LC-MS CONSUMABLES

PepSep® Consumables

Everything you need for your standard and advanced proteomics workflows

Innovation with Integrity

More samples.
Less time.
Better reproducibility.

Achieve precise separation of peptides and proteins with our cutting-edge reversed-phase HPLC columns. Experience deeper sequence coverage, higher sample throughput, and robustness, meeting the demands of even the most challenging samples. Tested at ultra fast PASEF® speeds, PepSep columns are robust, easy to use, and provide consistent results making it the perfect choice for your proteomics applications.

How do PepSep columns work?

Reversed-phase chromatography is a liquid chromatography method that separates analytes based on their hydrophobic interactions. It uses a stationary phase with hydrocarbon chains bonded to small particles (60–150 Å) that have high carbon content, offering a large surface area for better retention and resolution of peptides and proteins. PepSep columns are also durable, making them suitable for tough samples.

What we offer:

- **PepSep Advanced**
  Advanced columns delivering superior sensitivity and resolution for cutting-edge proteomics.
- **PepSep Classics**
  Reliable and versatile columns designed for routine proteomic analyses.
- **PepSep Emitter**
  Ready to use fused silica emitter. Simple plug and play design.

PepSep Advanced:
Designed for Consistent, High-Quality Protein and Peptide Separation

PepSep Advanced columns support accurate detection and quantification of a wide range of proteins and peptides across diverse proteomics applications. Their design enables high sensitivity while minimizing clogging and back pressure, offering a practical alternative to traditional pulled-tip columns.

Key Features

- **Leading Sensitivity:** Detects low-abundance peptides with maximum confidence.
- **Enhanced Peak Sharpness:** Achieves precise separations for improved data clarity.
- **Comprehensive Identifications:** Expands protein and peptide discovery capabilities.
- **Uncompromised Robustness:** Optimized flow dynamics and lower back pressure for smoother and faster operation.

Lynn Spruce

Technical Director, CHOP-PENN Proteomic Core Facility, Philadelphia, USA

"The new PepSep column has proven to be robust and consistently delivers reproducible chromatography. It produces sharper, more symmetrical peaks with no observable tailing, resulting in a 7–8% increase in identifications. Combined with the convenience of interchangeable emitters and competitive pricing, it has become our go-to column. It's essentially plug-and-play."

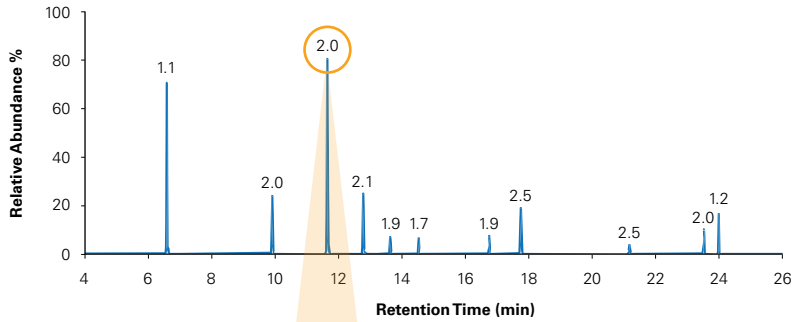
PepSep

Advanced

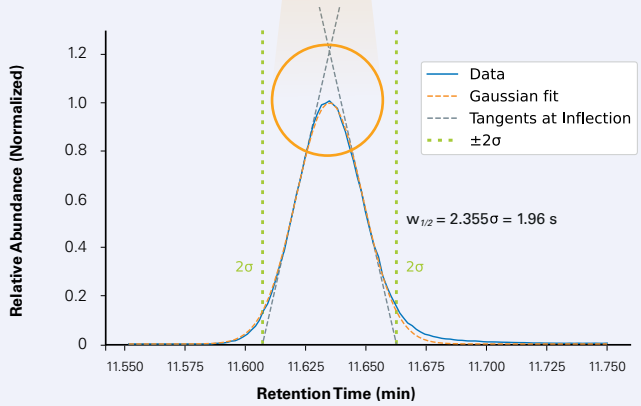
25 cm x 75 µm x 1.5 µm

- Part No.: 1919826
- Stationary Phase: C18
- Column type: reversed phase
- Pore size: 100 Å (1.5 µm)
- Surface area: 400 m²/g (1.5 µm)
- Temperature limits: 60°C
- Ultra-High-Pressure inlet (up to 1000 bar)
- Patented nanoConnect outlet
- Recommended flow rate: 100-400 nL/min
- Applications: Single Cell Proteomics, Immunopeptidomics, General Proteomics, Plasma Proteomics, Analysis of PTM peptides, e.g., phosphopeptides

