Agilent LC and LC/MS Purification Solutions

Purify your way

Agilent Technologies

PURIFY YOUR WAY WITH PURELY BETTER SOLUTIONS FOR COMPOUND ISOLATION

Agilent Technologies offers the most comprehensive portfolio of flexible and reliable solutions for sample purification by liquid chromatography. No matter what scale of LC purification you are working at, Agilent has high-performance instrumentation, columns, software and services that ensure highest purity and maximum recovery. And because it's from Agilent, you get everything you expect from a chromatography leader with over 40 years of innovative contributions to LC technology.

Flexible and affordable

The Agilent 218 Purification System is a highly flexible and affordable binary gradient system that delivers excellent flow precision and gradient reproducibility.

- Broad flow range from 1 to 200 mL/min made possible by exchangeable pump heads
- Extended dynamic UV detection range up to 80 AU
- Wide application range, including biological samples

Intuitive and accurate

The Agilent 1260 Infinity Analytical-Scale Purification System is an intuitive, easy-to-use solution for highest compound recovery and purity.

- Analysis and purification from UHPLC to preparative LC/MS using one simple yet powerful software package
- Automatic delay calibration ensures maximum recovery and purity
- 100 percent bio-inert solution with a completely metal-free flow path

Flexible and rugged

The Agilent 1260 Infinity Preparative-Scale Purification System can be tailored to meet individual needs for workflow and throughput, and is renowned for its reliability and robustness.

- Flexible configurations for purification of micrograms to milligrams of pure product
- Automatic delay calibration and multiple detectors facilitate maximum recovery and purity
- Rugged scaleup from analytical to preparative scale

Easy and scalable

The Agilent 1260 Infinity Automated Purification System is a scalable, workflow-based solution that combines proven and robust 1200 Infinity Series modules with new software for automated scale-up from analytical method scouting to optimized purification with maximum purity and recovery.

- Automated transfer of data between process steps, streamlining your workflow for highest productivity
- EasyPrep and expert modes for straightforward operation by occasional or experienced users

Capable and efficient

The Agilent SD-1 Purification System offers an unmatched range of capabilities, delivering high flow rates at high pressure for maximum efficiency.

- Up to 500 mL/min flow for bench-top production applications
- Interactive software for seamless integration in engineering workflows

Flow range extensions made possible by exchangeable pump heads

*Optional software available for automated analytical-to-preparative scale-up

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Agilent 1260 Infinity Analytical-scale and Preparative-scale Purification Systems

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Agilent SD-1 Purification System

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Agilent Load & Load Columns

ACHIEVE HIGHEST PURITY AND RECOVERY THROUGH ONE SIMPLE YET EASY-TO-USE SOFTWARE PLATFORM

The Agilent 1260 Infinity Analytical-scale Purification System is an indispensable tool in your purification workflow – on one system with one software you can perform both analytical UHPLC and preparative LC.

Analyze and purify on one software platform

A single, intuitive software is all you need to run complex analytical UHPLC separations and then scale-up to LC purification. The Agilent OpenLAB CDS ChemStation Edition software includes a graphical fraction preview tool that helps you to visualize the optimization of all relevant fraction trigger parameters based on previously acquired data.

Maximize purity and compound recovery

The Agilent 1260 Infinity Analytical-scale Purification System handles flow rates from 100 µL/min to 10 mL/min at pressures up to 600 bar, making it the system of choice for compound purification in the nanogram to low milligram range on columns with internal diameters between 2.1 and 9.4 mm.

Agilent's fraction delay sensor technology determines fraction delay volumes automatically and ensures that fractions are collected just-in-time without the need to collect extra volume to be on the safe side.

