



Prodigy

Peptide Purification System





CEM Prodigy 50 µm, 0.160, 100 A

CEM Prodigy Assistant Module

CEM Prodigy Pump Module

Powerful Peptide Purification

The Prodigy Preparative HPLC system is engineered for the best resolution of biomolecules and synthetic peptides. Key to system performance is its unique elevated temperature chromatography that provides improved separation capabilities beyond traditional preparative HPLC. This technology is supported by CEM's proprietary focused gradient calculator that delivers optimized method transfer from analytical to preparative scale without the need for re-optimization or scouting runs. With the Prodigy Preparative HPLC system, every chemist can improve resolution and recovery while saving time and solvent.



Integrated Heating System

Optimal preparative resolution and separation capabilities with maximum speed and efficiency.



Proprietary Focused Gradient Calculator

Save time and improve product recovery. Convert methods from analytical to preparative scale without scouting runs.



Intuitive Software

Icon-driven, touchscreen operation. Simple to use with flexible and powerful instrument programming.

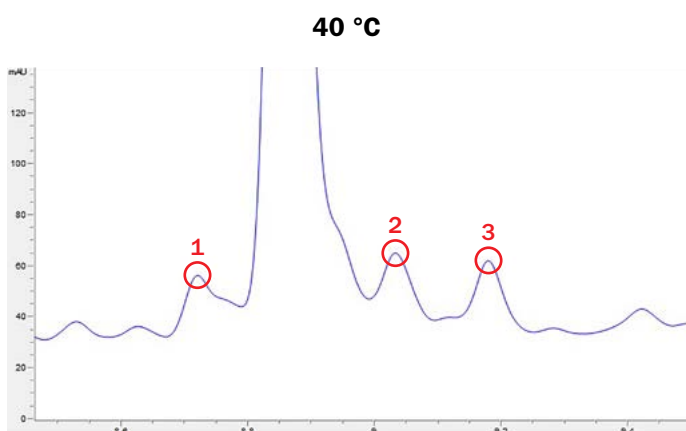
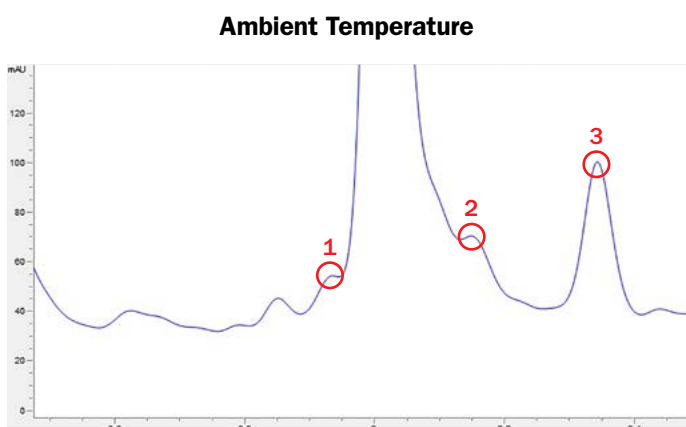
Specifications

Heating Range:	Ambient → 60°C	Loading Options:	Rheodyne manual injection valve with variable loop sizes (5, 10, 20 mL) Dual piston injection pump up to 10 mL/min
Heating System:	Oven: Column & sample loop Optional mobile-phase pre-heater (for flow rates > 30 mL/min)	Detector:	Single wavelength UV detector (190 – 500 nm)
Column Sizes:	10 – 50 mm diameter, up to 250 mm length	Fraction Collection:	Valve based — 15 positions in enclosure with dust filter and exhaust port
Peptide Loading:	≤ 50 mg per injection (10 mm x 250 mm column) ≤ 250 mg per injection (20 mm x 250 mm column) ≤ 500 mg per injection (30 mm x 250 mm column) ≤ 1.5g per injection (50 mm x 250 mm column)	Collection Racks:	16mm diameter (15 – 20mL glass tubes) 25mm diameter (60 – 70mL glass tubes) 30mm diameter (50 mL centrifuge tubes) 37mm diameter (140 mL glass tubes)
System Pumps:	Standard pump (4 – 50 mL/min optimal): 0 – 10 mL/min: 300 bar ≥ 10 – 50 mL/min: 200 bar High-Flow Pump (4 – 250 mL/min optimal): 0 – 100 mL/min: 225 bar 100 – 250 mL/min: 200 bar	Waste System:	20L HDPE container with carbon filter 60L HDPE container with carbon filter (for high-flow setup)
Solvent Reservoirs:	4 - Standard pump configuration 2 - High-flow pump configuration	Leak Detection:	Integrated leak detection system for all modules Solvent detection sensor in column oven
		System Dimensions (with oven)	52.3" x 20.6" x 19.7"