Achieves precise separations for improved data clarity



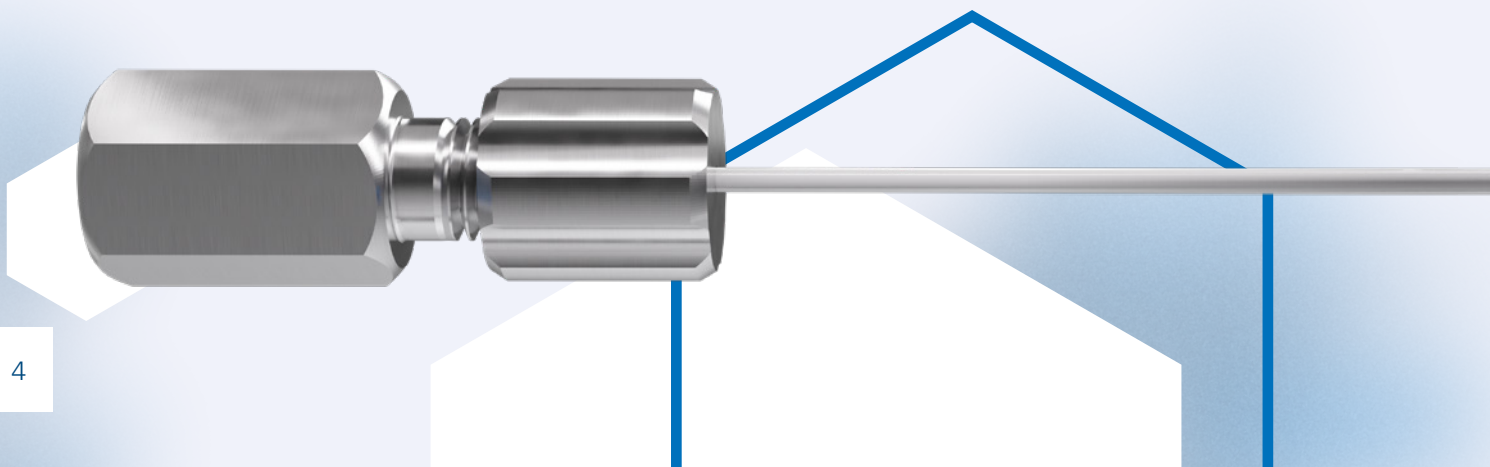
FWHM determination of Peak 3 using Gaussian Fit



FWHM (Peak 3): 1.96 s
Tailing (Peak 3): 1.06

Average FWHM (Peak 1-11): 1.89 s
Average Tailing (Peak 1-11): 1.04

Figure 1. Retention times and peak widths of Biognosys iRT Kit peptides (1 µL injection volume, 1/300 dilution of stock solution) on a PepSep Advanced column (25 cm x 75 µm x 1.5 µm) coupled to nanoElute 2 and timsTOF Ultra, using a 22-minute active gradient.



