Agilent

Trusted Answers

Innovations from Agilent

Improve your separations

Maximize productivity and solve analytical challenges with our columns and supplies

Agilent has a comprehensive portfolio of consumables for all applications. Our latest innovations not only improve throughput and efficiency, but also provide economic and time saving value. We offer an optimized portfolio of columns and supplies to help your laboratory solve the latest challenges.

Our recent innovations include:

LC Columns & Supplies

- AdvanceBio Amino Acid Analysis columns
- Agilent AdvanceBio Peptide Plus columns
- Agilent AdvanceBio MS Spent Media columns
- Agilent InfinityLab Poroshell 120 HILIC columns
- Agilent InfinityLab Poroshell 120 Chiral columns

GC Columns & Supplies

- Agilent J&W DB-FATWAX Ultra Inert columns
- Agilent J&W DB-HeavyWAX columns
- Agilent ADM Flowmeter
- Agilent IDP-3 Dry Scroll Pump

Spectroscopy Standards and Supplies

- Agilent OneNeb Series 2 Nebulizer
- Agilent ICH/USP <232> Impurities Kit
- Agilent LED Measuring Magnifier

Vials & Sample Prep

- Agilent Captiva EMR-Lipid
- Agilent A-Line Vials

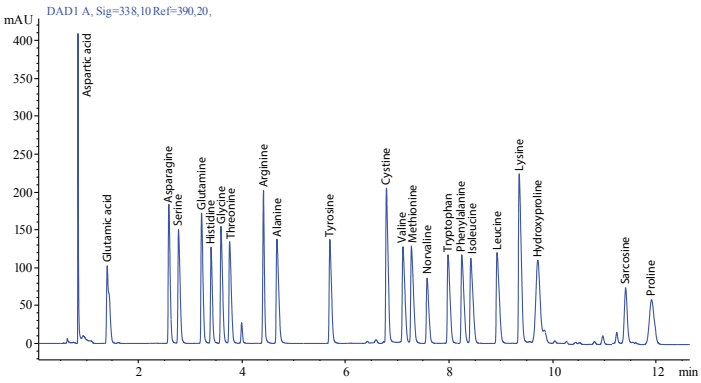
Services

- Agilent University Running Start

A tradition of innovation and efficiency

Agilent AdvanceBio Amino Acid Analysis columns

Biopharmaceutical laboratories need to identify multiple critical quality attributes. Identifying and quantifying amino acids in biological samples (such as cell culture fluid or protein hydrolysates) poses particular challenges because these analyses involve high temperatures and high pH levels. High resolution separations are delivered by efficient Poroshell particle morphology, and batch tested with amino acid standards to ensure quality and performance.



Separation of AA standards using Agilent AdvanceBio AAA column using the amino acid method.

- Long column lifetimes from robust, high pH resistant, chemically modified silica.
- Compatible with both HPLC and UHPLC systems via 2.7 µm diameter particles.
- Double endcapped for excellent amino acids selectivity.
- Up to 90% efficiency of sub-2 µm totally porous particles, with 40 to 50% less backpressure.
- A 2 µm frit makes them as resistant to clogging as 3.5 and 5 µm columns.

Agilent AdvanceBio Peptide Plus columns

In the biopharmaceutical industry, peptide mapping is routinely used for challenging protein identity tests. Based on our innovative superficially porous Poroshell technology, AdvanceBio Peptide Plus columns feature a hybrid endcapped C18 on a 120 Å pore size. The 2.7 µm particle is specially modified to have a charged surface.

Combined with Agilent LC/MS instruments, AdvanceBio Peptide Plus columns offer:

- The sensitivity to identify multiple critical quality attributes with no deterioration in performance at higher mass loads.
- Sharp, symmetrical peaks with formic acid containing mobile phases common in LC/MS methods.
- The flexibility of mobile phase composition and column geometries to enable use of one column across multiple platforms.

