

Scale Up to the Fast Lane

Agilent InfinityLab preparative LC columns



Take Your Throughput to New Levels



Fast, confident answers to everyday research questions are essential to modern drug discovery. In purification labs, these answers often come at the expense of speed. But, what if you could maximize resolution while improving sample throughput?

Packed with 4 μm superficially porous particles (SPP), Agilent InfinityLab Poroshell 120 preparative LC columns provide the high-resolution separations you need to purify your complex samples. They increase your throughput by maintaining this performance at higher flow rates, saving you time from method development to purification. So, you can successfully complete your purification goals faster, and increase lab productivity.

Ready, set, go

Now with InfinityLab Poroshell 120 preparative LC columns, you can seamlessly switch to the fast lane.



Speed and efficiency

Achieve higher performance at higher flow rates for labs where resolution and speed are most critical.



Scalability

Seamless scale up from sub-2 μm analytical scale to preparative scale.



Robustness and reliability

Save on cost-per-sample with long column lifetimes for robust and predictable performance.



Excellent loadability

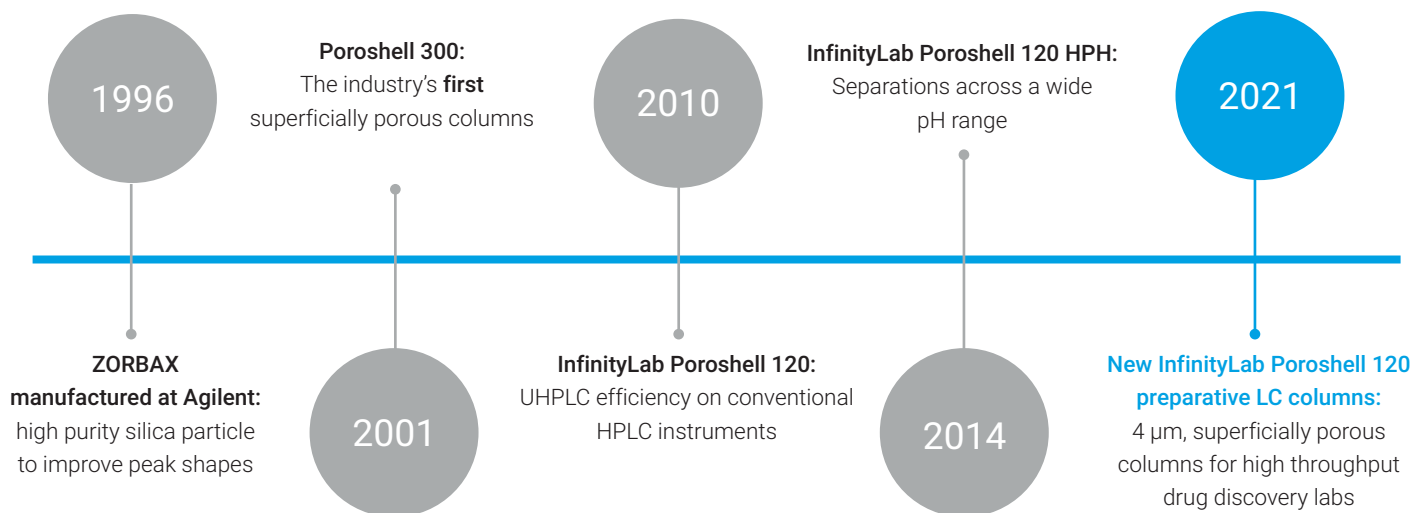
Realize the benefits of SPP columns without a trade off on loadability for drug discovery.





A long history of solving separation challenges

InfinityLab Poroshell 120 columns have become critical tools for solving the latest separation challenges in the analytical world. Now the portfolio offers scalability and exceptional efficiency for HPLC, UHPLC, and preparative LC applications.