Resolve More Impurities

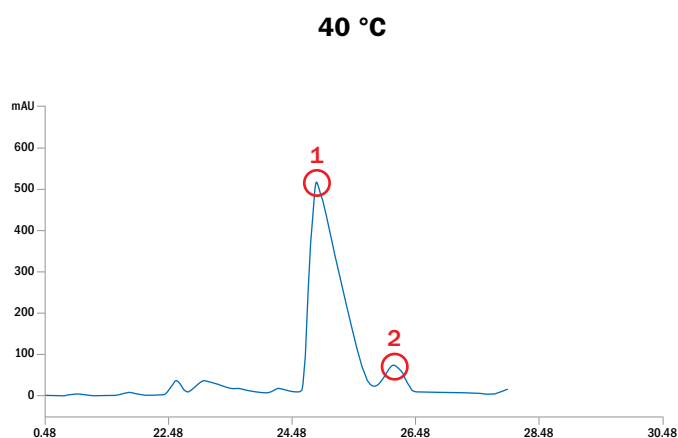
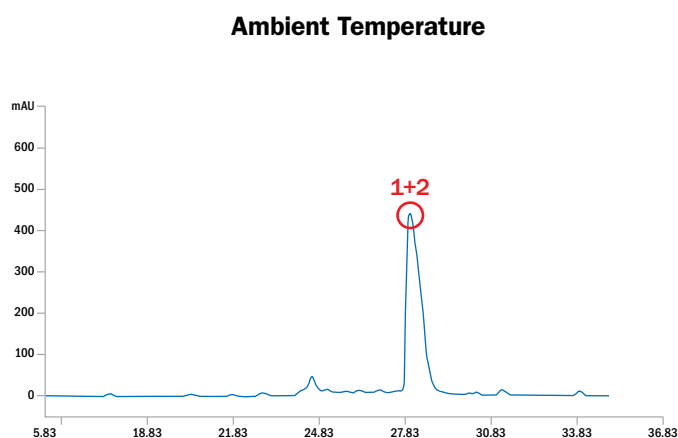
Analytical HPLC for peptides is performed at elevated temperature for the best resolution. Why not get the same great results for preparative separations? The fully integrated column heating system of the Prodigy HPLC translates this technology to the preparative scale with optimized methods designed by CEM peptide scientists. Heated preparative chromatography introduces another tunable parameter to improve the purification profile of even subtly different peptide impurities. With the Prodigy, every chemist has the ability to better resolve closely eluting impurities.

Neoantigen P24 (H-TNDVKTLADLNGVIEEEFT-NH2)



Conditions:
 Intrepid Column: 4.6 x 150 mm, 3 μ m, 100A.
 Method: 5 – 70%B (0.1% TFA in ACN) over 15 minutes, 1 mL/min, 220 nm.

14mer Peptide



Conditions:
 Intrepid Column: 5 mg injection, 21.2 x 250 mm, 5 μ m.
 Method: 15 – 30% B (0.1% TFA in ACN) over 40 mins, 24 mL/min, 220 nm.

49.5 / 50.0 °C



Clear

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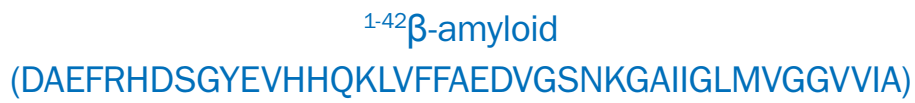
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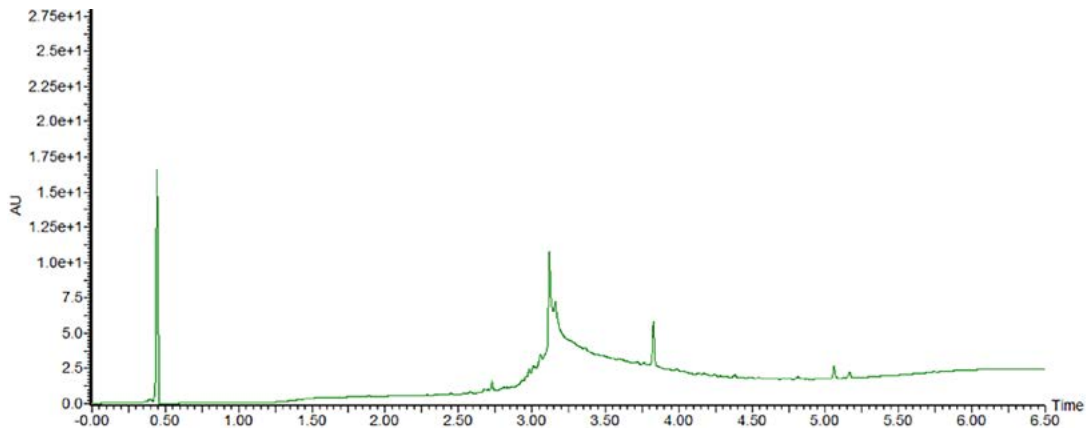
Prodigy
Column Oven

