

Perform Fast, High-efficiency Chiral Separations Like Never Before

InfinityLab Poroshell 120 Chiral Columns



Cover Every Single Step of Your Chiral Workflow

Chiral enantiomers differ in their biochemical properties, and it is well recognized that racemic and enantiomeric products must be very well characterized to fully understand the properties of each enantiomer and assess the purity of the final product.

Now, you can finally achieve faster, sharper, and more efficient separations for chiral analyses across four different LC modes or by supercritical fluid chromatography (SFC). Rely on Agilent's full range of products to build a robust and reliable chiral workflow.

1



Sample preparation is the correct starting point for all of your analyses. Whether you use simple filtration, solid-supported liquid extraction (SLE), catch and release cleanup, QuEChERS, or solid-phase extraction (SPE) - Agilent offers a high-quality product for your sample preparation needs from award-winning Captiva EMR-Lipid to trusted Bond Elut SPE and QuEChERS kits.

www.agilent.com/chem/sampleprep

2



From routine analysis to cutting-edge research, the InfinityLab LC Series offers the broadest portfolio of HPLC and UHPLC solutions for any application and budget.

www.agilent.com/chem/LC

3



Use Agilent InfinityLab supplies to increase throughput and minimize instrument downtime for your HILIC applications:

- Stay Safe caps help to avoid evaporation of harmful solvents and to keep your mobile phase concentration consistent
- Quick Connect and Quick Turn fittings for easy-to-use and hassle-free connections
- Filtration assembly and inline filters to remove particles from buffered mobile phases to extend your column lifetime
- Well plates for high throughput applications
- Smart supplies such as column ID tag, deuterium lamps, and flow cells with RFID to enhance traceability and simplify documentation

www.agilent.com/chem/lc-supplies

4



The InfinityLab Poroshell 120 portfolio includes four modern Chiral chemistries that offer the highest separation efficiency, ruggedness, and reproducible chromatography for your Chiral separations.

Now you can run more samples in less time thus achieving higher throughput. You can also substitute your normal phase methods with reverse-phase or polar ionic, for a leaner and greener lab.

www.agilent.com/chem/poroshell-chiral

How do I select my Chiral Column?

A screening protocol is recommended to choose the best Chiral column to develop a robust method. View our recommended general screening protocol in the Agilent Chiral Application Compendium (publication number [5991-8450EN](#)).

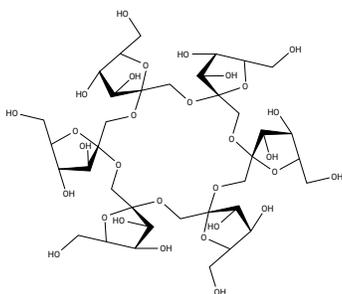
You can also view our short webinar for a more detailed view of our recommended screening process at www.agilent.com/chem/chiralscreeningwebinar

Separate nearly any Chiral compound:
Four chemistries across four different LC modes and SFC options offer a wide range of selectivities.

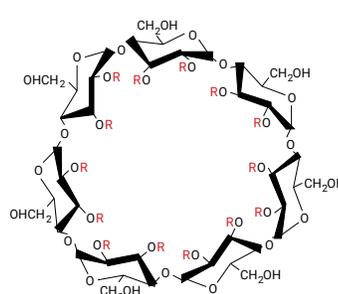
| Column Chemistry | Chiral Selector (bonded chemistry) | Typical Separation Mode | Typical Applications | Pressure Limit (bar) | pH range | Temperature Limit |
|-------------------------------------|------------------------------------|--|---|----------------------|----------|-------------------|
| InfinityLab Poroshell 120 Chiral-CF | Derivatized cyclofructan (CF6) | Polar Organic (PO) | Primary amines | 400 bar | 3-7 | 45 °C |
| | | Normal Phase (NP) | Primary amines | | | |
| InfinityLab Poroshell 120 Chiral-CD | Hydroxypropylated-B-cyclodextrin | Reversed Phase (RP) | Stimulants, fungicides, t-boc amino-acids | 400 bar | 3-7 | 45 °C |
| | | Polar Organic (PO) | Complex molecules | | | |
| | | Polar Ionic (PI) | Basic pharmaceuticals (various) | | | |
| InfinityLab Poroshell 120 Chiral-V | Vancomycin (macrolide antibiotic) | Reverse Phase (RP) | Amines, profens | 400 bar | 2.5-7 | 45 °C |
| | | Polar Organic (PO) | Complex neutral molecules | | | |
| | | Supercritical Fluid Chromatography (SFC) | | | | |
| InfinityLab Poroshell 120 Chiral-T | Teicoplanin (macrolide antibiotic) | Polar Ionic (PI) | Beta-blockers, hydroxyl acids | 400 bar | 2.5-7 | 45 °C |
| | | Reverse-Phase (RP) | Amino acids, hydroxyl acids, profens | | | |
| | | Polar Organic (PO) | Hydantoins, benzodiazepines | | | |
| | | Supercritical Fluid Chromatography (SFC) | | | | |

