

# Span the Spectrum of Bio LC

Agilent InfinityLab Bio LC Solutions





# Overcome Analytical Challenges in Biopharma

The growing complexity of biopharma analysis calls for innovation that delivers excellence across the biopharmaceutical workflow. The Agilent InfinityLab Bio LC Solutions comprise a full range of entirely biocompatible and bio-inert LC systems that enables robust, accurate bioanalysis from drug discovery and development to QA/QC.

By combining these systems with bio columns, MS detection, software, and services, we can help you create a complete solution to meet your biopharma challenges.

**BIO**



# Systems for Bioanalysis, and Beyond

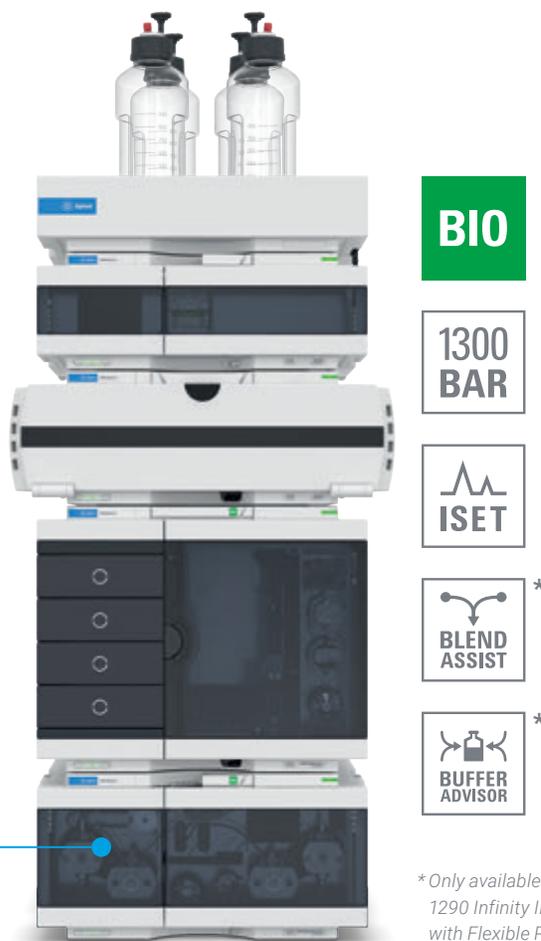
The InfinityLab Bio LC Solutions consist of four core systems that can be adapted to meet all your bioanalysis needs and more, such as analytical-scale purification applications with the 1260 Infinity II Bio-Inert LC. By pairing proven InfinityLab technology with bio-compatible or bio-inert components, these systems enable you to meet the widest range of analytical challenges. Biocompatible systems contain iron-free sample flow paths, while bio-inert systems feature sample flow paths free of metal.

Either a **binary** or a **quaternary pump** can feature in the 1290 Infinity II Bio LC.

## 1290 Infinity II Bio LCs

### For ultra-high performance in complex analyses

The 1290 Infinity II Bio LC System is available with either the 1290 Infinity II Bio High-Speed Pump or Flexible Pump. The system is designed for the most demanding applications, providing very shallow gradients and enabling high performance, accuracy, and reliability. The biocompatibility of the system ensures robustness and biomolecule integrity.



\*Only available with the 1290 Infinity II Bio LC with Flexible Pump.

# 1260 Infinity II Prime Bio LC

## For everyday analysis with high flexibility

The biocompatible 1260 Infinity II Prime Bio LC System is a versatile HPLC for bio separations and offers outstanding functionality and operational convenience for bioanalytical HPLC and entry-level quaternary bio UHPLC. Because the system is based on 1290 technology, you can have the highest confidence in your analysis in all circumstances.

# 1260 Infinity II Bio-Inert LC

## For completely (bio-)inert applications

The 1260 Infinity II Bio-Inert LC is fully bio-inert, eliminating metal interactions and facilitating analysis of your most challenging compounds. The corrosion-resistant titanium solvent delivery system and metal-free sample flow path ensure integrity of biomolecules in your routine bio applications. The system also serves as an ideal front end for ICP-MS analysis.