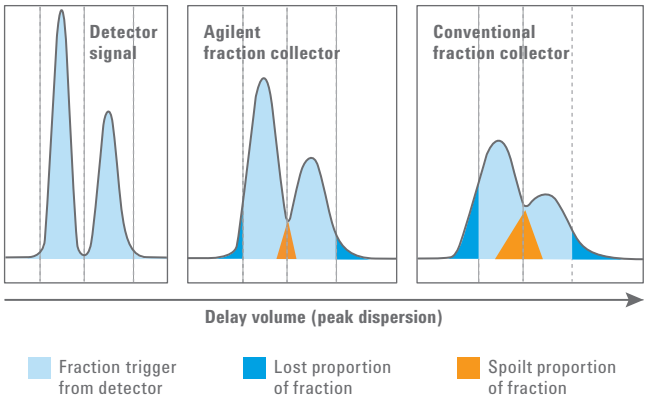
Multiple detection options are available with straightforward upgrade from a basic UV-based system to advanced mass-based detection.

Time, peak and mass-based fraction collection – or any combination of these – are available and can be triggered by the detector of your choice. Intelligent real time data processing for instantaneous and precise fraction collection is guaranteed through the control area network (CAN).

BIO inert

With a completely metal-free flow path, the Agilent 1260 Infinity Bio-inert LC System with fraction collector is the ideal solution for protein purification.

Based on Agilent's industry-leading liquid chromatography platform, the Agilent 1260 Infinity Analytical-scale Purification Systems can be tailored to your sample and detection requirements and are supported by a multitude of application examples.



The Agilent 1260 Infinity Fraction Collectors are designed for lowest delay volumes to avoid peak dispersion and carry-over between fractions, assuring highest recovery and purity for your fractions.

MAXIMIZE YOUR PURIFICATION FLEXIBILITY WITH RUGGED ANALYTICAL-TO-PREP SCALE-UP

The Agilent 1260 Infinity Preparative-scale Purification System offers you ultimate flexibility – use it as a workhorse for automated, high-throughput applications, or as a method scale-up solution for optimizing resolution and recovery.

Purify milligrams to grams of material

The Agilent 1260 Infinity Preparative-scale Purification System is ideal for purification when you have milligrams to grams of starting material. The system delivers high flow rates up to 100 mL/min and is a perfect match for columns with internal diameters from 9.4 to 30 mm.

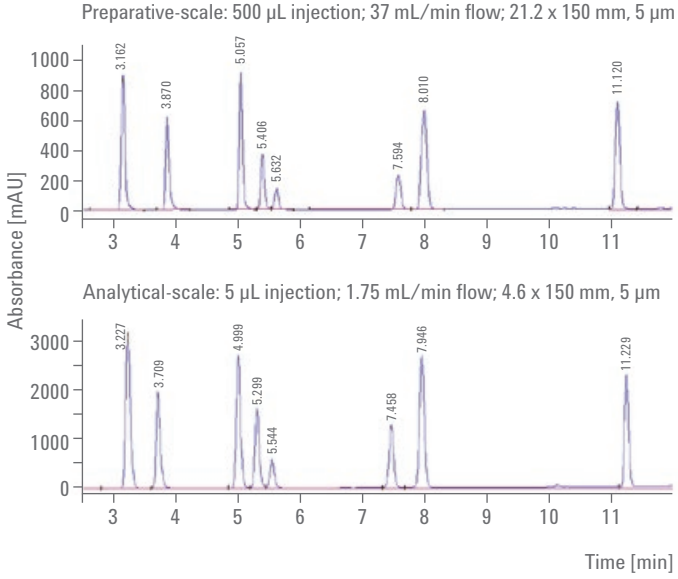
Benefit from ultimate flexibility

The modular design of the Agilent 1260 Infinity Preparative-scale Purification System offers you outstanding flexibility in terms of application and bench space. One of the major advantages of this modularity is the ability to achieve shortest possible fluidic connections. Using optimized tubing diameters for different flow rates results in smallest delay volumes, minimal peak dispersion and lowest overlap between fractions. And, if your purification needs change, you can easily adapt or upgrade the system to meet the new workflow, detection or throughput requirements.