Improved Chromatography of Hydrophobic Peptides

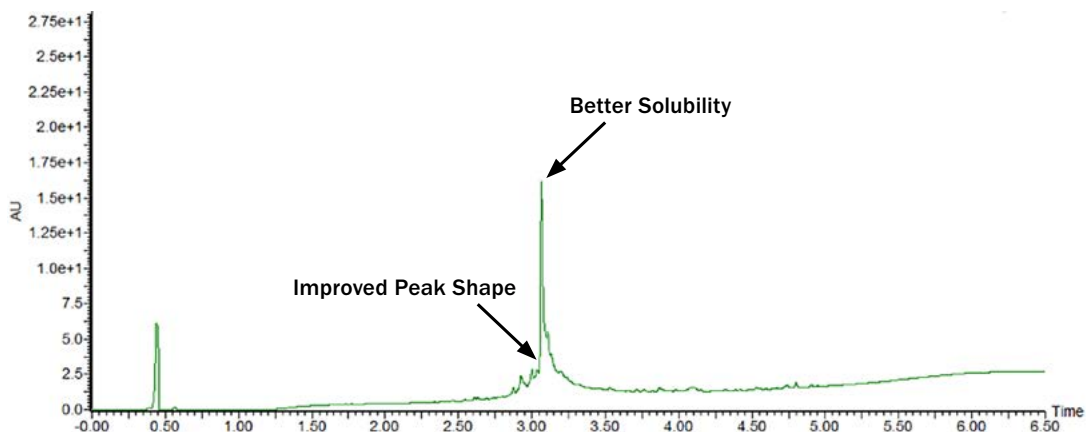
Hydrophobic peptides present unique challenges for purification, particularly in reversed phase methods. In ambient conditions, hydrophobic peptides have limited solubility and can stick to the stationary phase with detrimental effects on resolution and peak shape. The fully integrated heating system of the Prodigy increases solubility of hydrophobic peptides and improves both resolution and peak shape for the best chromatographic results.



Ambient Temperature



60 °C



Better Run-to-Run Reproducibility

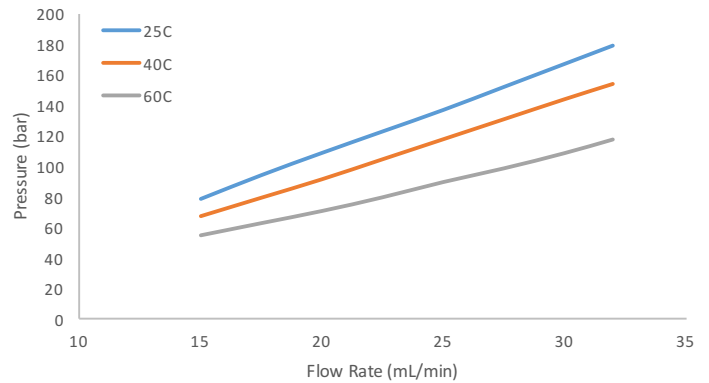
Precision temperature control of your preparative column means that it's possible to achieve the same results for every injection, no matter the laboratory environment. The column heating system of the Prodigy provides this high degree of reproducibility for the best results in SOP controlled and GLP environments.



Reduced Backpressure; Increased Performance

Backpressure is harmful to the performance any HPLC instrument, but the heating system of the Prodigy reduces backpressure by lowering mobile phase viscosity. With the Prodigy, chromatographers can achieve better resolution using longer columns and/or reduced particle size without concerns for stress on system hardware.