**BIO**

**800  
BAR**

**ISET**

**BLEND  
ASSIST**

**BUFFER  
ADVISOR**



**BIO  
INERT**

**600  
BAR**

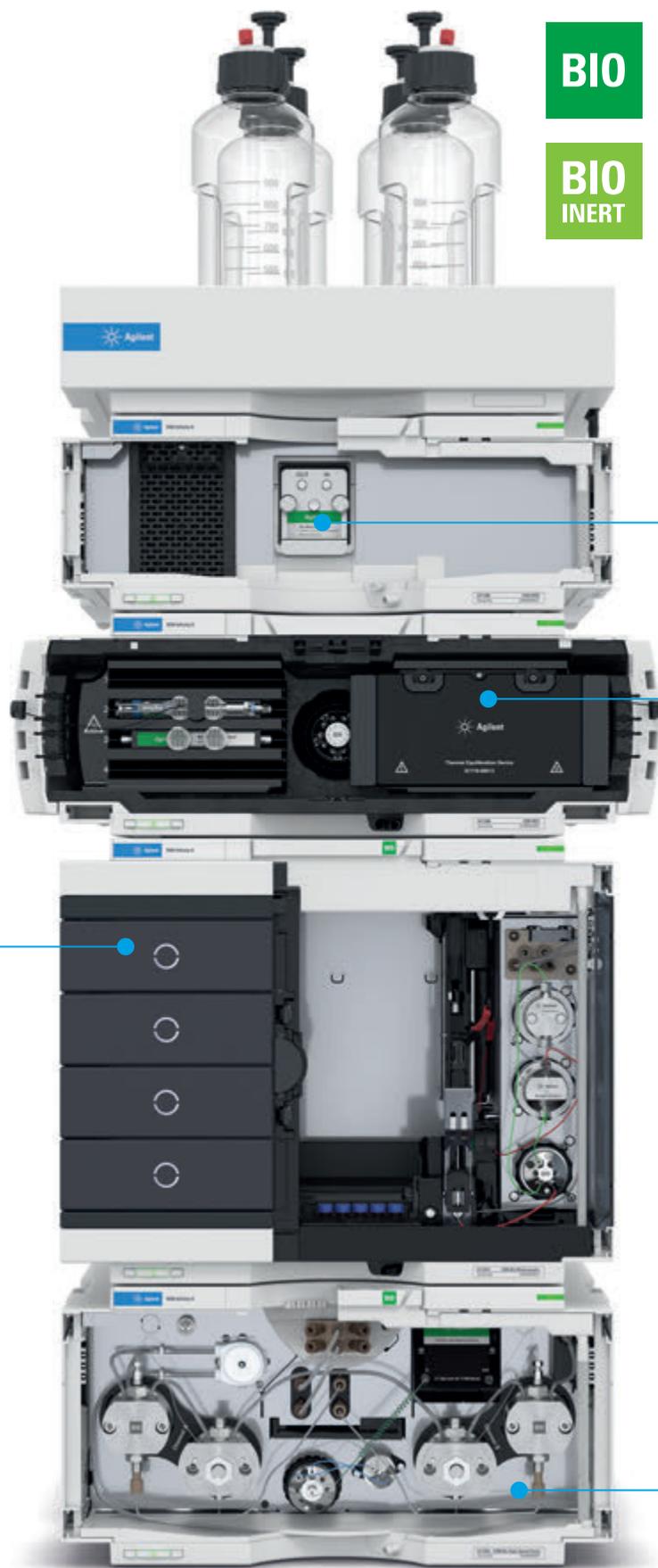
**BUFFER  
ADVISOR**

# Tailor Your System Using a Series of Modules

With InfinityLab LC instruments, you can be assured of robust results and outstanding quality. Their innovative design gives you the flexibility to assemble systems conformed to your specific needs in biopharma.

## Built-in sampling versatility

Biocompatible and bio-inert multisamplers provide for adaptable injection volumes. You can house up to 6,144 samples, all within the footprint of an Agilent LC stack. Optional multiwash capability reduces carryover to less than 9 ppm, while thermostating ensures the correct temperature for sensitive samples.