Agilent Poroshell 120 Chiral Bonded Phase Structures

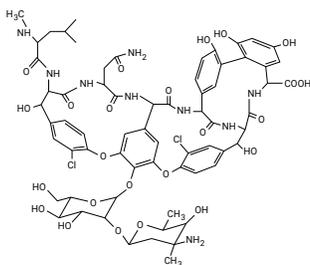
InfinityLab Poroshell 120 Chiral-CF
(Cyclofructan CF-6)



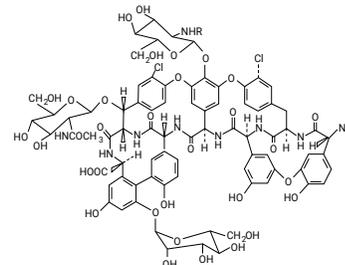
InfinityLab Poroshell 120 Chiral-CD
(Cyclofructan CF-6)



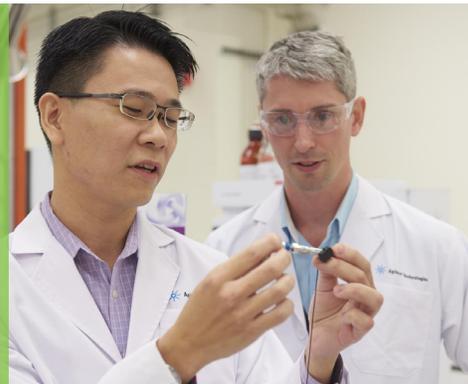
InfinityLab Poroshell 120 Chiral-V
(Vancomycin)



InfinityLab Poroshell 120 Chiral-T
(Teicoplanin)



Put InfinityLab Poroshell 120 Chiral Innovation to Work for Your Challenging Separations



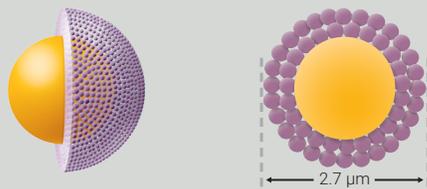
Challenge

Resolution of chiral enantiomers



Innovation

Agilent Poroshell superficially porous particle technology



Speed



Conventional chiral separation



Fast Poroshell chiral separation

Productivity



Conventional column



10x throughput with Agilent InfinityLab Poroshell 120 Chiral columns

Yes, you can shorten run times – and improve resolution – for Chiral separations

Like all InfinityLab Poroshell 120 columns, Poroshell 120 Chiral 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, Agilent Poroshell particles deliver higher chromatographic efficiencies and enable fast high-resolution separations.



Now you don't have to compromise on your Chiral separations. InfinityLab Poroshell 120 Chiral columns are the first columns to combine superficially porous particles with innovative Chiral stationary phases to deliver:

- High performance and speed, compared to totally porous Chiral stationary phases
- Ruggedness and reliability with proven Agilent InfinityLab Poroshell 120 particle technology
- Sizes to suit any application: 2.1 and 4.6 mm ID configurations in 50, 100 and 150 mm lengths
- Fast run times, superior peak shape, and high resolution
- Increased throughput and lab productivity with more efficient Chiral separations

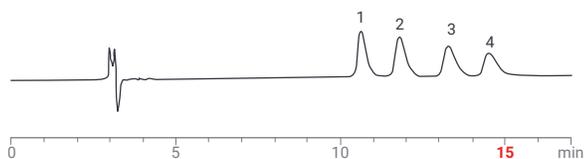


Perform Chiral separations in less than 5 minutes using your existing LC systems

Superficially porous particles provide higher efficiency and sharper peak shapes. Throughput is dramatically improved with shorter runtimes, compared to fully porous particle columns.

Traditional Chiral Separation— totally porous particle

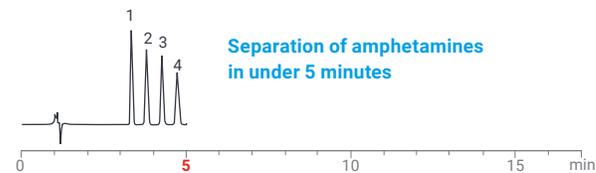
Chirobiotic V2 (250 x 4.6 mm, 5 μ m)



1. D-(+)-Amphetamine, 2. L-(-)-Amphetamine, 3. D-(+)-Methamphetamine
4. L-(-)-Methamphetamine 100/0.1/0.02 MeOH/HOAc/NH₄OH with a
1.0 mL/min flow rate at room temperature and UV at 220 nm