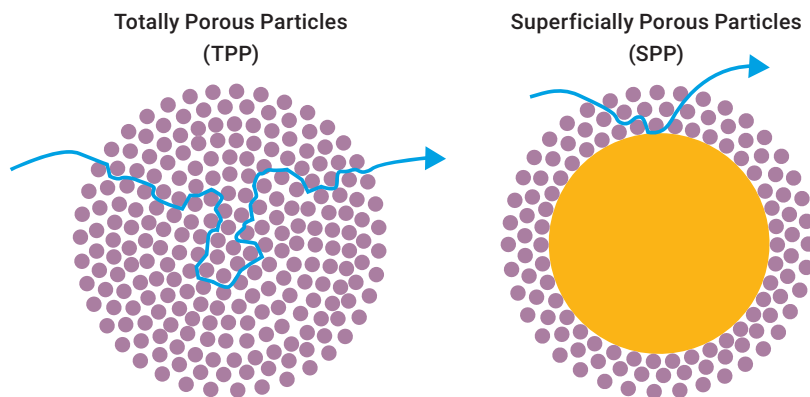
For more information about the new Agilent InfinityLab Poroshell 120 preparative LC columns go to www.agilent.com/chem/prepcolumns

Drive throughput with higher flow rates

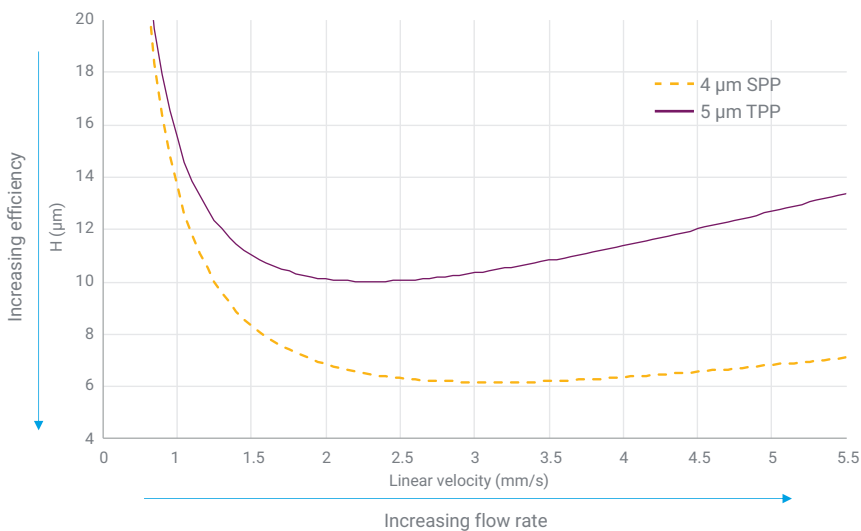
InfinityLab Poroshell 120 columns are based on superficially porous particle technology, which features a solid silica core and a porous outer layer. Compared to traditional totally porous particles of the same (or similar) size, Poroshell particles deliver higher chromatographic efficiencies and enable fast, high-resolution separations.

What makes superficially porous particles exceptional?

- Narrow particle size distribution allows for more uniform column bed packing.
- Short analyte diffusion path in/out of the porous layer reduces dispersion and increases resolution, especially at high flow rates.



Performance comparison between Poroshell 120 4 μm and traditional totally porous 5 μm columns



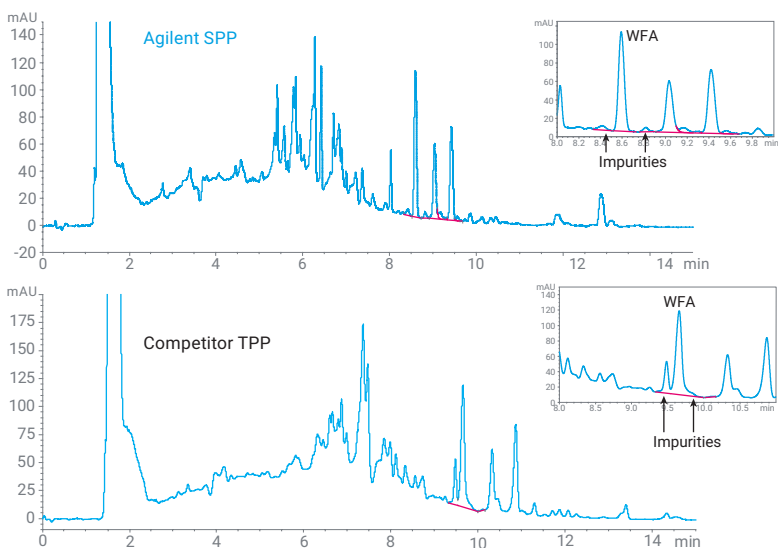
Conditions
Instrument: Agilent 1260 Infinity II LC system
Column 1: Agilent InfinityLab Poroshell 120 SB-C18 4.6 x 50 mm, 4 μm
Column 2: ZORBAX SB-C18 4.6 x 50 mm, 5 μm
Sample: Naphthalene
Wavelength: 254 nm
Injection volume: 5 μL
Mobile phase: 60:40 acetonitrile/water

This van Deemter curve illustrates the relationship between column efficiency and flow rate. By switching from totally porous to superficially porous particle columns, you can run at higher flow rates without significantly impacting efficiency and resolution. The result: shorter run times.