Developed for Ultimate Sensitivity and enhanced Peptide Coverage

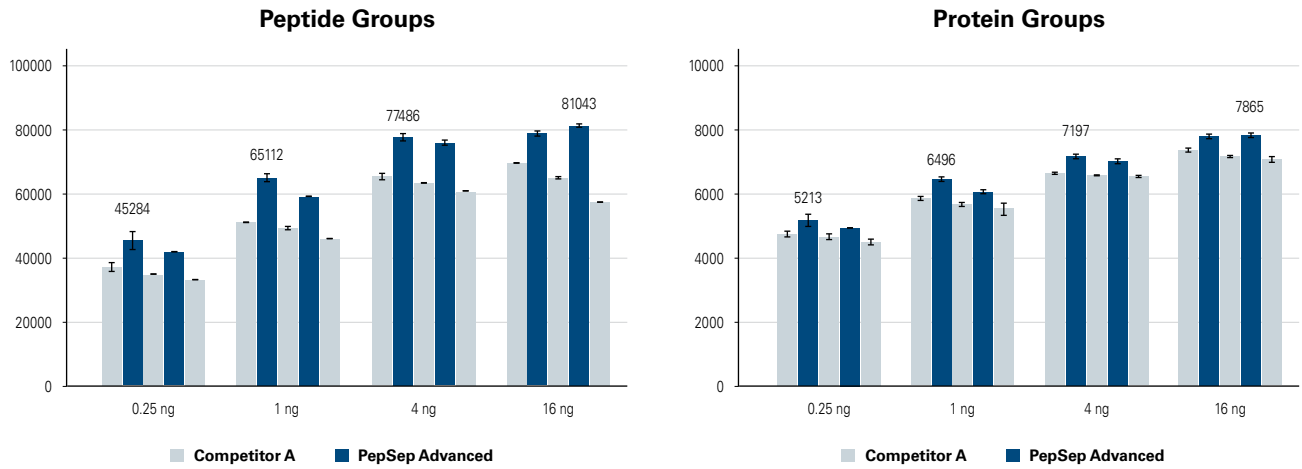


Figure 2. Identified unique peptide and protein groups, from 0.25, 1, 4 and 16 ng HeLa Tryptic Digest injection on an PepSep Advanced column (25 cm x 75 µm x 1.5 µm) and Competitor A Column (pulled tip column, 25 cm x 75 µm x 1.7 µm). Samples were run on a nanoElute 2 coupled to a Bruker timsTOF Ultra 2, dia-PASEF acquisition. Data analysed using DIA-NN 1.8.1.