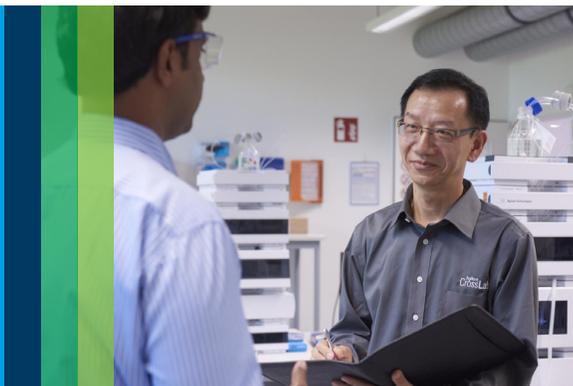
Agilent InfinityLab Poroshell 120 Chiral Separation— superficially porous particle

InfinityLab Poroshell 120 Chiral-V (100 x 4.6 mm, 2.7 μ m)

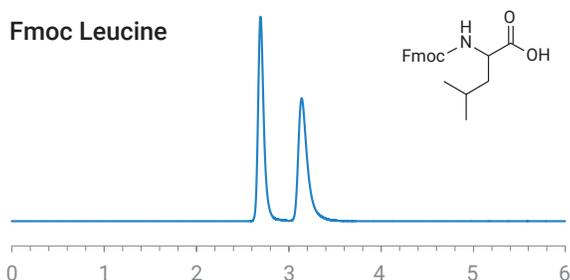


1. D-(+)-Amphetamine, 2. L-(-)-Amphetamine, 3. D-(+)-Methamphetamine
4. L-(-)-Methamphetamine 100/0.1/0.02 MeOH/HOAc/NH₄OH with a
1.0 mL/min flow rate at room temperature and UV at 220 nm

InfinityLab Poroshell 120 Chiral Columns Support a Range of Applications

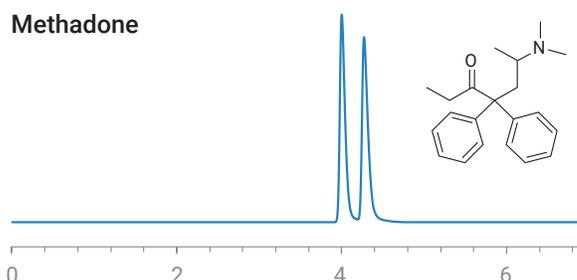


Fmoc Leucine



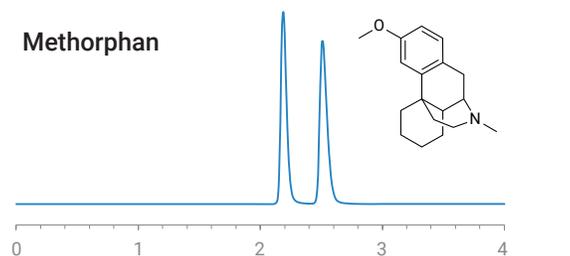
Column: InfinityLab Poroshell 120 Chiral-T (10 cm x 4.6 mm, 2.7 μm)
Mobile phase: 60/40: Methanol/15 mM Ammonium Formate (pH 3.6)
Flow Rate: 0.5 mL/min
Detection: UV 220 nm

Methadone



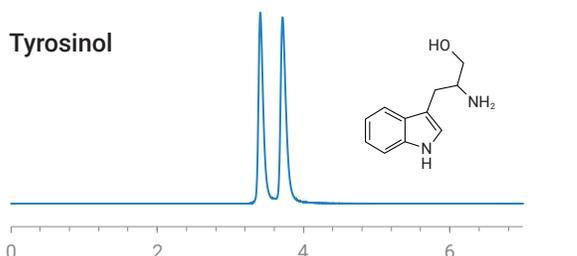
Column: InfinityLab Poroshell 120 Chiral-CD (15 cm x 4.6 mm, 2.7 μm)
Mobile phase: 20/80: Acetonitrile/50 mM Ammonium Formate (pH 3.6)
Flow Rate: 0.7 mL/min
Detection: UV 230 nm

Methorphan



Column: InfinityLab Poroshell 120 Chiral-V (10 cm x 4.6 mm, 2.7 μm)
Mobile phase: 80/20: Methanol/15 mM Ammonium Formate (pH 3.6)
Flow Rate: 1.0 mL/min
Detection: UV 220 nm

Tyrosinol



Column: InfinityLab Poroshell 120 Chiral-CF (10 cm x 4.6 mm, 2.7 μm)
Mobile phase: 60/40/0.3/0.2: Acetonitrile/Methanol/Acetic Acid/TEA
Flow Rate: 1.0 mL/min
Detection: UV 280 nm