Higher efficiency from analytical to preparative

InfinityLab Poroshell 120 preparative LC columns offer high-resolution separations, even at high flow rates. By switching from traditional preparative LC columns to InfinityLab Poroshell 120, you can run at higher flow rates without significantly impacting efficiency and resolution, shortening run times and increasing sample throughput.

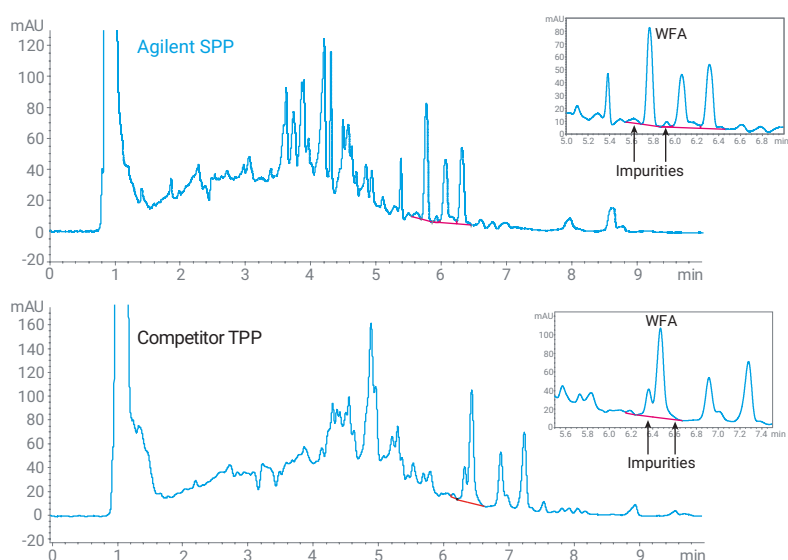
Separation of Withaferin A (WFA) from Ashwagandha extract at optimum column flow rate



Conditions	
Instrument:	Agilent 1290 Infinity II autoscale preparative LC system
Sample:	Ashwagandha extract in 2:1 ethanol:water, 100 mg/mL
Mobile phase:	A: Water + 0.1% formic acid B: Acetonitrile + 0.1% formic acid
Injection volume:	1 mL filtered extract
Column 1:	InfinityLab Poroshell 120 SB-C18 21.2 x 150 mm, 4 μ m
Column 2:	Competitor C18 19 x 150 mm, 5 μ m
Agilent run conditions	
Flow rate:	37.5 mL/min
Gradient:	5 to 95% B in 10 min
Competitor run conditions	
Flow rate:	17 mL/min
Gradient:	5 to 95% B in 18 min

Comparison of an Agilent InfinityLab Poroshell 120 SB-C18 4 μ m preparative LC column with a competitive traditional preparative LC column. Both columns were run at their respective optimum flow rates. The Agilent InfinityLab Poroshell 120 column provides superior resolution and baseline separation with the adjacent impurities.

Separation of Withaferin A (WFA) from Ashwagandha extract at 1.5 times the optimum column flow rate



Conditions	
Instrument:	Agilent 1290 Infinity II autoscale preparative LC system
Agilent adjusted conditions	
Flow rate:	37.5 mL/min
Gradient:	5 to 95% B in 10 min
Competitor adjusted conditions	
Flow rate:	25.5 mL/min
Gradient:	5 to 95% B in 12 min



Achieve 45% time savings and higher resolution separations compared to the competitor's traditional C18 preparative column run at optimum flow.