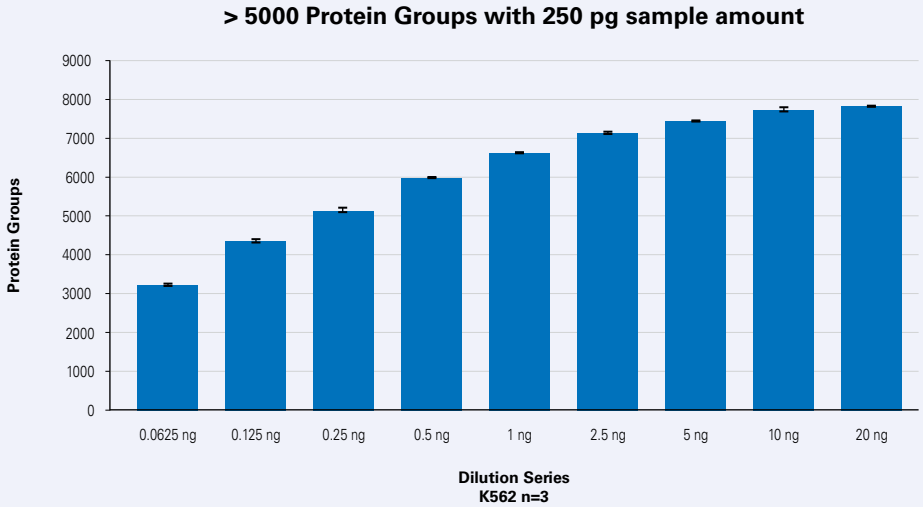
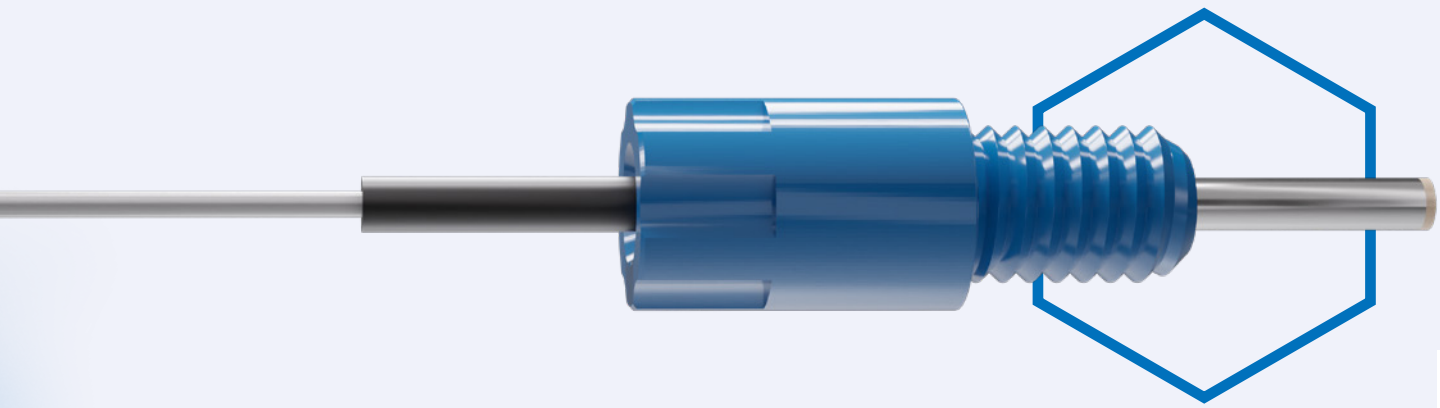
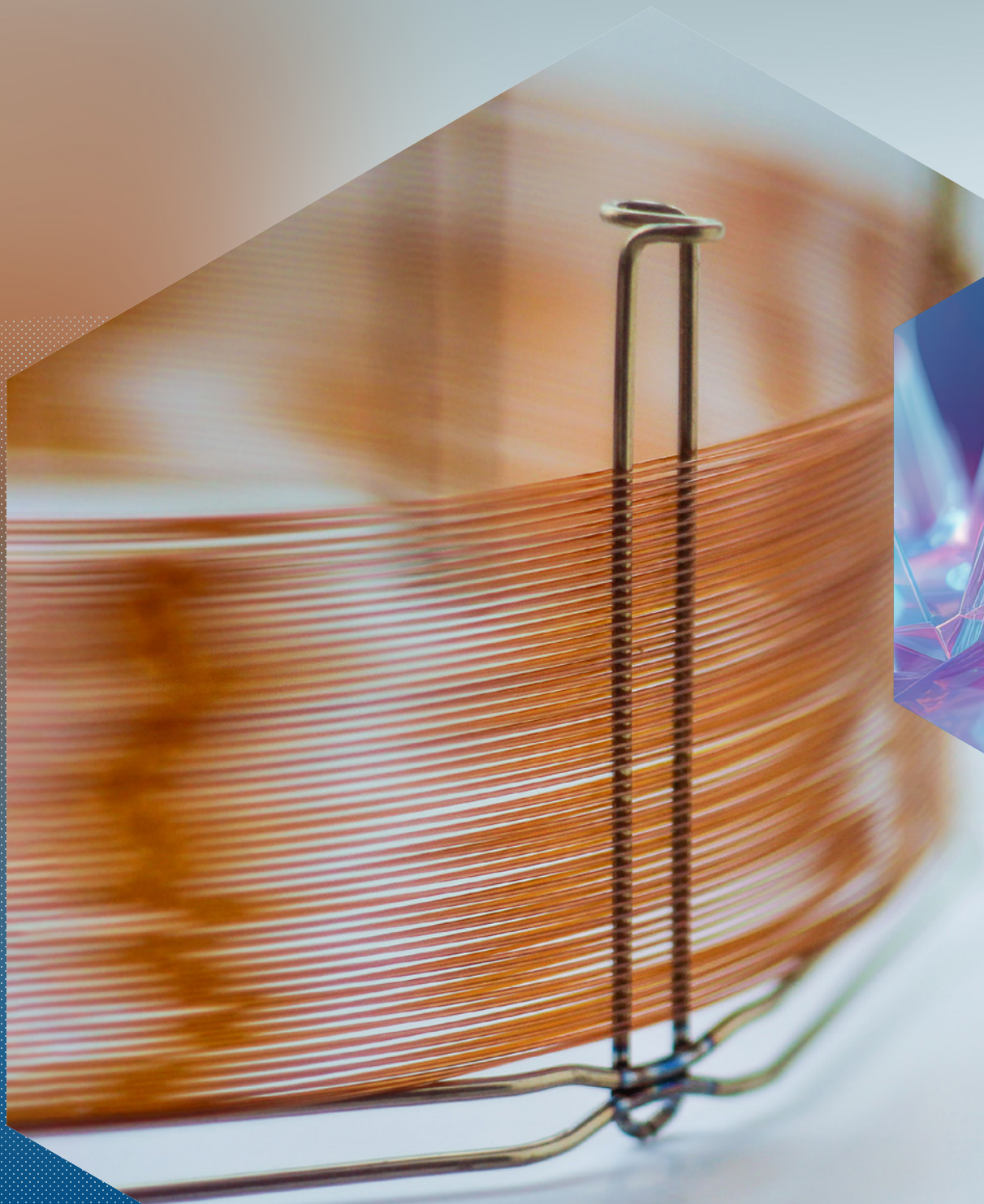


Figure 3. Identified unique protein groups, from various amounts of K562 injections on an PepSep Advanced column (25 cm x 75 µm x 1.5 µm) using a 22 min active gradient. Samples were run on a nanoElute 2 coupled to a Bruker timsTOF Ultra AIP, dia-PASEF acquisition. Data analysed using DIA-NN 1.8.1 and K562 lib-based.