Be Agilent sure of your biologic's Critical Quality Attributes, visit: **www.agilent.com/chem/advancebio**

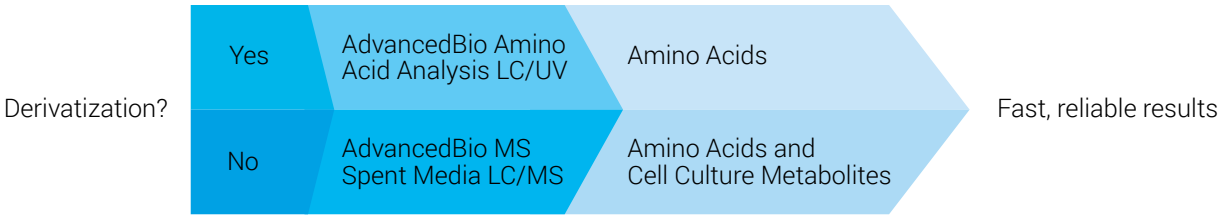
Agilent AdvanceBio MS Spent Media columns

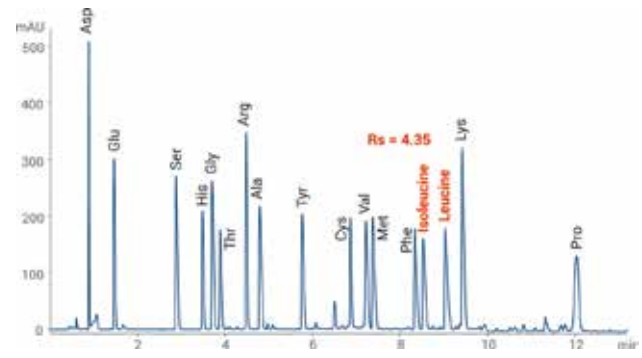
Obtain reliable LC/MS analysis of amino acids in bioreactor cell culture media. Now you can analyze amino acids and other cell culture metabolites with a single method: HILIC LC separation with MS detection. Agilent AdvanceBio MS Spent Media columns are ideal for normal phase separation of amino acids and small, polar metabolites in cell culture media. They feature a zwitterionic phase bonded onto superficially porous silica particles, enabling fast, efficient, and reproducible separations of small, charged molecules.

- Simplicity: Eliminate sample derivatization—and the need for baseline resolution with MS detection.
- Performance: PEEK-lined stainless steel columns ensure excellent peak shape and recovery of challenging ionic metabolites.
- Sensitivity: Engineered with MS-friendly mobile phases.
- Flexibility: Compatible with HPLC and UHPLC systems.

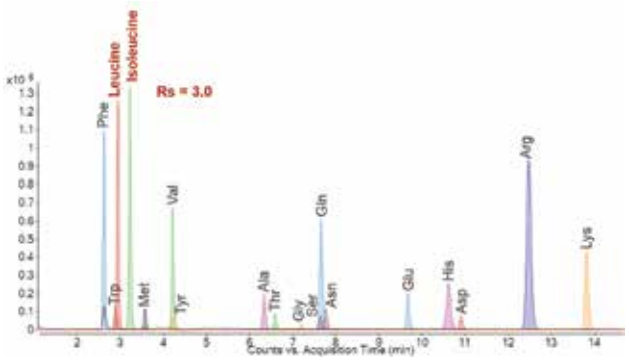
Learn more about retaining and separating polar analytes: **www.agilent.com/chem/advancebio**

Agilent Solutions for Spent Media Analysis





Amino Acid



Amino acids and cell culture metabolites

Agilent InfinityLab Poroshell 120 HILIC columns

InfinityLab Poroshell 120 HILIC-Z and HILIC-OH5 phases allow you to retain and separate polar analytes using a standard LC system and reversed-phase solvents. These columns provide innovative chemistries for superior retention of highly charged polar analytes with robust and reliable Poroshell particle technology.

Learn more about retaining and separating polar analytes: **www.agilent.com/chem/poroshell-120**

InfinityLab Poroshell 120 HILIC-Z columns

This column innovation features a novel zwitterionic stationary phase bonded to Poroshell 120 particles.

- High peak capacity and wide polarity range.
- A PEEK-lined column option for excellent peak shape and recovery of challenging compounds.
- High pH and temperature stability: Up to pH 12 and 80 °C.
- Tolerates samples with high salt or buffer content.
- Compatible with MS-friendly buffers (<10 mM salt content), low MS bleed.

InfinityLab Poroshell 120 HILIC-OH5 columns

Separate polar compounds with alternate selectivity.

- Novel polyhydroxy fructan phase bonded to Poroshell 120 particles.
- Fast, high efficiency separations with excellent retention of polar compounds.
- Offer alternate selectivity to HILIC and HILIC-Z phases.