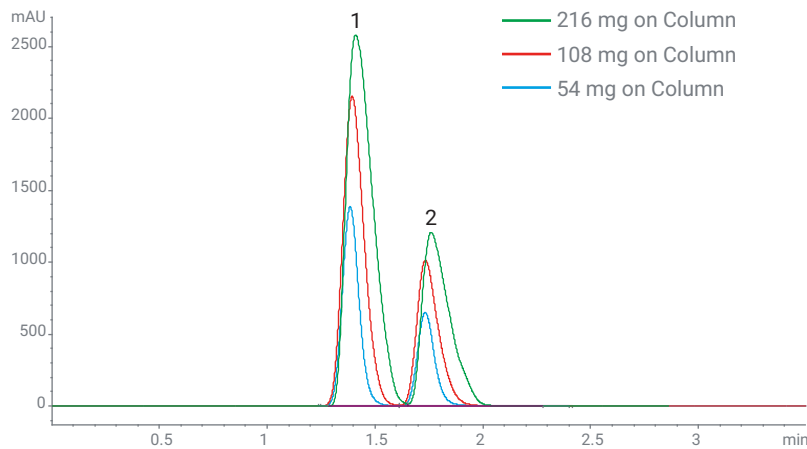
The Agilent InfinityLab Poroshell 120 SB-C18 4 μ m column maintained a high resolution even when pushed to a flow rate of 1.5 times higher than optimal. The competitive column suffered from peak co-elution when the flow rate increased. Agilent InfinityLab Poroshell 120 preparative LC columns offer higher performance at higher flow rates.

Learn more at www.agilent.com/chem/lc-prep-5994-3518

Achieve excellent loadability

InfinityLab Poroshell 120 preparative column efficiencies drive higher resolution and sharper peaks than traditional preparative columns. You can maximize the benefits of superficially porous technology without a trade-off on loadability.

Loading on InfinityLab Poroshell 120 SB-C18



Conditions

Instrument: Agilent 1290 Infinity II autoscale preparative LC system

Sample: 1. Sulfanilamide
2. Sulfamethoxazole

- Concentration 1: 30 mg/mL A + 30 mg/mL B
- Concentration 2: 60 mg/mL A + 60 mg/mL B
- Concentration 3: 120 mg/mL A + 120 mg/mL B

Injection volume: 900 μ L

Wavelength: 238 nm

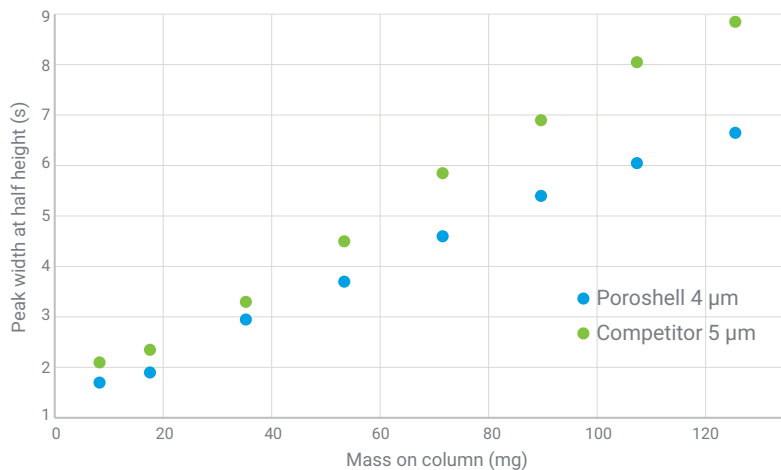
Column: Agilent InfinityLab Poroshell 120 SB-C18, 21.2 x 150 mm, 4 μ m

Flow rate: 25 mL/min

Mobile phase: 55:45 acetonitrile + 0.1% formic acid/water + 0.1% formic acid

Agilent InfinityLab Poroshell 120 preparative LC columns offer excellent loading to meet your high throughput purification needs.

Mass loading at higher flow rates



Conditions

Instrument: Agilent 1290 Infinity II preparative LC system

Sample: Sulfanilamide

Column 1: Agilent InfinityLab Poroshell 120 SB-C18 21.2 x 150 mm, 4 μ m

Column 2: Competitor C18, 19 x 150 mm, 5 μ m

Mobile phase: Column 1: 50:50 A:B
Column 2: 53:47 A:B
A: Acetonitrile + 0.1% formic acid
B: Water + 0.1% formic acid