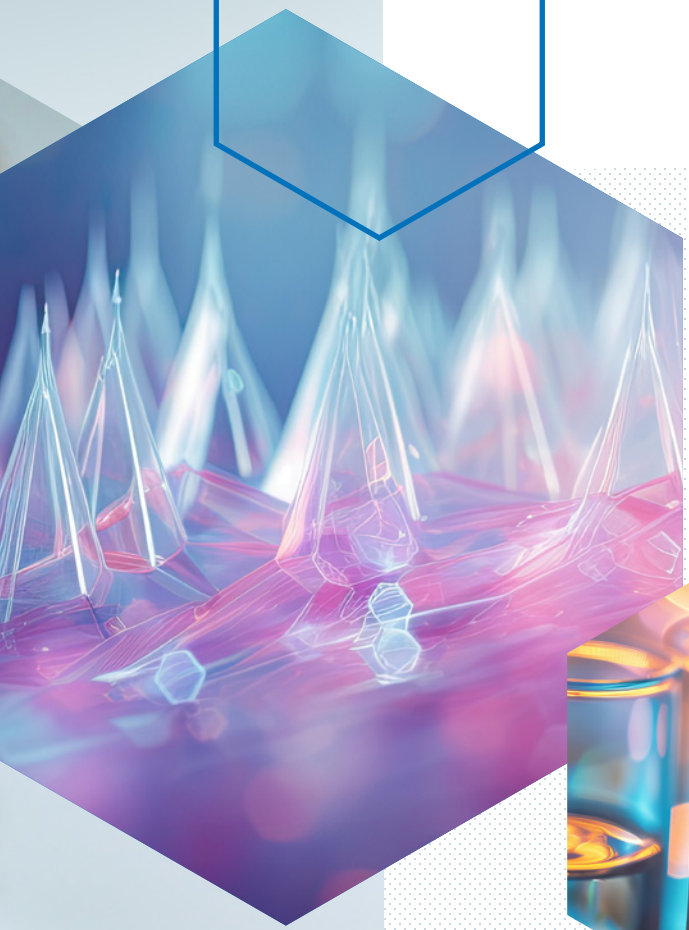
Experience deeper sequence coverage, higher sample throughput, and robustness.



Balyn W. Zaro, Ph.D.

Assistant Professor, Department of Pharmaceutical Chemistry, University of California, San Francisco, USA

"PepSep columns are the best columns I have ever worked with. Their performance and durability are unprecedented. Best-in-class at a fantastic price point. We are customers for life."



PepSep Classics:
Versatile Solutions for Standard Proteomics Workflows

Achieve unparalleled reliability and efficiency in all proteomics applications with PepSep Classics Columns. Experience enhanced throughput for rapid analyses, robust durability for consistent long-term performance, and exceptional flexibility for a wide range of separation tasks. With a cost-effective design featuring separated emitters, PepSep Classics Columns deliver unmatched value and versatility to empower your laboratory workflows.

Key Features

- **Robust Durability:** Engineered for consistent performance over extended use.
- **Accelerated Throughput:** Optimized for rapid analyses to increase laboratory efficiency.
- **Exceptional Flexibility:** Accommodates a wide range of separation tasks with ease.
- **Cost-Effective Solution:** Attractive pricing and longer lifespan with separated emitters.

Danielle Swaney, Ph.D.

Assistant Professor, Cellular Molecular Pharmacology, University of California, San Francisco, USA

"These columns really hit a sweet spot of top-notch chromatography but with minimal back pressure. When compared to traditional nanospray columns, this allows us to use higher flow rates and minimize LC overhead time. This has been crucial for throughput, particularly when thousands of samples using shorter gradients."

For your unique needs

PepSep

Classics

Various dimensions

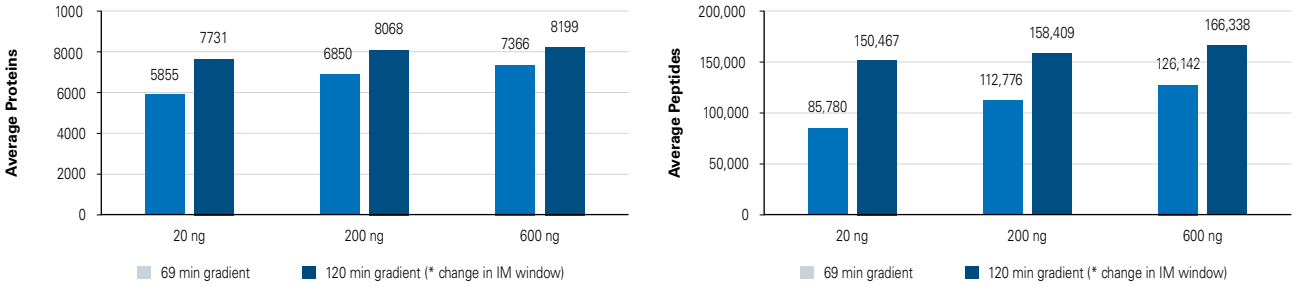
- Part No.: various, see table
- Stationary Phase: C18
- Column type: reversed phase
- Pore size: 100 Å (1.5 µm) or 120 Å (1.9 µm)
- Surface area: 400 m²/g (1.5 µm) or 300 m²/g (1.9 µm)
- Temp. limits: 60°C
- Ultra-High-Pressure inlet (up to 1000 bar)
- Patented nanoConnect outlet
- Recommended flow rate: various, see table
- Applications: various, see table