Robust scale-up from analytical to prep

As the market and technology leader in LC instrumentation Agilent clearly differentiates itself in terms of product quality, robustness and ease of use. The Agilent fraction delay sensor technology guarantees just-in-time peak collection regardless of your instrument configuration. Temperature control of autosamplers and fraction collectors prevents deterioration of labile compounds – even during prolonged storage.

The Agilent 1260 Infinity Preparative-scale Purification System can be configured with multiple fraction collectors for high-throughput applications. Detection capabilities can be extended easily, for example, with an MS detector.



Linear scale-up from analytical to prep with generic gradient.

PURIFY YOUR WAY WITH A WORKFLOW-BASED SOLUTION FOR AUTOMATED ANALYTICAL-TO-PREPARATIVE SCALE-UP

The Agilent 1260 Infinity Automated Purification System is a scalable, workflow-based solution that combines proven and robust 1200 Infinity Series modules with new software for automated scale-up from analytical method scouting to optimized purification with maximum purity and recovery.

Streamline your purification workflow

With combined or dedicated analytical and preparative-scale systems configured to meet the throughput demands of your laboratory, Agilent's new purification software automates the transfer of data between process steps, streamlining your workflow for highest productivity.

- Import of sample data in common formats
- Setup of sequence tables for analytical method scouting in walk-up mode
- Confirmation of target compounds in crude products
- Calculation of focused gradient profiles for scale-up from analytical to preparative column dimensions
- Review of collected fraction purity by UV and MS spectral data
- Selection of fractions for pooling
- Setup of sequence tables for reanalysis of fractions

Tailor a solution to match your workflow

The modularity of the Agilent 1260 Infinity Purification Systems offers you outstanding flexibility to match the application challenges, throughput demands and bench-space restrictions of your laboratory.

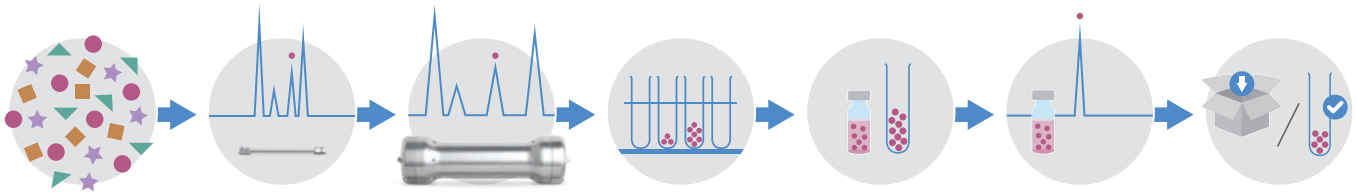
Easy for occasional users – easy for experts

The Agilent automated purification software is easy to use, regardless of the level of functionality your users need to complete their tasks.

The EasyPrep mode provides everything required for occasional purification tasks. Within a few clicks the user can set the desired combination of analytical and preparative columns, upload and process the analytical results, launch the purification run, and review the purification results.

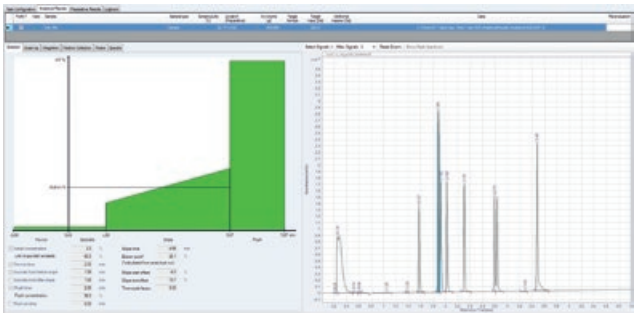
Full access to the entire functionality is available through the expert mode, which also provides for configuration of preset methodologies for occasional users.

A typical purification workflow that can be automated by deploying the new Agilent Automated Purification Software with a combined analytical and preparative system based on UV or MS detection.