# Easy integration into your lab

## Multiple detection options

Choose from a wide range of sensitive detection capabilities with a variety of biocompatible and bio-inert flow cells, including variable wavelength, diode array and fluorescence detectors, and the Bio-MDS System.

## Versatile column handling

The Multicolumn Thermostat (MCT), featuring the Thermal Equilibration Device, gives high temperature stability for the most challenging biopharma applications. Together with biocompatible and bio-inert heat exchangers, valves, capillaries, fittings, and kits, the MCT enables optimized workflows and offers bio method development capabilities.

## Reliable and flexible solvent delivery

Built for robustness under even harsh conditions of high salt or high/low pH, our portfolio of biocompatible and bio-inert pumps allows you to maintain precise flow rates at pressures up to 1300 bar.

## ISET

### Seamless method transfer

With Intelligent System Emulation Technology (ISET) from Agilent, you can execute any legacy HPLC or latest UHPLC method while delivering the same chromatographic results—all through a few mouse clicks. ISET eliminates deviations in resolution and retention times when your laboratory deploys methods developed originally on other HPLC or UHPLC systems.

Available for the 1290 Infinity II Bio LCs and the 1260 Infinity II Prime Bio LC.

## ICF

### Efficient instrument control

Agilent Instrument Control Framework (ICF) facilitates comprehensive and straightforward control of your Agilent LC instruments and modules regardless of the chromatography data system you deploy in your laboratory.

Available with all Bio LC solutions.

### Learn more about ISET and ICF



See infographic

[agilent.com/chem/integrate-bio-lc](https://www.agilent.com/chem/integrate-bio-lc)

# Solutions for an Array of Workflows

The InfinityLab Bio LC Solutions encompass several analytical techniques and approaches applied within biopharma workflows. You can select solutions specified for a variety of applications such as 2D-LC, online LC, LC/MS, SEC, and more.

## Master complex separations with Bio 2D-LC

The InfinityLab Bio 2D-LC Solution\* combines strongly increased and fast resolution of multidimensional chromatography with a biocompatible high-end LC system. This system is perfectly suited for the analysis of complex samples or sample matrices, and challenging separations of co-eluting compounds in monoclonal antibodies, oligonucleotides, proteins and protein digests, lipids, metabolites, and many other demanding applications. The system also makes buffer-based separations compatible to MS detection.

*\* The InfinityLab Bio 2D-LC Solution will be launched at a later date. For more information, contact your local Agilent sales representative.*



2D-LC

## Confidently monitor processes with online LC

The InfinityLab Online LC Solutions\* enable automated process monitoring, providing real-time data for greater control and faster understanding of processes. The key technology within the solution, the Online Sample Manager, easily connects the analytical world with the process world. The module provides automated sample analysis via direct injections or retained samples from flow reactors, batch reactors, as well as upstream bioreactors and downstream purification devices.

*\* The InfinityLab Online LC Solutions will be launched at a later date. For more information, contact your local Agilent sales representative.*



PAT

### Expand your scope with LC/MS

Whether analyzing large biomolecules, peptides, or glycans, the Agilent 6545XT AdvanceBio LC/Q-TOF is designed for biopharma. Together with the 1290 Infinity II Bio LC and Agilent MassHunter BioConfirm software, the system can be used to realize automated workflows for intact protein, peptide mapping, and glycan analysis. With advanced security features and built-in technical controls to support compliance, BioConfirm Networked Workstation minimizes security risks while helping to preserve the integrity of the data.



LC/MS

### Characterize your proteins with SEC

The performance of SEC in the determination and quantitation of aggregates and potential degradants is significantly increased with the use of advanced light-scattering (LS) detection. This functionality is available with the 1260 Infinity II Bio-SEC Multidetector Solution, which is ideally combined with AdvanceBio SEC columns.



