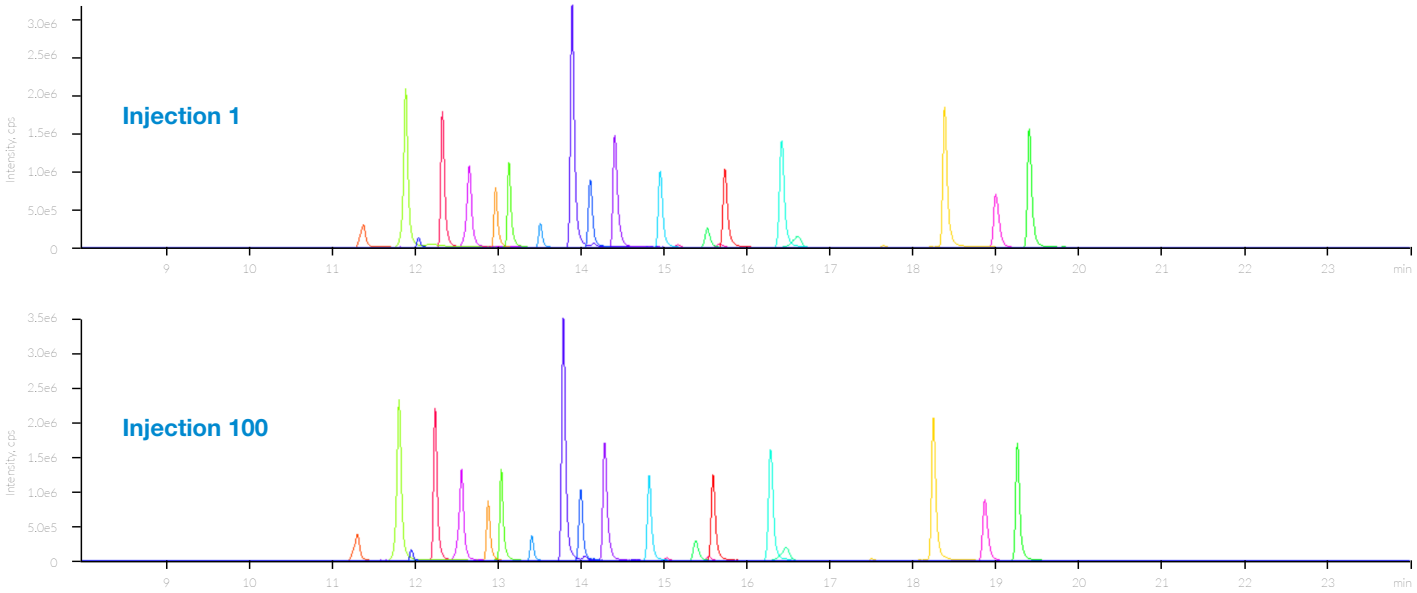
Peak widths and tailing factors obtained from a mixture of 20 isotopically labeled peptides injected on columns packed with Biozen 2.6 µm core-shell Peptide XB-C18, Thermo Fisher® Acclaim™ PepMap™ 100 nanoViper™ 3 µm fully porous C18, and Waters® nanoEase® M/Z Peptide BEH 1.7 µm fully porous C18 particles, respectively