Flow rate: Column 1: 37.5 mL/min
Column 2: 30 mL/min

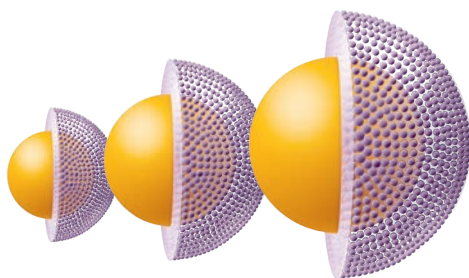
Injection volume: 900 μ L

Comparison of an Agilent InfinityLab Poroshell 120 SB-C18 4 μ m preparative LC column with a competitive traditional preparative LC column. Chromatographic conditions for the traditional column were adjusted to match the linear velocity and sample retention on the InfinityLab Poroshell 120 column. As mass load increases, the peak on the competitive column broadens faster than on the InfinityLab Poroshell 120. This allows for a nearly 50% increase in sample load on the InfinityLab Poroshell 120 column before it reaches the same peak width as the traditional preparative column, offering you sharper peaks at higher mass loads.

Seamless scalability from HPLC to UHPLC to preparative

The addition of InfinityLab Poroshell 120 4 μm preparative LC columns to the family enables scale up from sub-2 μm analytical to prep.

A scalable family of particles for faster method transfer



1.9 μm

Maximum UHPLC performance

2.7 μm

UHPLC performance at lower pressures

4 μm

Improved HPLC performance

Analytical conditions

Instrument: Agilent 1260 Infinity II LC system

Analytical columns: Agilent InfinityLab Poroshell 120 SB-C18 3.0 x 50 mm, 1.9 μm , 2.7 μm , 4 μm

Flow rate: 0.5 mL/min

Injection volume: 5 μL

Preparative conditions

Instrument: Agilent 1290 Infinity II preparative LC system

Preparative column: Agilent InfinityLab Poroshell 120 SB-C18, 21.2 x 50 mm, 4 μm

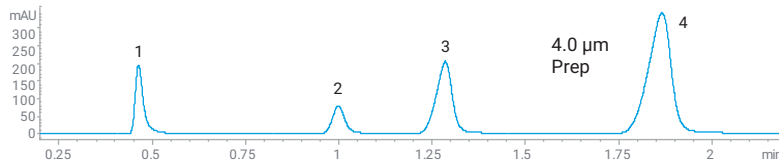
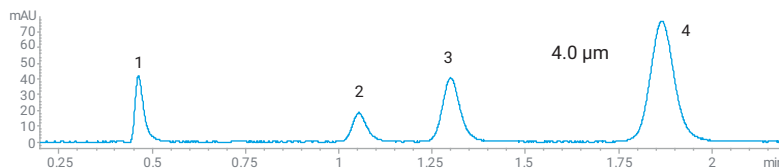
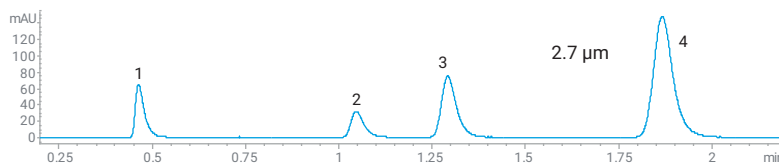
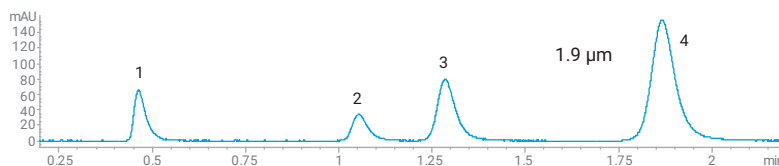
Flow rate: 25 mL/min