- Easier access to longer columns with reduced particle sizes
- Less system and column stress
- Easier access to alternative solvents with higher viscosity



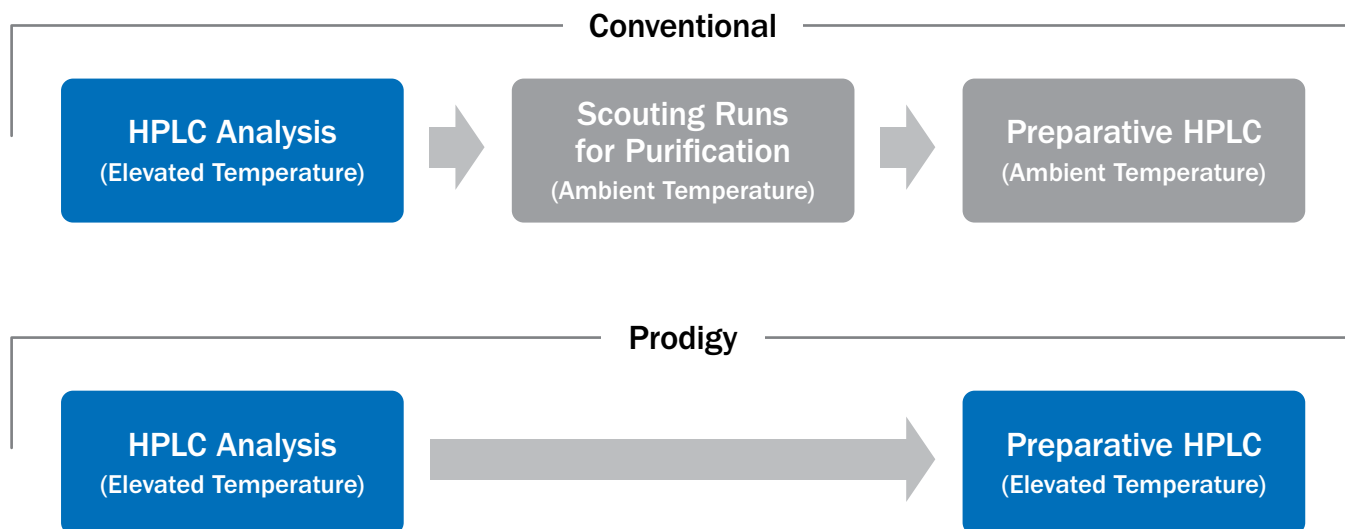
Conditions:

Column: 21.2 x 250 mm Intrepid C18 (5 μ m)
Heating: Column oven and mobile phase heater
Eluents: 20% ACN in H₂O



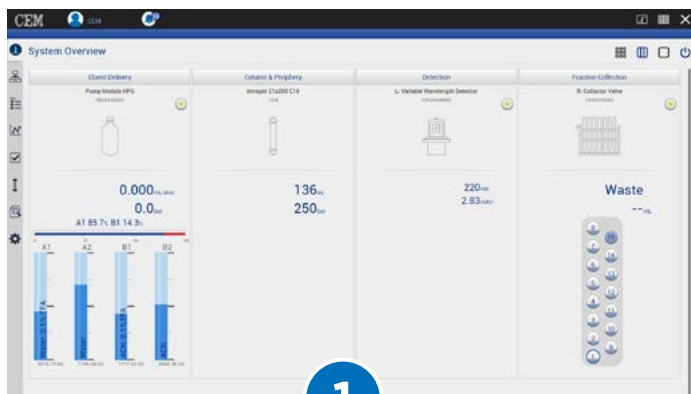
Optimize Your Workflow

Make yours the most efficient peptide production workflow by eliminating optimization and scouting runs. CEM's proprietary focused gradient calculator simplifies the method transfer process from analytical to preparative scale, removing time intensive and wasteful optimization steps common to non-heated chromatography workflows. This industry exclusive feature is included with Prodigy Preparative HPLC software along with the easiest to use programming interface.



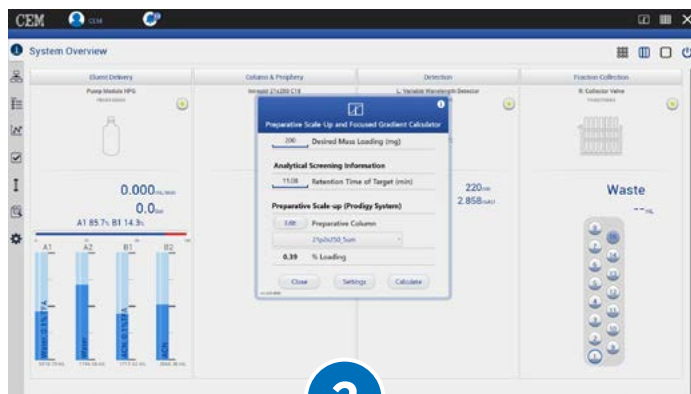
Intuitive Software

The Prodigy icon-driven software with intuitive touchscreen interface allows users to easily and seamlessly convert from heated analytical runs to prep scale using the proprietary focused gradient calculator. This powerful software makes anyone a chromatographer.



