

UHPLC-like performance - Rapid and Robust at Low Pressure

Chromolith[®] HighResolution RP-18 endcapped 2 mm I.D. HPLC Columns

It goes without question that the development of faster separation processes is one of the most important issues in HPLC. Particularly in industry, chromatographers wish to speed up separations, and analyze more samples with the limited financial and human resources available.

Ultra-high performance and extremely low operating pressure make Chromolith[®] 2 mm I.D. columns truly unique. Excellent, ultra-fast results are obtained, not only in UHPLC and UPLC[®] instruments, but equally well in all standard HPLC systems with low dead volume.

Matrix-rich samples often require extensive sample preparation when analyzed with fast HPLC and UHPLC. This requirement is a substantial time and cost factor. Chromolith[®] columns enable a simplified sample preparation experience in the analytical workflow, which is a substantial time and cost saving factor and improves the overall lab productivity.

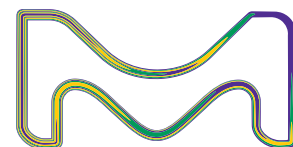
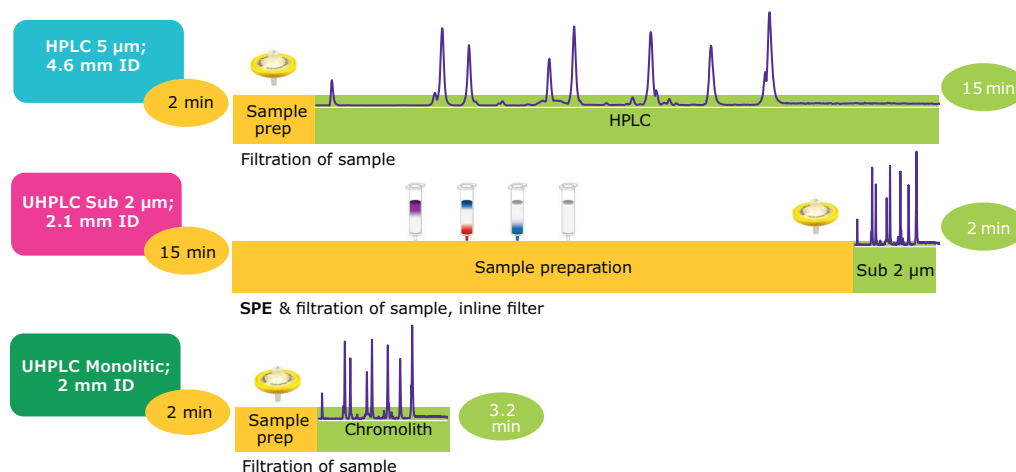
Chromolith[®] HighResolution RP-18e columns enable the separation of all typical "RP" compounds (same selectivity) at UHPLC-like performance with very low column back-pressure and allows significant time and cost savings due to the possibility of simplified workflows.

Key benefits of Chromolith[®] HighResolution RP-18e columns include:

- Rapid separations at very low column back-pressure
- High matrix tolerance, allowing time and cost savings with simplified workflows
- Cost-savings due to extended column lifetimes
- Connection of columns, flow gradients and the use of mobile phases with higher viscosity
- UHPLC instruments are fully compatible with Chromolith[®] 2 mm I.D. columns

A typical scenario is the transfer of HPLC methods to UHPLC in order to increase lab efficiency. UHPLC allows for rapid separations. A decrease from 15 minutes separation time down to 2 minutes using short, UHPLC columns with small particles is a typical case. For the UHPLC analysis of matrix-rich samples, the consequence is an increased need for sample clean-up.

HPLC columns based on monolithic silica are an excellent alternative for cost efficient separations of matrix-rich samples.