Agilent InfinityLab Poroshell 120 Chiral columns

InfinityLab Poroshell 120 Chiral columns are the first columns to combine superficially porous particles with innovative chiral stationary phases. This innovation delivers higher performance and speed, compared to totally porous chiral stationary phases. These columns provide:

- Ruggedness and reliability with proven Agilent InfinityLab Poroshell 120 particle technology.
- A wide range of chemistries and LC modes to maximize flexibility.
- Superior peak shape to effectively resolve enantiomers.
- Increased sample throughput and lab productivity with more efficient chiral separations.

Don't compromise on your chiral separations: **www.agilent.com/chem/poroshell-120-chiral**

Agilent Captiva Enhanced Matrix Removal—Lipid

Minimize lipid interferences without losing your analytes. Agilent Captiva EMR—Lipid offers 96-well plates and 1, 3, and 6 mL cartridges to help you achieve effective lipid removal without analyte loss, increasing precision and lowering RSD. The Captiva EMR—Lipid pass-through SPE format simplifies workflows and reduces sample preparation steps.

With cleaner samples (removing >99 percent of phospholipids), you can improve method sensitivity and analyte recovery, resulting in faster data analysis, better reproducibility, and higher data confidence. By avoiding the introduction of a heavy-laden matrix into the system, you can also reduce unscheduled downtime. Advantages include:

- Improved efficiency: Unique EMR—Lipid mechanism combines size exclusion and hydrophobic interactions between the sorbent and the long aliphatic chain of the lipids.
- Better speed and precision: Solvent retention frit streamlines and automates your in-well protein precipitation workflow.
- An easier flow: An advanced filter design and construction technology ensure clog-free operation.

Optimize analyte recovery in complex matrices: **www.agilent.com/chem/captiva-emr-lipid**

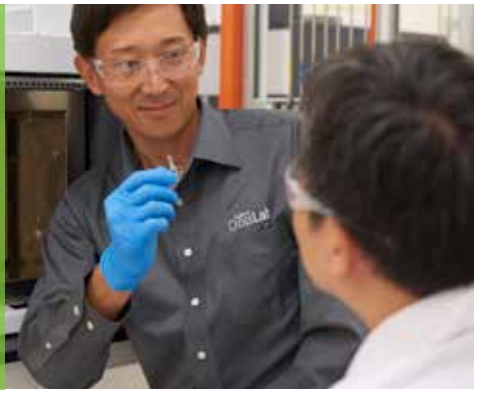
Agilent A-Line Vials

Agilent A-Line Vials, developed through continuous innovation in glassware, enable superior analytical performance and greater laboratory outcomes. Agilent vials are designed to attain consistent recoveries to achieve the most precise measurements from vial to vial and lot to lot.

- Save hours of time by dramatically reducing the need for sample reruns.
- Spend as much as 25% less by significantly reducing unplanned costs, which include troubleshooting, reruns, and downtime.
- Conform with demanding and regulated environments: Our Certification of Analysis provides specific data confirming vial appropriateness.

For more details and ordering information, visit: **www.agilent.com/chem/vialsresources**

Spectroscopy standards and supplies to save time in the laboratory



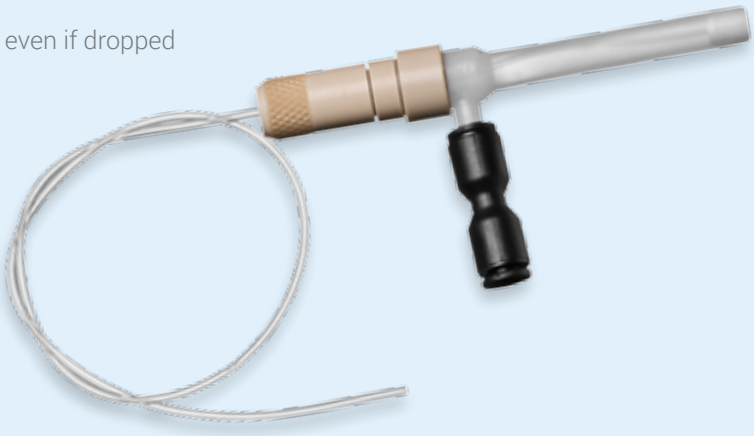
Agilent OneNeb Series 2 Nebulizer

Agilent OneNeb Series 2 nebulizers take robustness and durability to the next level, while retaining the performance enhancements of the original Agilent OneNeb. They can replace conventional glass concentric nebulizers and some inert nebulizers. These nebulizers use Flow Blurring nebulization, which ensures better sensitivity and precision – plus greater tolerance to samples with high levels of Total Dissolved Solids (TDS) – compared to conventional glass concentric nebulizers.