Automated calculation of focused gradient profiles for highest purity and recovery

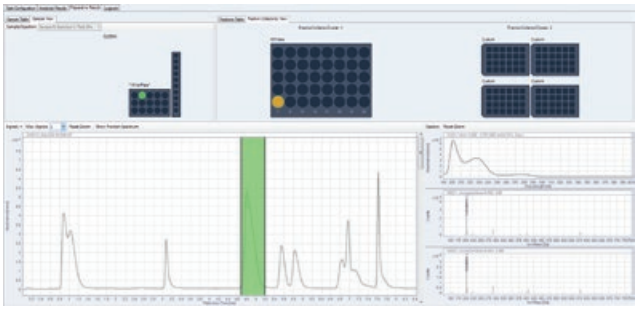
When you have confirmed the identity of your target compound, the automated purification software uses special algorithms to calculate a focused gradient profile for the subsequent preparative-scale purification run. This ensures highest purity and recovery of the collected fractions while optimizing resolution and run time for minimum solvent consumption. A focused gradient profile can be calculated for each target compound of interest, optimizing the overall efficiency of your laboratory operation.



A focused gradient profile ensures highest purity and recovery.

Purification results are available at-a-glance for identification of fractions for reanalysis

The fraction results browser allows you to monitor the collected fractions from the purification run. At a glance you can see all chromatographic results, including UV and mass spectral data from each collected fraction. This helps you to identify which fractions need to be reanalyzed to determine the purity of the fraction. Just a single click is required to add the sample to a sequence for reanalysis.



An interactive browser lets you see all your results – at a glance.

One-click selection of samples for fraction pooling by automatic liquid handlers

In the same way that new sample lists for reanalysis can be generated, the automated purification software allows you to select samples for pooling and then export the lists to automatic liquid handlers for processing.

Your selected fractions can be pooled by an automatic liquid handler.

EXCELLENT FLOW PRECISION AND GRADIENT REPRODUCIBILITY WITHIN REACH OF YOUR BUDGET

The Agilent 218 Purification System is a highly affordable binary gradient system with the flexibility to adapt to your purification needs as they change over time.

Broad range of flow rates

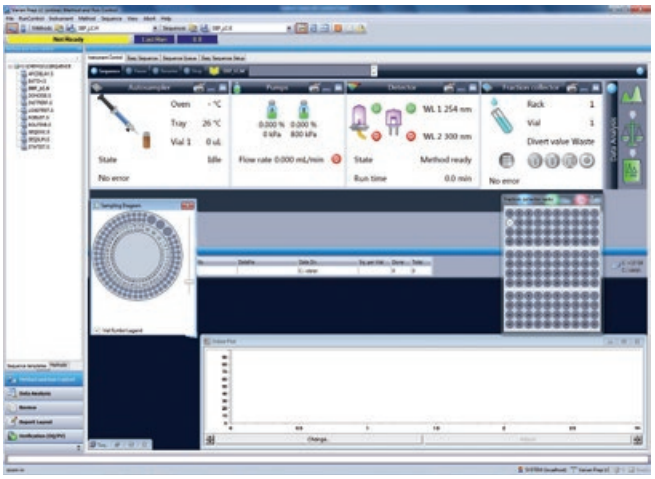
High performance pumps deliver precise flow rates up to 10 mL/min at 600 bar or up to 200 mL/min at 230 bar to achieve reproducible separations every time.

Wide range of applications

Choose from seven preconfigured solvent delivery systems, including pump heads, valves and injectors, which make the Agilent 218 Purification System ideal for all common laboratory-scale purification processes.