	Application	Part No.	Description	Flow Rate [nL/min]
Sensitivity	Single Cell Proteomics Immunopeptidomics General Proteomics High Sensitivity	1895846 1893484 1893627 1893625 1893626 1895803	PepSep ULTRA XL 50 cm x 75 µm x 1.5 µm PepSep ULTRA 25 cm x 75 µm x 1.5 µm PepSep 25cm x 50 µm x 1.5 µm PepSep 15cm x 75 µm x 1.5 µm PepSep 15cm x 50 µm x 1.5 µm PepSep 10cm x 75 µm x 1.5 µm	100 - 250 100 - 400 50 - 200 150 - 750 50 - 300 150 - 1000
	Single Cell Proteomics Immunopeptidomics General Proteomics	1893477 1893473 1893472	PepSep 25cm x 75 µm x 1.9 µm PepSep 15cm x 75 µm x 1.9 µm PepSep 10cm x 75 µm x 1.9 µm	100 - 600 200 - 1000 150 - 1500
Optimization	General Proteomics Plasma Proteomics Mixed Samples Gradient Versatility	1893476 1895838 1893479 1893471 1893474	PepSep XTREME 25 cm x 150 µm x 1.5 µm PepSep 40cm x 150 µm x 1.5 µm PepSep 25cm x 150 µm x 1.9 µm PepSep 15cm x 150 µm x 1.9 µm PepSep 15cm x 150 µm x 1.5 µm	500 - 1500 500 - 1000 500 - 2000 500 - 2000 500 - 1500
Throughput	General Proteomics Plasma Proteomics Mixed Samples Gradient Versatility High-Throughput	1893483 1893470 1903885 1895619	PepSep MAX 10 cm x 150 µm x 1.5 µm PepSep 8cm x 150 µm x 1.5 µm PepSep MAX HT 5cm x 150 µm x 1.5 µm PepSep 4cm x 150 µm x 1.9 µm	500 - 4000 500 - 5000 500 - 5000 500 - 5000

PepSep

ULTRA XL

50 cm x 75 µm x 1.5 µm

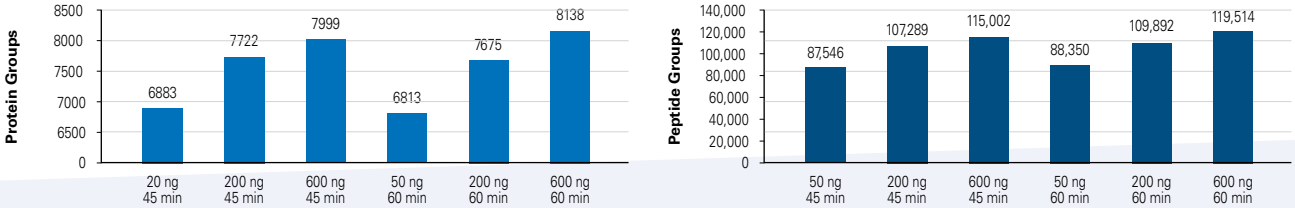


Analysis of various concentrations of K562 tryptic peptides separated on the PepSep ULTRA XL 50 cm x 75 µm x 1.5 µm column attached to the timsTOF HT coupled to the nanoElute® 2. A standard DDA PASEF method, 1/k0 start 0.70, 1/k0 end 1.3 was used. Results were searched using Bruker ProteoScape™ search engine.