Minimum Peak Widths with Nano Core-Shell



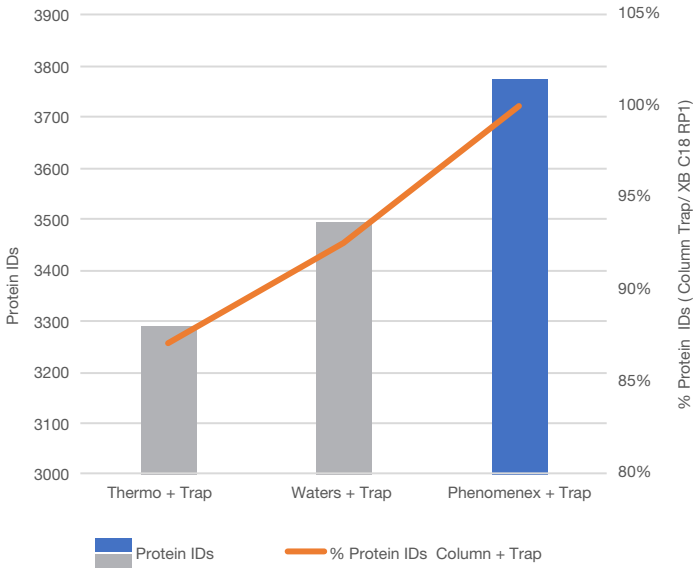
Reproducible Performance

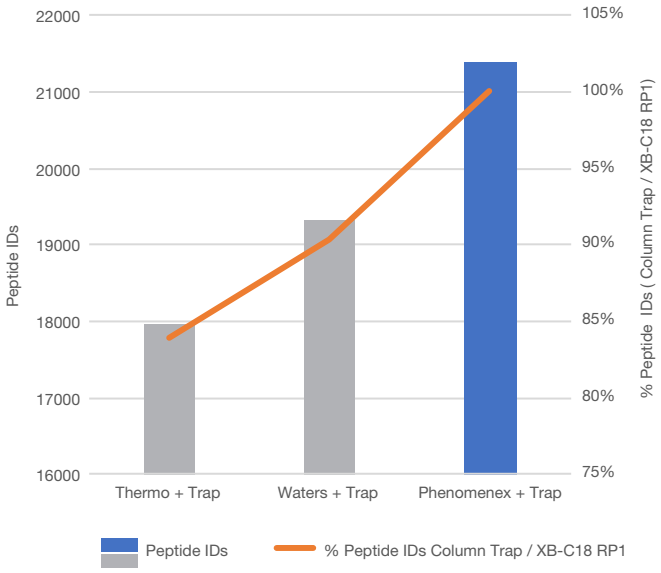
Extracted Ion chromatograms of injection 1 and 100 from a mixture of 20 isotopically labeled peptides run on a Biozen 2.6 µm Peptide XB-C18 150 x 0.075 mm column.



Robust Column Performance

Number of proteins and peptides that were identified on a nano LC-MS analysis of a digested HeLa sample using a Thermo Fisher® Acclaim™ PepMap™ 100 nanoViper™ 3 µm C18, Waters® nanoEase® M/Z Peptide BEH 1.7 µm C18, and Biozen 2.6 µm Peptide XB-C18, in trap and elute mode with Thermo Fisher Acclaim PepMap nanoViper, Waters nanoEase M/Z Symmetry C18, and Nano Trap RP-1 (General RP) traps, respectively.