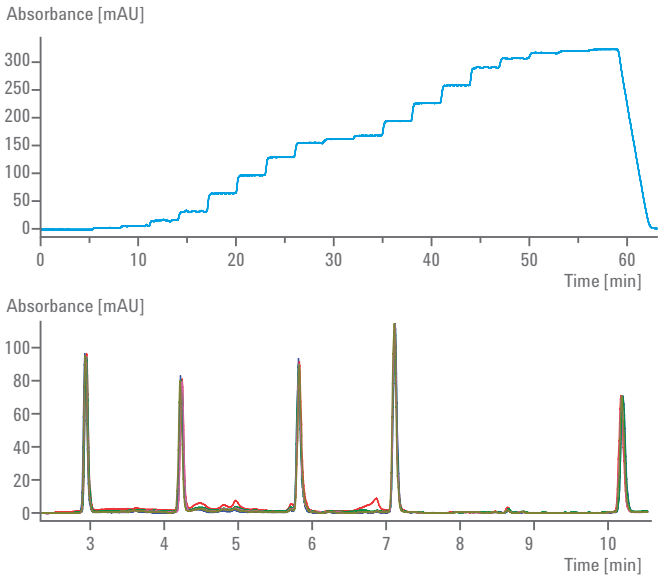
Highly flexible

As your purification needs change, it's easy to extend the capabilities of your system. Simply interchange the pump heads, tubing, mixers or other accessories to meet the new challenge. It's easy to upgrade, too. If your purification needs demand binary, ternary or quaternary gradient capability, just add an extra pump – there's no need to invest in a whole new system.



Agilent laboratory-scale purification systems are controlled through Agilent OpenLAB CDS ChemStation Edition – a single software for analytical and preparative work.

The Agilent 218 Purification System is also available as a bio-compatible version with PEEK or titanium fittings for applications requiring acidic mobile phases or that need to be free of metals such as iron, chromium or vanadium.



Step gradient (upper trace) and overlay of five injections demonstrate the precision and reproducibility of the Agilent 218 Purification System's solvent delivery, running at 10 mL/min and equipped with 100 mL pump head.

ACHIEVE HIGH QUALITY HPLC SEPARATIONS AT THE WIDEST RANGE OF FLOW RATES

The Agilent SD-1 Purification System delivers accurate and reproducible solvent flow and elution gradients for high quality HPLC separations – time after time.

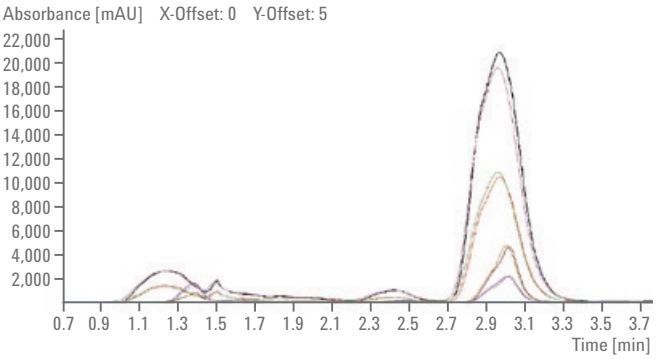
Expandable flow rate range

The Agilent SD-1 Purification System delivers pulse-free flow at high pressures and at the widest range of flow rates available. The configuration of choice for analytical and preparative applications offers a flow range up 200 mL/min. Equipped with three additional interchangeable pump heads the system's flow range can be expanded up to 500 mL/min, facilitating isocratic and binary gradient elution with an unmatched power range for pilot-scale purification.

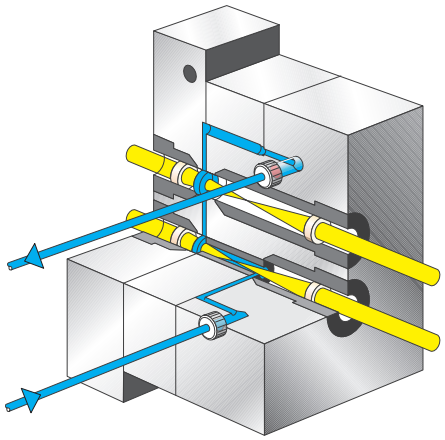
Straightforward scale-up

With the Agilent SD-1 Purification System you can optimize your preparative method quickly and inexpensively on a small diameter column. When you are satisfied with the method, simply turn the optional valve to divert the flow to the prep column and set a new flow rate for instant scale-up – even for the most challenging gradient separations. With a high pressure capability of 600 bar, the Agilent SD-1 Purification System is ideal for scale-up from small particle columns.