SEC

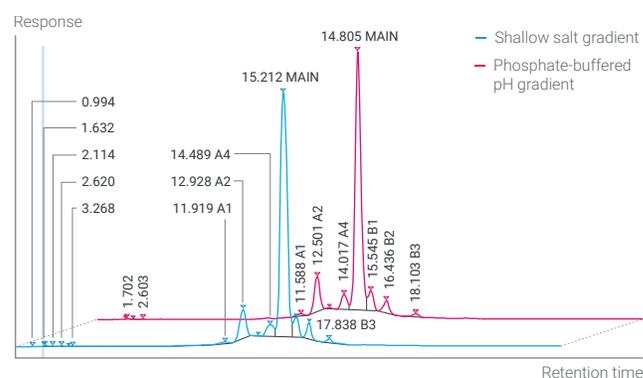
# Outstanding Performance Throughout Biopharma

The InfinityLab Bio LC Solutions demonstrate high robustness and performance across several common biopharma application areas. You can be confident of reliable results in areas including critical quality attributes.

## Charge variant analysis

Charge variants separation of monoclonal antibodies (mAbs) can be a challenging task. The 1260 Infinity II Bio Flexible Pump, as a quaternary pump, enables the use of Buffer Advisor Software to facilitate dynamic mixing of solvents from only four stock solutions, simplifying bio-analysis and significantly reducing buffer preparation time.

[Download application note](#) from the Agilent InfinityLab Application Finder: search for 5994-3257EN.

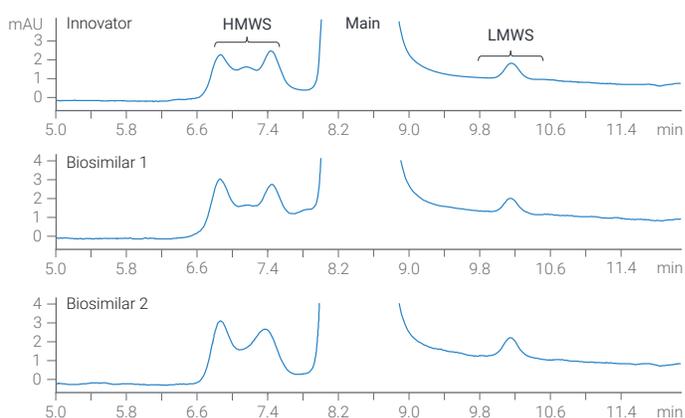


Overlay of two chromatograms for the separation of charge variants with a shallow salt gradient (blue) as well as a phosphate-buffered pH gradient from pH 7 to 8.4 (red).

## Aggregation analysis

SEC is ideal for separating monomeric proteins from dimers, trimers, other higher order aggregates, and lower molecular weight species. The 1260 Infinity II Bio-SEC Multidetector Solution with AdvanceBio SEC columns is an easy-to-use, optimized solution to obtain this information for high-sensitivity aggregate detection.

[Download application note](#) from the Agilent InfinityLab Application Finder: search for 5994-1496EN.

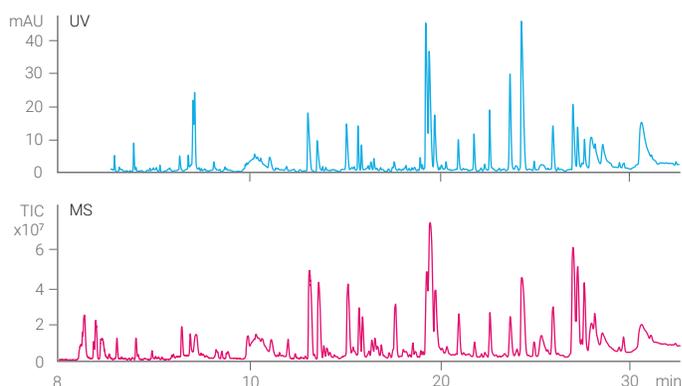


Zoom-in comparison of the aggregate's profile of rituximab innovator and biosimilars. HMWS: high molecular weight species; LMWS: low molecular weight species.

## Peptide mapping

Peptide mapping is the gold standard for elucidating the primary structure of mAbs. Due to the exceptionally good retention time precision and robust performance of the 1290 Infinity II Bio LC, it is the perfect analytical companion throughout the biopharmaceutical production chain.

[Download application note](#) from the Agilent InfinityLab Application Finder: search for 5994-2718EN.