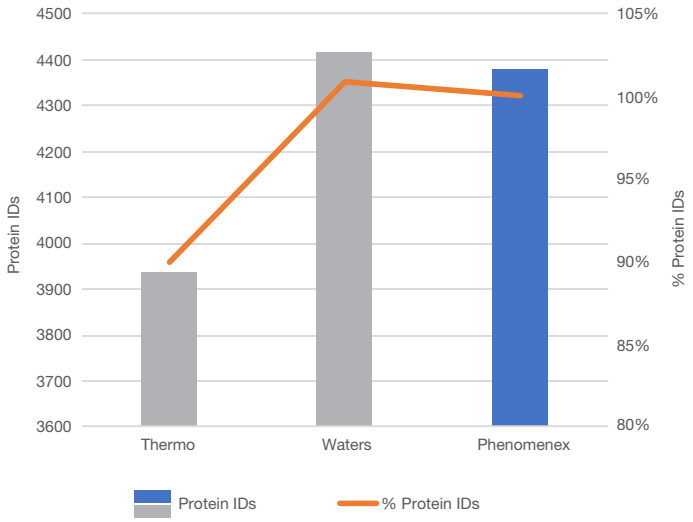




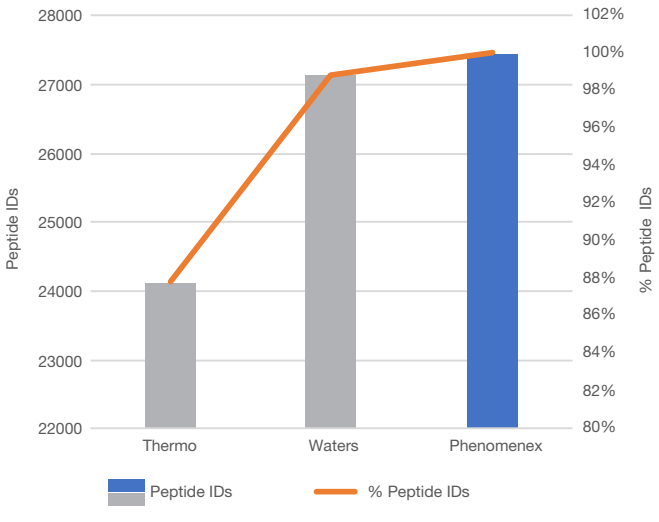
Nano LC Column Manufacturer Comparison

Number of proteins and peptides that were identified on a nano LC-MS analysis of a digested HeLa sample using a Thermo Fisher Acclaim PepMap 100 nanoViper C18, Waters nanoEase M/Z Peptide BEH 1.7 µm C18, and Biozen 2.6 µm Peptide XB-C18, in direct inject mode.

Protein ID Comparison



Protein ID Comparison



Fingers Only Installation
Leak-Free Connections in 2 Easy Steps

The Biozen Nano LC Column's integrated SecurityLINK™ fingertight fitting system simplifies your system connection process and provides consistent performance with Torque Limiting Technology that prevents column damaging overtightening. No tools required for installation ever again!

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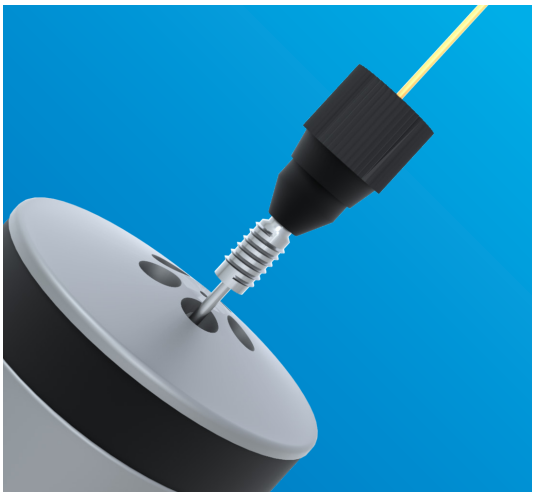
STEP 1

Insert Biozen Nano LC Column...

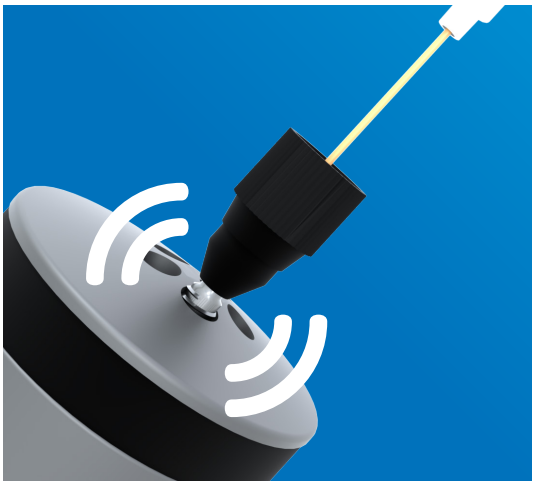
SecurityLINK fitting into the column port.



STEP 2

Slowly fingertighten the...

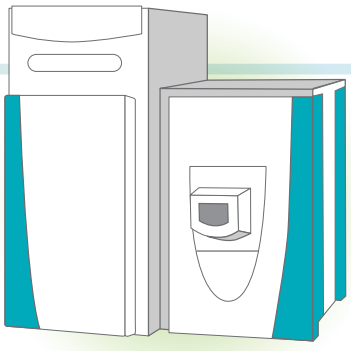
SecurityLINK fitting until the first "**CLICK**" is received.
Your **Leak-Free** connection is now complete!