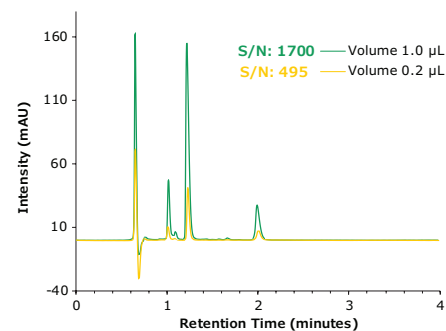
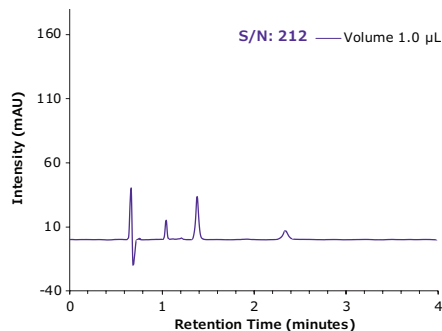
Increase Sensitivity and Save Solvents with 2 mm I.D. Chromolith® HR Columns

The use of smaller inner diameter (I.D.) columns results in decreased solvent usage and increased sensitivity. The peak response is increased with small I.D. columns – the peak height increases as the column inner diameter decreases. The peak response for 2 mm I.D. columns is almost three times higher in comparison

to 4.6 mm I.D. columns. This trait is beneficial when analyzing mass limited samples, typically used in LC-MS applications. The direct comparison of the same separation on Chromolith® HR 4.6 and a 2 mm I.D. column demonstrates a significant improvement of the signal to noise ratio (S/N).

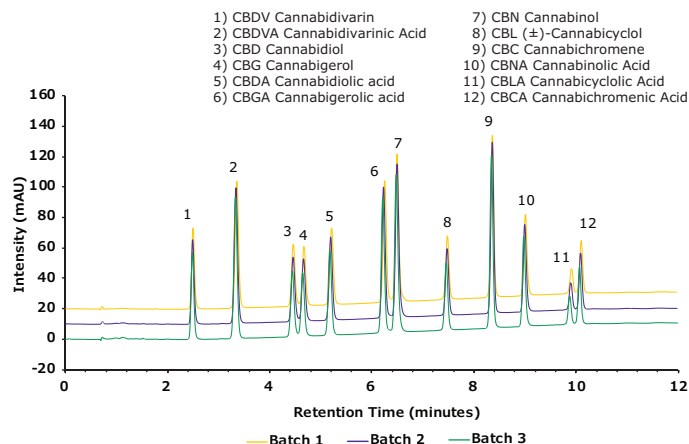
Chromatographic conditions:

Column	Chromolith® HighResolution RP-18e 100-4.6 mm Chromolith® HighResolution RP-18e 100-2 mm
Mobile Phase	A: Acetonitrile B: 20 mM Sodium dihydrogen phosphate, pH 4.5 C: Methanol
Isocratic	A/B/C 65/25/10 (v/v/v)
Flow rate 4.6 mm	2.0 mL/min
Flow rate 2 mm	0.380 mL/min
Pressure 4.6 mm	58 bar
Pressure 2 mm	66 bar
Detection	Vanquish DAD 20 Hz, UV, 210 nm
Detection cell	LightPipe 10 mm
Temperature	23 °C
Injection volume 4.6	1.0 µL
Injection volume 2	0.2 µL (1.0 µL)
Sample	Latanoprost 50 µg/mL Pfizer (without sample preparation)



Excellent Lot-to-Lot Reproducibility

Long-term reproducibility is a key factor for the quality of an HPLC column. The batch-to-batch reproducibility of Chromolith® HPLC columns is strictly controlled and fulfills the requirements of QA and QC laboratories. Chromolith® HighResolution RP-18e columns exhibit excellent batch-to-batch reproducibility, as demonstrated below with the separation of cannabinoids under the same chromatographic conditions with different batches.



Ordering Information

Part Number	Description	Length (mm)	I.D. (mm)
1.52320.0001	Chromolith® Highresolution RP-18 endcapped	25	2.0
1.52321.0001	Chromolith® Highresolution RP-18 endcapped	50	2.0
1.52322.0001	Chromolith® Highresolution RP-18 endcapped	100	2.0
1.52325.0001	Chromolith® Highresolution RP-18 Endcapped guard column [3 units]	5	2.0

To place an order or receive technical assistance

Order/Customer Service: [SigmaAldrich.com/order](https://sigmaaldrich.com/order)
 Technical Service: [SigmaAldrich.com/techservice](https://sigmaaldrich.com/techservice)
 Safety-related Information: [SigmaAldrich.com/safetycenter](https://sigmaaldrich.com/safetycenter)

Merck KGaA
 Frankfurter Strasse 250
 64293 Darmstadt, Germany

[SigmaAldrich.com](https://sigmaaldrich.com)