Selected applications for InfinityLab Poroshell 120 Chiral Columns

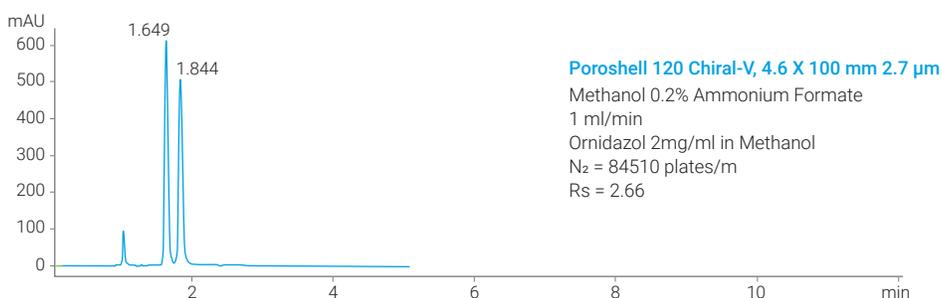
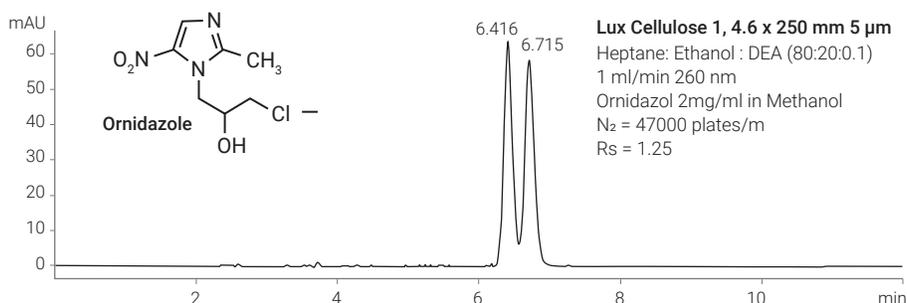
| Application Note Title | Market | Column Used | Publication Number |
|--|----------------------|---|---|
| Put InfinityLab Poroshell 120 Chiral Innovation to Work for Your Challenging Separations | Multiple | Multiple | 5991-8450EN |
| Chiral Analysis of Amino Acids with Agilent InfinityLab Poroshell 120 Chiral-T Columns | Pharma and Biopharma | InfinityLab Poroshell 120 Chiral-T | 5994-1381EN , 5994-1366EN , 5994-1377EN |
| Modernizing Chiral Separations with Glycopeptide-Based Chiral Columns | Pharma | InfinityLab Poroshell 120 Chiral-T | 5994-2143EN |
| Chiral separation of methamphetamine and amphetamine on an Agilent InfinityLab Poroshell 120 Chiral-V column with detection by LC/MS | Clinical Research | InfinityLab Poroshell 120 Chiral-V | 5991-8968EN |
| Quantitation of the Chiral Shift in Metabolism of Propranolol Using 2D-LC/MS/MS | Pharma and Biopharma | InfinityLab Poroshell 120 Chiral-T | 5994-1772EN |
| Chiral Screening for SFC and UHPLC with the Agilent 1260 Infinity II SFC/UHPLC Hybrid System | Pharma | InfinityLab Poroshell 120 Chiral CF, CD, V, T | 5994-0171EN |

More application notes can be found with [Agilent LC Application finder](#).

Switch Normal Phase Methods to Reverse Phase for Speed and Solvent Savings

By migrating normal phase methods to reverse phase you not only achieve an increase in speed and resolution, but you are able to use methanol as the main solvent over heptane and ethanol. With these combined changes you can achieve:

- 3.5 times faster run time
- 69% less solvent usage
- Flexibility to use any LC system and MS compatible with methanol as the main solvent
- Higher sensitivity with peaks 10 times taller



Note: This method adjustment involves a change of column chemistry and solvent, it does require validation. Fortunately, since this method is a quantitative assessment of a minor competent it requires only a few test elements. These are accuracy, precision linearity, specificity, and limit of quantitation. (ORA Validation and Verification Guidelines for Human Drug Analytical Methods. 8_29_2014).



Learn more and shop the Agilent InfinityLab Poroshell 120 portfolio at www.agilent.com/chem/poroshell-chiral



For information on part numbers and ordering refer to the InfinityLab Poroshell 120 Ordering Guide [5991-9123EN](#)

Reliable efficient, always innovating for your best result

You can rely on Agilent InfinityLab LC instruments, columns, and supplies to deliver rugged quality and robust analytical results. But our promise to you does not stop there. Every component of the Agilent InfinityLab LC family is uniquely designed to work together, and to help you continuously improve your workflow, for efficiency gains that help you get more done and reduce operational costs.

Learn more:

www.agilent.com/chem/poroshell-chiral

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