To learn more, visit: **www.agilent.com/chem/oneneb2**

10 benefits of the Agilent OneNeb Series 2 Nebulizer

1. Eliminates downtime when switching applications and nebulizers
2. Inert: Use with virtually any solution
3. Lower running costs: Virtually indestructible, even if dropped
4. Improve productivity: Reduces reporting limits and LODs, eliminating rework
5. Confidence in results: Typical precision is <1% RSD
6. Higher throughput: Excellent long term stability means longer runs
7. Less downtime: Minimize blockage with high TDS samples
8. Suitable for any ICP-OES
9. Hassle free: Replaces a conventional glass concentric nebulizer without adaptors or method changes
10. Reduced administration costs: Agilent can satisfy all of your supply needs



Agilent ICH/USP <232> Impurities Kit

The Agilent ICH/USP <232> Impurities Kit contains five certified reference materials (CRMs) that simplify testing of inorganic contaminants in pharmaceuticals. The CRMs simplify adherence to the ICH Q3D and USP <232> requirements. Users of the impurities kits are assured of consistent, precise results for increased productivity.

- Simplified testing helps maximize instrument performance and productivity.
- This is the only full line of inorganic, metallo-organic, and biodiesel CRMs certified to the highest quality in the industry for AA, MP-AES, ICP-OES, and ICP-MS applications.
- These impurities kits can be used across instruments and instrument vendors for elemental analysis.

Spend less time preparing your standards:
www.agilent.com/en/promotions/uspstandard

Agilent LED Measuring Magnifier

The Agilent LED Measuring Magnifier makes checking the sampler and skimmer cones much easier. Dirty, blocked, or damaged interface cones can have a huge, adverse impact on the sensitivity, precision, and background of your ICP-MS results. The magnifier is bundled with the Agilent Cone Care Kit, giving you all the supplies you need to replace and maintain your interface cones.

- Avoid the hassle of removing the cones from the lab to inspect them under a microscope.
- Check if a cone needs replacing—often due to an enlarged or damaged orifice.
- Check for matrix build-up at the tip.

Make cone inspection more reliable:
www.agilent.com/cs/library/flyers/public/5991-8673_icpms_conecarekit_flyer.pdf

Move your lab ahead with Agilent GC innovations

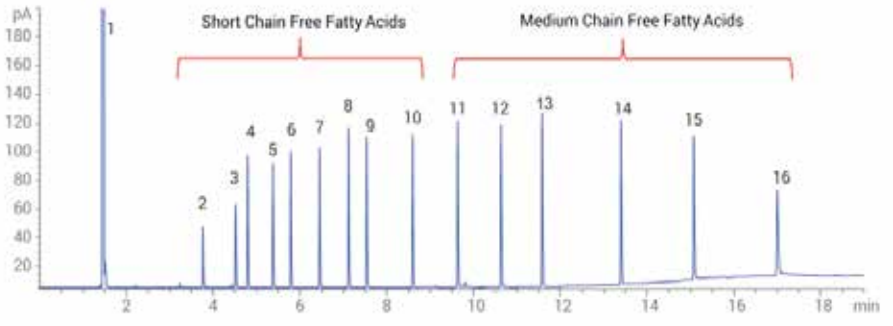
Agilent J&W DB-FATWAX Ultra Inert GC columns

Agilent J&W DB-FATWAX Ultra Inert GC columns are application-specific columns for analyzing unsaturated and polyunsaturated fatty methyl esters (FAMEs). FAMEs are commonly found in fish oil and animal fat such as the Omega 3 and Omega 6 FAMEs. These columns offers a range of advantages:

- Superior inertness resulting in improved peak shape for challenging polar fatty acids, including underivatized fatty acid separation.
- Enhanced selectivity for Fatty Acid Methyl Esters (FAMEs).
- Solvent rinseable—tolerates aqueous injections.