System Compatibility

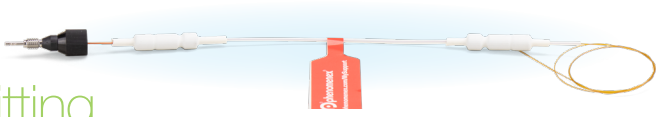
Biozen Nano Columns with integrated SecurityLINK Fittings were designed to be compatible with the majority of systems that are available on the market today.

Compatible with any System with $^{1}/_{16}$ in. Ports.



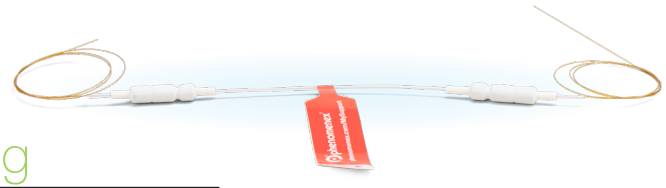
Ordering Information

Biozen Nano LC Columns with Integrated SecurityLINK™ Fitting



Phases	150 x 0.075 mm	250 x 0.075 mm	500 x 0.075 mm
Biozen 3 µm Peptide PS-C18	00F-4771-AW-21	00G-4771-AW-21	–
Biozen 2.6 µm Peptide XB-C18	00F-4768-AW-21	00G-4768-AW-21	00J-4768-AW-21
Biozen 3 µm Polar-C18	00F-4782-AW-21	00G-4782-AW-21	–
Biozen 5 µm Peptide XB-C18	–	–	00J-4792-AW-21

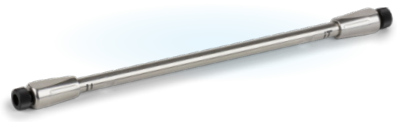
Biozen Nano LC Columns with Open Fused-Silica Inlet Fitting



Phases	150 x 0.075 mm	250 x 0.075 mm	500 x 0.075 mm
Biozen 3 µm Peptide PS-C18	00F-4771-AW-11	00G-4771-AW-11	–
Biozen 2.6 µm Peptide XB-C18	00F-4768-AW-11	00G-4768-AW-11	–
Biozen 3 µm Polar-C18	00F-4782-AW-11	00G-4782-AW-11	–
Biozen 5 µm Peptide XB-C18	–	–	00J-4792-AW-11

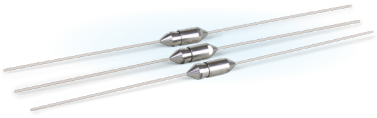
High pH Fractionation Column

Fractionation Column		
Part No.	Description	Dimension
00F-4793-AN	Biozen 3 µm High pH Fractionation Column	150 x 2.1 mm



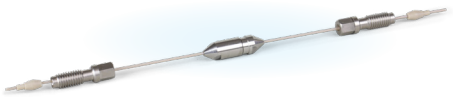
Nano Trap Columns

Trap Columns		
Phases	10 x 0.075 mm	Unit
RP-1 (General RP)	05N-4252-AW	3/pk
RP-2 (Aqueous Stable RP)	05N-4754-AW	3/pk



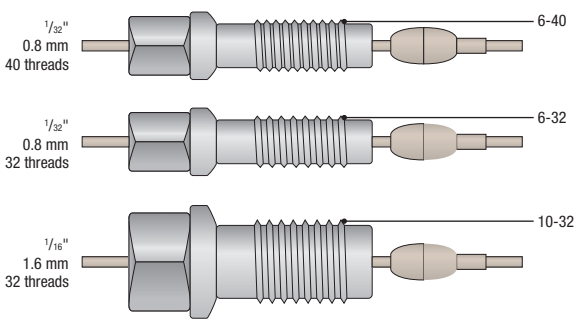
Fittings

Trap Fittings		
Part No.	Description	Unit
AQ0-7602	PEEKLok™ fittings with 6-40 thread for 1/32" OD tubing (2 x fittings, 6 x ferrules and 1 x tightening tool)	ea
AQ0-7603	PEEKLok fittings with 6-32 thread for 1/32" OD tubing (2 x fittings, 6 x ferrules and 1 x tightening tool)	ea
AQ0-7600	PEEKLok fittings with 10-32 thread for 1/32" OD tubing with low profile hex head (2 x fittings, 6 x ferrules and 1 x wrench)	ea