The Agilent SD-1 Purification System achieves high quality HPLC separations at the widest range of flow rates.



Achieve up to 80 AU when moving from analytical to preparative operation, without changing the dual-path flow cell, as shown by the dynamic range from 2 to 21 AU for a 5-hydroxytryptophan sample.



The dual-path flow cell in the Agilent 325 UV detector maximizes sensitivity for analytical applications while preventing overloaded "flat-top peaks" during preparative runs. As its name suggests, the dual-path cell is two flows cell merged into one!

VERSATILE COLUMN SOLUTIONS FOR INCREASED PURIFICATION EFFICIENCY

Agilent Load & Lock columns are the most innovative DAC columns available and combine excellent packed bed stability with enhanced flow distribution to deliver highest productivity, making them a perfect match for Agilent's Purification Systems.

Easy to setup and easy to use

When you need to purify large quantities of material using your own choice of separation media, Agilent Load & Lock columns can help you get your purification facility up-and-running quickly and with ease. Within a few minutes you can pack or unpack your column with any commercially-available media. Combined in one easy-to-move stand, the column and packing station can be moved wherever it's needed with your facility for maximum mobility and greater convenience.

High performance on a big scale

Agilent Load & Lock columns are available with inside diameters from 1 to 3 inches (27 to 75 mm) and are unique in that they offer both dynamic axial compression (DAC) and static axial compression (SAC). Axial compression is used in the column packing process to compress the sorbent particles into a tightly packed, void-free bed for high performance purifications. With DAC the packed bed is constantly compressed while being used, whereas with SAC the column is compressed by a plunger held in position with a locking mechanism.

An optional stainless steel column water jacket promotes separation at elevated temperatures, improving resolution by enhancing the mass transfer of large solutes.

A complete range of Agilent Load & Lock columns delivers versatile solutions for high performance, high throughput and high yield pilot-scale purification.

Agilent's unique fluid and sample distribution technology increases sample loading by up to 20% while minimizing peak broadening and reducing back pressure for maximum productivity and superior results.

HIGHEST SAMPLE LOADING FOR RELIABLE PURIFICATION OF LARGE AMOUNTS AT LOWER COST

Agilent's line of preparative liquid chromatography columns offers the highest sample loading among major commercial preparative columns for cost-effective and reliable purification of target compounds.

Superior sample loading

Whether you are scaling up a routine analytical method, or maintaining precise separations throughout every phase of production, our wide array of preparative and process columns and bulk media are designed for high loadability in a range of particle sizes and phases.

- Agilent Prep LC columns are a cost-effective solution for high loadability to purify milligram to gram quantities with C18 and unbonded silica
- Agilent ZORBAX Prep HT columns are for rapid scale-up within the ZORBAX family, with optimized resolution and loadability under any conditions, up to 2,000 mg
- Agilent Pursuit and Pursuit XRs Prep columns offer high loadability with a high surface area, with C18, C8, Diphenyl, and Si, plus fluorinated PFP and PAH polymeric for shape selectivity
- Agilent PLRP-S Prep columns span µg/mg discovery to multiple-gram cGMP applications with a polymeric material that provides excellent chemical stability, up to 1 M NaOH, for column sanitation and regeneration
- Agilent PL-SAX and PL-SCX Prep columns ion-exchange functionalities covalently linked to a chemically stable polymer for high-capacity purifications, or large biomolecules with high-speed, high-resolution purifications
- Bulk materials are available for most phases and can be ordered through Agilent's Custom Ordering Process, visit **www.agilent.com/chem/customlc**

Agilent Prep LC columns provide the highest sample loading (by mass) in the industry – so you can purify more sample in less time.

Agilent ZORBAX Prep HT enable rapid scale-up within the ZORBAX family from analytical to preparative applications.

Learn more
www.agilent.com/chem/purification

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