PepSep

XTREME

25 cm x 150 µm x 1.5 µm

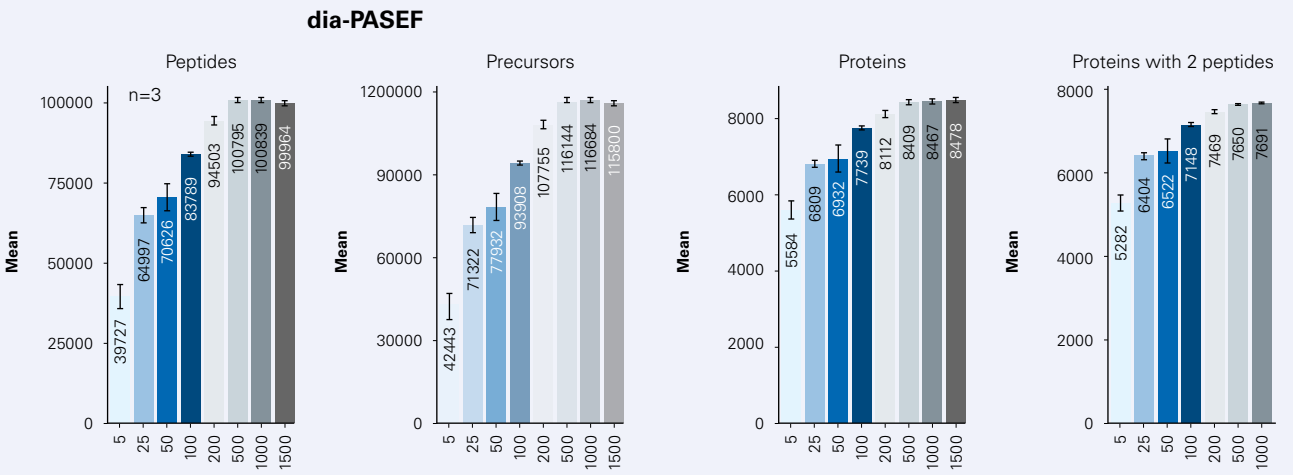


Quantitative analysis of different concentrations of K562 tryptic peptides on the PepSep XTREME 25 cm x 150 µm x 1.5 µm on 45- and 60-minute gradients: Coupled with nanoElute and timsTOF HT Instruments, employing a 6x3 dia-PASEF window scheme for enhanced performance. Realtime data search conducted using Bruker ProteoScape.

PepSep

MAX

10 cm x 150 µm x 1.5 µm



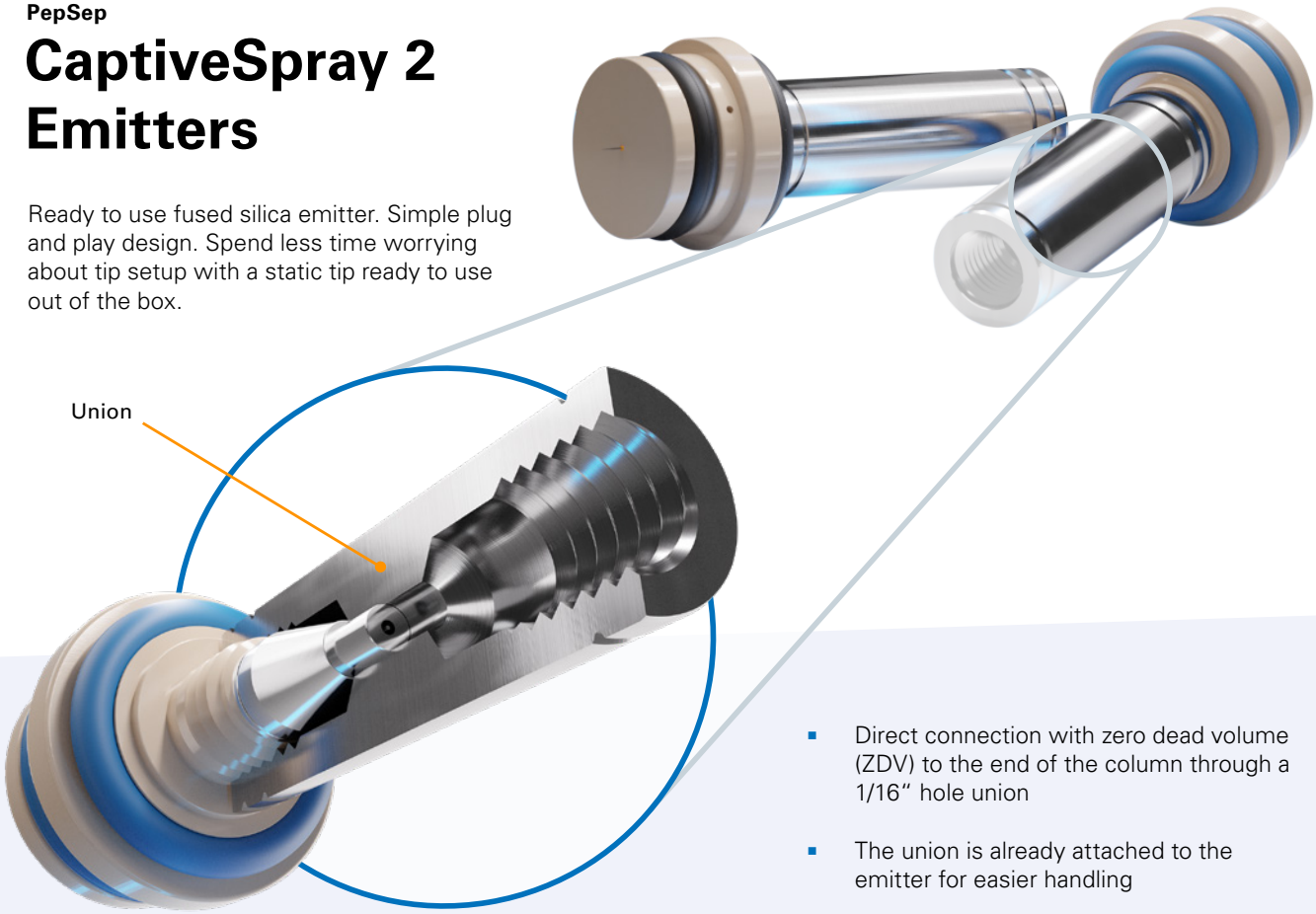
Quantitative analysis of K562 (with ddm) concentrations using PepSep MAX 10 cm x 150 µm x 1.5 µm coupled to nanoElute 2 and timsTOF HT: Employing a 45-minute gradient and 6x3 dia-PASEF window scheme for enhanced characterization, with results analyzed via Bruker ProteoScape.