Injection volume: 250 μL

Samples

1. Uracil
2. Sulfathiazole
3. Sulfamerazine
4. Sulfamethazine

Separation of sulfa drugs from analytical to preparative scale



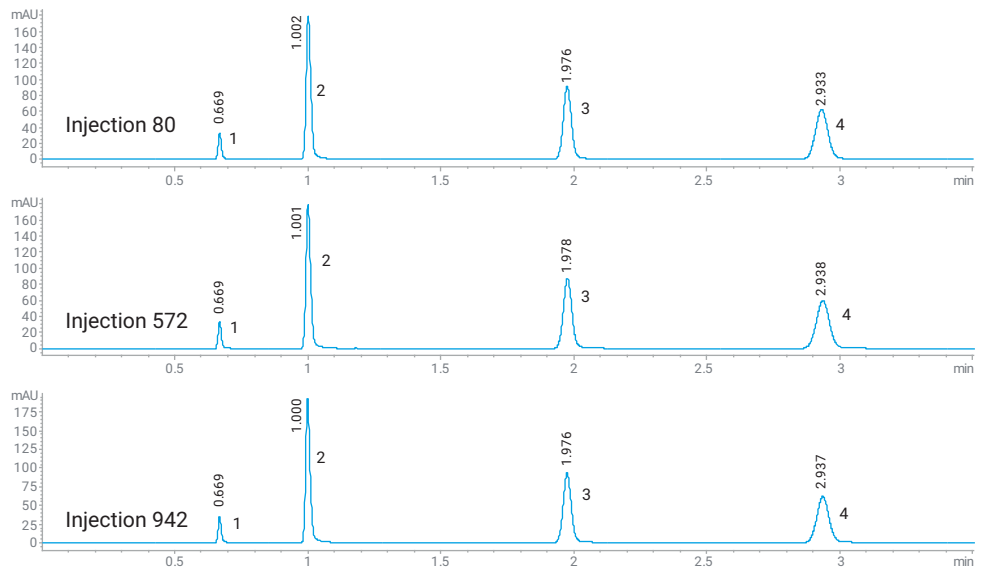
Robust and reliable

Long column lifetimes reduce costs and minimize rework. You can count on InfinityLab Poroshell 120 particles to be robust under the most demanding operating conditions.

InfinityLab preparative LC columns offer excellent bed stability and lifetime using our innovative proprietary packing process for robust, predictable performance.



Agilent InfinityLab Poroshell 120 SB-C18, 21.2 x 150 mm, 4 µm



Agilent InfinityLab Poroshell 120 preparative LC columns deliver robust and reproducible performance even after 1000 injections.

Conditions

Column 1: Agilent InfinityLab Poroshell 120 SB-C18 21.2 x 150 mm, 4 µm

Flow rate: 40 mL/min

Mobile phase: 60:40 Acetonitrile:water

Samples

1. Uracil, 4 mg/mL
2. Phenol, 40 mg/mL
3. 4-chloronitrobenzene, 5 mg/mL
4. Naphthalene, 8 mg/mL

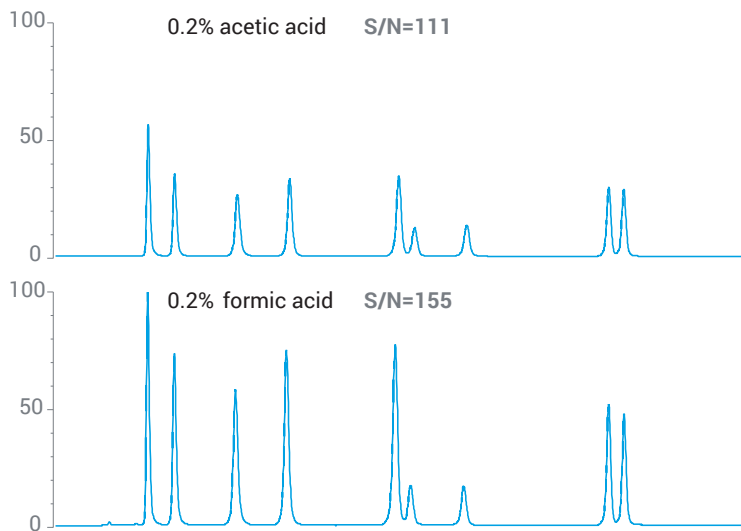


Two chemistries cover your screening needs for high and low pH

Best for low-pH mobile phases: InfinityLab Poroshell 120 SB-C18

SB-C18 is made using bulky silanes that sterically protect the siloxane bond. Acid labile endcapping reagents are not used. The result is vastly improved column life and excellent chemical and temperature stability at pH 1–6.

Agilent InfinityLab Poroshell 120 SB-C18 2.1 x 100 mm, 2.7 μm



Agilent InfinityLab Poroshell 120 SB chemistry provides exceptional peak shape and column stability at low pH. A separation of catechins in green tea demonstrates the value of screening acidic modifiers to enhance LC/MS detection sensitivity.