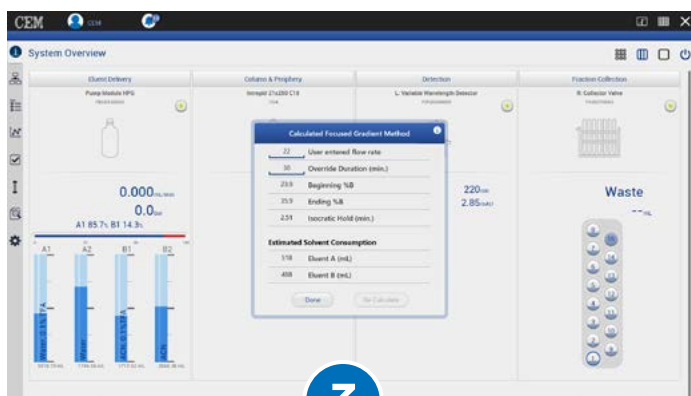
1

The System Overview Window provides a quick summary of the instrument status.



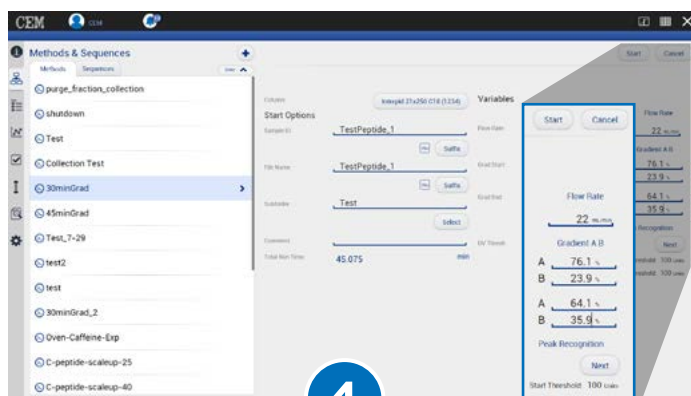
2

Enter the parameters from your analytical run into the Focused Gradient Calculator.



3

The focused gradient calculator will automatically scale up your analytical method to a preparative focused gradient method.



4

Select a method and update your parameters then touch the Start button to begin.

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Methods > Add Method QuickTest-40mLmin

Settings Eluent Delivery Detection Fraction Collection

Time	Instrument	Command/Property	Value
0:00	Pump Module HPG	Flow Rate	10 ml/min
		A	80.0 %
		B	20.0 %
		A1	<input type="checkbox"/>
		A2	<input checked="" type="checkbox"/>
		B1	<input type="checkbox"/>
		B2	<input checked="" type="checkbox"/>
			0 bar
			300 bar
			40 ml/min
		A	80.0 %
		B	20.0 %
		A1	<input type="checkbox"/>
		A2	<input checked="" type="checkbox"/>
		B1	<input type="checkbox"/>
		B2	<input checked="" type="checkbox"/>

CEM Intrepid Columns

CEM offers high quality Intrepid brand columns for analytical and preparatory scale HPLC. Intrepid columns are manufactured under tight controls to provide narrow particle size distributions and minimal backpressure. Ensure the best results with the Intrepid's 5 μm particle size options for preparative HPLC columns. Find the right tools for your chromatography.



High Flow Configuration

For those with larger throughput needs, the Prodigy has a high flow configuration available. This system allows up to 50 mm ID columns and flow rates up to 250 mL/min which can allow injections of up to 1.5 g of crude material.