When performance meets simplicity

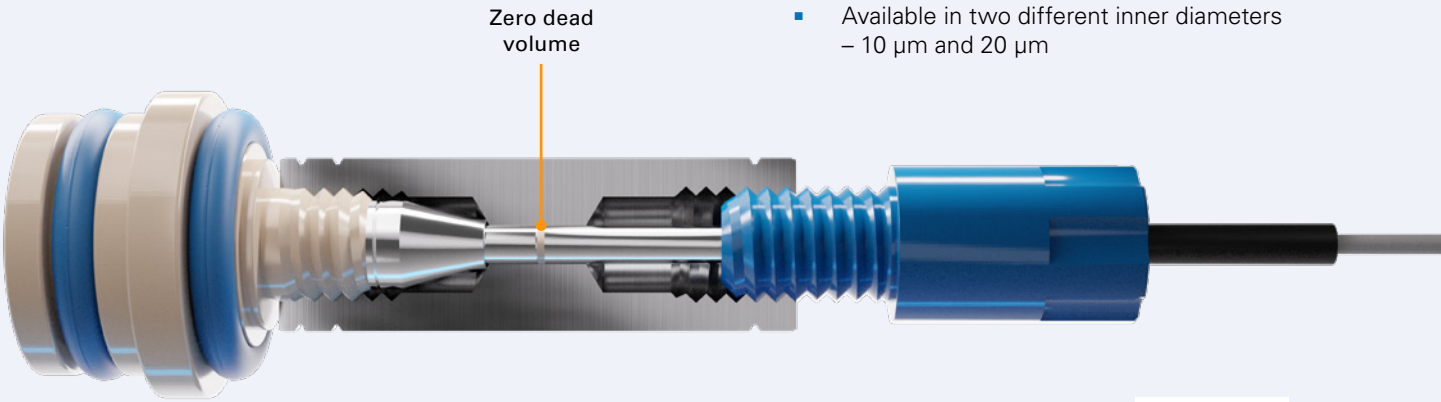
PepSep

CaptiveSpray 2 Emitters

Ready to use fused silica emitter. Simple plug and play design. Spend less time worrying about tip setup with a static tip ready to use out of the box.



- Direct connection with zero dead volume (ZDV) to the end of the column through a 1/16“ hole union
- The union is already attached to the emitter for easier handling
- Grounding is done via a liquid film between a capillary and the metal stub
- Available in two different inner diameters – 10 µm and 20 µm



CaptiveSpray 2 Emitter
Order and product info:

PepSep

Where performance meets simplicity

Ready for Superior Performance?
Scan to get your New PepSep Consumables!

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