Conditions

Column: Agilent InfinityLab Poroshell 120 SB-C18, 2.1 x 100 mm, 2.7 μm

Mobile phase: A: Acid in H_2O
B: CH_3CN

Flow rate: 0.729 mL/min

Gradient:	Time	%B
	0.00	10
	1.43	15
	2.86	27

Temperature: 40 $^\circ\text{C}$

Source: 350 $^\circ\text{C}$, 10 L/min, 50 psi, -3500 V

Acquisition: SIM Neg (169, 305, 289, 457, 441)

Sample: 3 μL of 3 $\mu\text{g}/\text{mL}$ each of GA, GC, EGC, C, EC, EGCG, GCG, ECG, CG in $\text{H}_2\text{O}/\text{CH}_3\text{CN}$

Samples

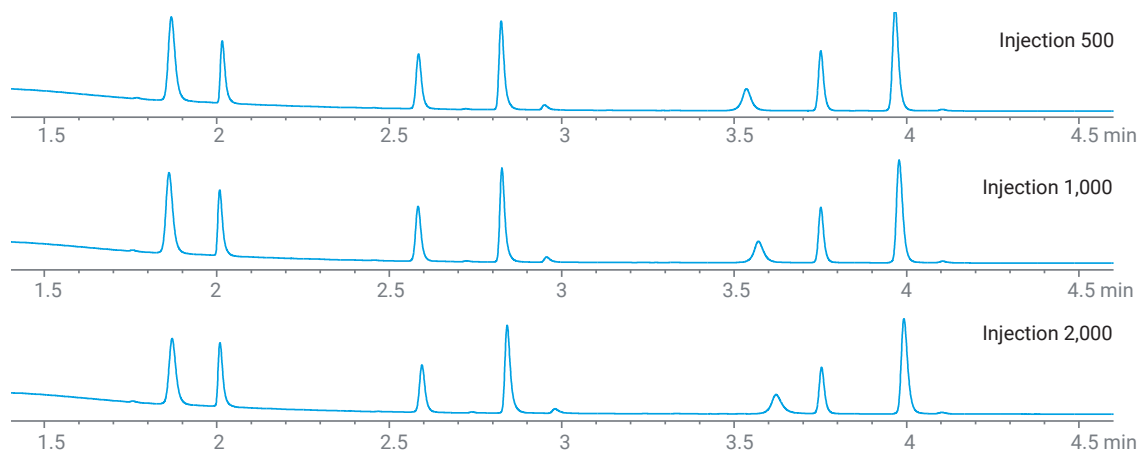
Gallic acid	Epigallocatechin gallate
Gallocatechin	Gallocatechin gallate
Epigallocatechin	Epicatechin gallate
Catechin	Catechin gallate
Epicatechin	



Best for high-pH mobile phases: InfinityLab Poroshell HPH-C18

HPH-C18 incorporates hybrid InfinityLab Poroshell particle technology to provide high-pH stability. Hybrid particle technology improves the overall particle ruggedness at extended pH, enabling long lifetimes and fewer column changes.

Agilent InfinityLab Poroshell HPH-C18, 2.1 x 50 mm, 2.7 µm



After 2,000 injections at pH 10, the Agilent InfinityLab Poroshell 120 HPH-C18 showed no change in performance.

Conditions

Instrument: Agilent 1260 Infinity II binary LC
 Mobile phase: A: 10 mM ammonium bicarbonate adjusted to pH 10.0 in water
 B: Acetonitrile
 Flow rate: 0.4 mL/min
 Gradient:

Time	%B
0	5
5	95
5.1	5

Samples

1. Methyl salicylate
2. 4 Chlorocinnamic acid
3. Acetophenone
4. Quinine
5. Nortryptiline
6. Heptanophenone
7. Amitriptyline

Agilent InfinityLab: reliable, efficient, always innovating for your best result

Designed to work together for superior performance, Agilent InfinityLab LC instruments, columns, and supplies are rugged and reliable, and improve your workflow efficiency. InfinityLab LC components help you get the most from your LC and LC/MS applications with innovations that improve uptime, minimize rework, and simplify operations.



Exceptional separation efficiency, performance, and throughput

InfinityLab preparative LC columns are available in diverse media, so you can optimize your separations. Choose from InfinityLab Poroshell 120 with high speed and efficiency, ZORBAX with complementary selectivity in multiple dimensions, and Pursuit XRs with high loading capacity.