CEM

Prodigy
Collector



Peptide Synthesis and Cleavage

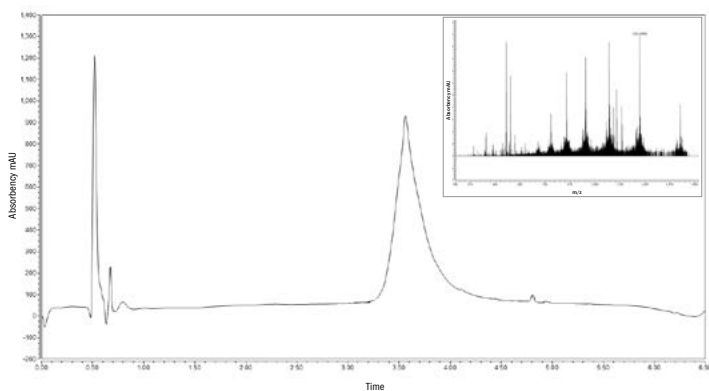
In addition to the Prodigy as a purification tool, CEM also provides industry leading solutions for peptide synthesis. CEM pioneered heated peptide synthesis to provide best in class purity, speed, and efficiency. Workflow solutions are available from exploratory scale through to GMP large scale peptide production. CEM also offers technology to make cleavage fast and easy. These capabilities are supported by a core of peptide chemists who are highly experienced in the synthesis and purification of peptides.



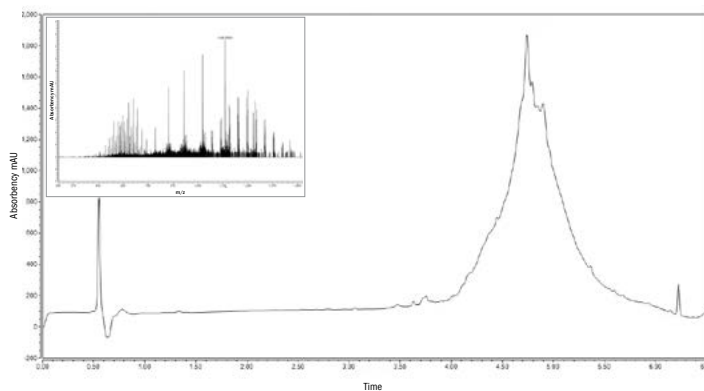
Peptide Purification

Long peptides and proteins face unique challenges for purification. These larger biomolecules produce challenges with conformational differences, solubility issues, and difficulty separating the desired product from impurities with very small deviations. The integrated heater on the Prodigy provides a powerful tool to improve solubility and further optimize a purification. This becomes even more important when considering the difficulties of purifying biomolecules of increasing size.

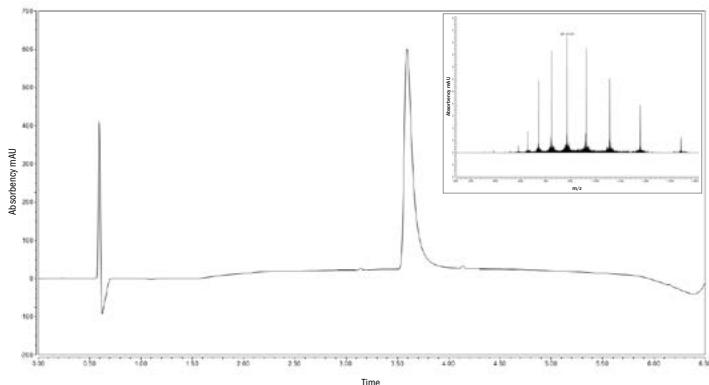
Ubiquitin Crude (76 mer Peptide)



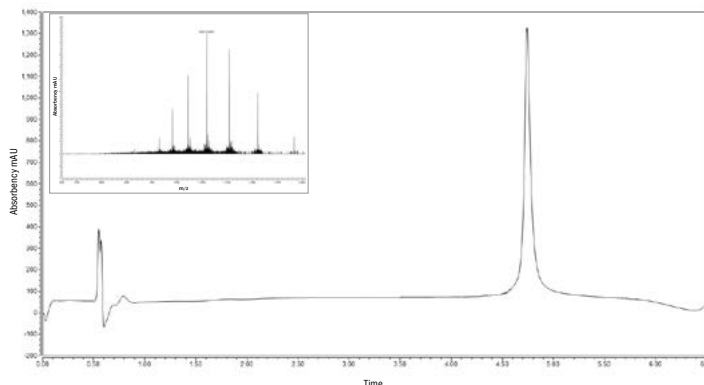
Barstar Crude (89mer Peptide)



Ubiquitin Purified (76 mer Peptide)
Prodigy Fraction



Barstar Purified (89mer Peptide)
Prodigy Fraction



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We Simplify Science

cem.com



Over 100,000
systems sold
worldwide



CEM Corporation
ISO 9001:2015
certified since 1994



All systems serviced &
supported by experts
with an average of 15
years of experience



CEM invests 12% of
annual revenue into
R&D, the result...
11 R&D 100 awards



IQ/OQ/PQ
Validation by
certified CEM
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