Analyze FAMEs and fatty acids on a single column: **www.agilent.com/en/promotions/fame-columns**

Analysis of short-chain and medium-chain free fatty acids



Conditions

Column:	DB-FATWAX UI, 30 m x 0.25 µm (p/n G3903-63008)
Inlet:	250 °C, split mode, split ratio=50:1, 40 cm/s
Carrier:	Helium, constant flow mode, 38 cm/s
Oven:	100 °C to 250 °C @10 °C/min, 260 °C (10min)
FID:	280 °C
Injection:	1 µL
Sample:	Approximately 0.5mg/mL each component in acetone

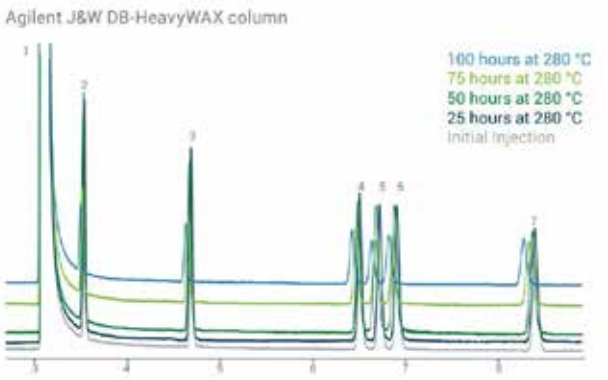
1. Acetone and Formic acid
2. Acetic acid
3. Propionic acid
4. Isobutyric acid
5. Butyric acid
6. Isovaleric acid
7. Valeric acid
8. 4-Methylvaleric acid
9. Hexanoic acid
10. Heptanoic acid
11. Octanoic acid
12. Nonanoic acid
13. Decanoic acid
14. Lauric acid
15. Myristic acid
16. Palmitic acid

Agilent J&W DB-HeavyWAX GC columns

Agilent J&W DB-HeavyWAX GC columns featuring an extended temperature limit of up to 280 °C isothermal and 290 °C programmed, are the first-of-a-kind Polyethylene Glycol (PEG) columns providing several advantages for difficult compounds:

- Fast analysis: Higher maximum temperatures allow for shorter run times, by almost 20%.
- Retention time stability and increased column lifetime—even at maximum operating temperatures.
- Decreased carryover and ghost peaks.
- An extended list of analytes, including higher molecular weight compounds.
- A broader range of multidimensional GC applications requiring higher oven temperatures.

Learn more at:
www.agilent.com/chem/db-heavywaxinfo



Even after 100 hours at 280 °C, the retention times showed minimal shift with the Agilent column for this 100 ppm BTEX standard.
1. Methanol 2. Benzene 3. Toluene 4. Ethylbenzene 5. P-xylene 6. M-xylene 7. O-xylene

Agilent ADM Flow Meter

The easy-to-use Agilent ADM flow meter gives your lab an external reference to verify flows—essential when you're qualifying instruments or developing a method. It's also an invaluable tool for troubleshooting, significantly reducing the time needed to pinpoint a problem.

- Recalibrate annually by replacing the NIST-certified calibration cartridge.
- USB connects to a Web interface for updates and monitoring and allows you to directly upload data onto a PC for real-time analysis.

Discover more about the reliable and convenient ADM Flow Meter:
www.agilent.com/chem/admflowmeter

Agilent IDP-3 Dry Scroll Pump

The Agilent IDP-3 Dry Scroll Pump provides powerful, reliable, and clean oil-free vacuum technology. It uses an innovative dual-scroll mechanism and tip seal design to eliminate the need for oil, which significantly reduces the cost of ownership.

- Small and lightweight design.
- Better vacuum performance than other pumps of comparable sizes.
- IDP3 vacuum pumps rapidly reach low base pressures ensuring greater system reliability and optimized performance.

The Agilent IDP-3 Dry Scroll Pump makes any application run more smoothly. Learn more at: **www.agilent.com/chem/IDP3**

Agilent University Running Start

New hire in your lab? Give them an Agilent University Running Start and give yourself a break.

Properly trained operators are key to maximizing the return on your Agilent instruments. But locating and obtaining the right training can be time-consuming and expensive. Running Start makes it easy, with online learning modules carefully selected and packaged by our curriculum experts. Now, one simple, affordable purchase gets new instrument operators up to speed quickly.

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