Trap Fitting Guide

Traps		
Threads per Inch	Pitch (inches)	Pitch (mm)
32	0.0313	0.794
40	0.025	0.635



Caution

The installation of an improper nut could potentially cause cross-threading or damage to the port and fitting

Verify fit: Traps are available for 1/16" connections (10–32 thread) or with 1/32" connections (6–40 or 6-32 thread).

BE-HAPPY™ GUARANTEE

Your happiness is our mission. Take 45 days to try our products. If you are not happy, we'll make it right.
www.phenomenex.com/behappy

Ordering Information

Nano Cartridge		
Part No.	Description	Dimension
00F-4768-AW-SX	Biozen 2.6 µm Peptide XB-C18 Nano Cartridge for SCIEX	150 x 0.075 mm
00G-4768-AW-SX	Biozen 2.6 µm Peptide XB-C18 Nano Cartridge for SCIEX	250 x 0.075 mm
00J-4768-AW-SX	Biozen 2.6 µm Peptide XB-C18 Nano Cartridge for SCIEX	500 x 0.075 mm
00F-4782-AW-SX	Biozen 3 µm Peptide Polar-C18 Nano Cartridge for SCIEX	150 x 0.075 mm
00G-4782-AW-SX	Biozen 3 µm Peptide Polar-C18 Nano Cartridge for SCIEX	250 x 0.075 mm
00F-4771-AW-SX	Biozen 3 µm Peptide PS-C18 Nano Cartridge for SCIEX	150 x 0.075 mm
00G-4771-AW-SX	Biozen 3 µm Peptide PS-C18 Nano Cartridge for SCIEX	250 x 0.075 mm
00J-4792-AW-SX	Biozen 5 µm Peptide XB-C18 Nano Cartridge for SCIEX	500 x 0.075 mm

SCIEX® OptiFlow® Source for Nanoflow Chromatography

Single Source for All Low-Flow Chromatography

- Select the right chromatography for the workflow and samples because switching is easy and fast
- Couple with Phenomenex micro and nano columns for that plug-and-play experience
- Phenomenex column cartridge for plug-and-play solution SecurityLINK™ tubing for connection to inlet short tubing at outlet to connect to electrode

Always be working in the sweet spot of sensitivity and robustness

Easy to learn and use

Increased robustness

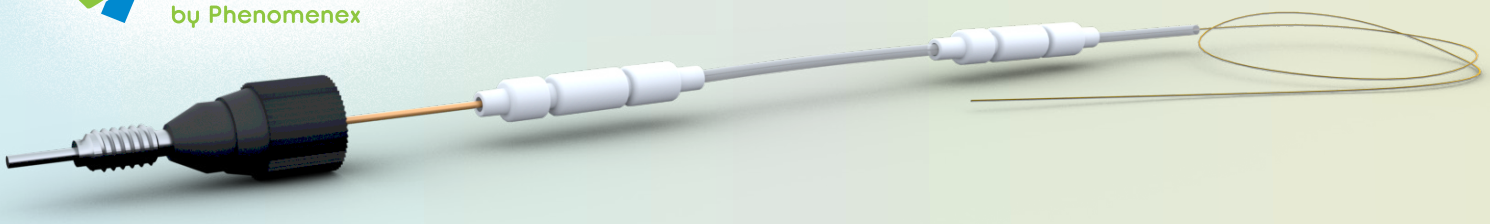
Pre-Optimized SteadySpray™ Probes & Electrodes

Sensitivity matters get high quality results, far faster, with the power of the new OptiFlow Source

Switch between micro and nanoflow in minutes

Durable low-flow source

biozen™
by Phenomenex



Biozen Nano LC Columns

For Omics Analysis

- Optimize IDs
- Consistent Results
- Easy Connections

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