Learn more at:

www.agilent.com/chem/prepcolumns



Purify your samples with maximum efficiency

Need to isolate and purify your samples with the highest recovery? Agilent InfinityLab LC purification instruments deliver outstanding performance for analytical to preparative scale workflows. Our comprehensive, scalable portfolio—based on a single platform—lets you tailor your chosen system to meet your laboratory's current and future goals.

Learn more at:

www.agilent.com/chem/lc-prep-hplc

Less stress, more peace of mind

Preparative chromatography calls for large volumes of solvent that need careful containment. Agilent InfinityLab Stay Safe caps and waste cans are part of the InfinityLab portfolio.

From maintaining your LC system to controlling harmful solvent fumes, InfinityLab supplies are designed to solve everyday laboratory challenges. They facilitate improved efficiency, leaving you with more time and less frustration.



InfinityLab charcoal filter (58 g)

Six-month time strip tells you when the filter needs to be replaced.

Leak hose

Connects to system leak tubing.

InfinityLab Stay Safe cap

InfinityLab fittings

Enable vapor-tight tubing connections.

InfinityLab waste can



InfinityLab venting valve

Includes six-month time strip indicating when the valve needs to be replaced.

InfinityLab fittings

Vapor-free tubing connection.

InfinityLab Stay Safe cap

Stops solvents from leaching into the air.



Ordering information

Agilent InfinityLab Poroshell 120 preparative LC columns specifications

When to Use	Phase	Pore Size	Temperature Limits	pH Range	Endcapped	Carbon Load	Surface Area	Pressure Limit
Best for low-pH mobile phases	SB-C18	120 Å	90 °C	1.0–8.0	No	9%	130 m ² /g	400 bar (6,000 psi)
Best for high-pH mobile phases	HPH-C18	100 Å	60 °C	2.0–11.0	Double	Proprietary	95 m ² /g	400 bar (6,000 psi)

Agilent InfinityLab Poroshell 120 preparative LC columns

Description	Part Number
InfinityLab Poroshell 120 SB-C18, 21.2 x 50 mm, 4 µm	670050-902
InfinityLab Poroshell 120 SB-C18, 21.2 x 150 mm, 4 µm	670150-902
InfinityLab Poroshell 120 HPH-C18, 21.2 x 50 mm, 4 µm	670050-702
InfinityLab Poroshell 120 HPH-C18, 21.2 x 150 mm, 4 µm	670150-702

Agilent InfinityLab preparative LC supplies

Description	Part Number
Semiprep filter, 0.5 µm, 12.7 mm id, 1-5 mL/min (replacement frit: 5022-2185)	5064-8273
High pressure semiprep filter, 10 µm, 19 mm id, 5–10 mL/min (replacement frit 10/pk: 5022-2166)	5022-2165
Stay Safe cap GL45 with 1 port for prep LC, 1 vent valve (5043-1190), and 1 fitting, 4.7 mm	5043-1333
Stay Safe cap GL45 with 2 ports for prep LC, 1 vent valve (5043-1190), and 2 fittings, both 4.7 mm	5043-1334
InfinityLab thread adapter, PTFE, GL45(M) to GPI 38(F), for InfinityLab Stay Safe cap	5043-1192
Stay Safe cap S60 with 4 ports for waste can, including 1 leak hose, and 4 fittings: 3.2 mm (2), 2.3 mm (1), 1.6 mm (1)	5043-1336
10-liter waste can with S60 thread	5043-1337
Kit consisting of 10-liter waste can and S60 Stay Safe cap for waste	5043-1338
Charcoal filter (not included in Stay Safe cap for waste, and should be ordered separately)	5043-1193
Delay and checkout calibrant, for Agilent purification systems	5190-8223

Need instrument supplies? Download our quick-reference guide at www.agilent.com/chem/prepsupplies



Agilent CrossLab: Supporting Your Success

CrossLab is an Agilent capability that integrates services and consumables to support workflow success, improve productivity, and enhance operational efficiency. Through CrossLab, Agilent strives to provide insight in every interaction to help you optimize the return you get on your instrument investment and achieve your business goals. Agilent CrossLab supports Agilent instruments and select non-Agilent instruments as well. We also provide consultative support for workflow enablement, lab analytics, regulatory compliance, inventory management, and asset management, including relocation services.

Learn more about CrossLab at www.agilent.com/crosslab

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