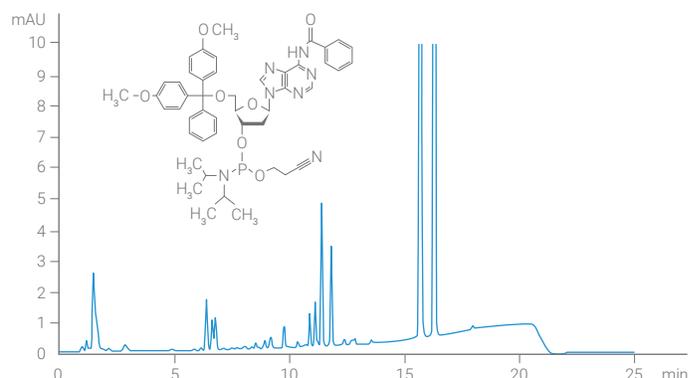


Chromatograms of a tryptic digest of the NISTmAb separated by the 1290 Infinity II Bio LC with UV and MS detection in sequence.

## Oligonucleotides

Oligonucleotide therapies are a growing field in biopharmaceuticals. Impurity analysis of raw materials can be easily carried out on the 1290 Infinity II Bio LC due to the iron-free flow path. Because of the flexibility of the 1290 Infinity II Bio Flexible Pump, method development is straightforward.

[Download application note](#) from the Agilent InfinityLab Application Finder: search for 5994-3498EN.

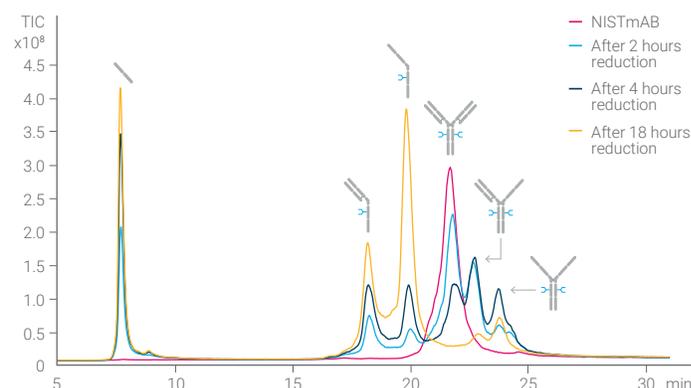


Zoomed-in view of the impurity analysis of the deoxyribo adenosine phosphoramidite raw material for oligonucleotide synthesis with the 1290 Infinity II Bio LC.

## Intact protein analysis

The biocompatible 1290 Infinity II Bio LC enables the analysis of product-related impurities such as low molecular weight species considered critical quality attributes (CQAs) in therapeutic mAbs. Combined with the Agilent PLRP-S PEEK-lined columns, the method stands as an alternative to SDS-PAGE or CE-SDS.

[Download application note](#) from the Agilent InfinityLab Application Finder: search for 5994-3021EN.



Chromatograms of the dynamic partial reduction of the NISTmAb separated on a PLRP-S PEEK-lined column with the 1290 Infinity II Bio LC and detected with the 6545XT AdvanceBio LC/Q-TOF.

# Be Agilent Sure in Your CQA Monitoring

Agilent AdvanceBio LC columns are designed and produced to provide results you can be sure of when analyzing highly complex biotherapeutic molecules and monitoring their purity, potency, and other critical quality attributes.

| Titer Determination     | Aggregate Analysis         | Intact Purity & PTM Analysis |                         | Peptide Mapping & PTM Analysis | Charge Variant Analysis      | Glycan Analysis           | Amino Acid / Cell Culture Media Analysis |                                |
|-------------------------|----------------------------|------------------------------|-------------------------|--------------------------------|------------------------------|---------------------------|--|--------------------------------|
| Affinity                | Size Exclusion             | Reversed Phase > 150 Å       | Hydrophobic Interaction | Reversed Phase < 150 Å         | Ion Exchange                 | Hydrophilic Interaction   | Reversed Phase < 150 Å                   | Hydrophilic Interaction        |
| Bio-Monolith rProtein A | AdvanceBio SEC 1.9 µm PEEK | PLRP-S 1000 Å 5 µm PEEK      | AdvanceBio HIC          | AdvanceBio EC-C18 PEEK         | Bio mAb / Bio IEX NP5 PEEK   | AdvanceBio Glycan Mapping | AdvanceBio Amino Acid Analysis (AAA)     | AdvanceBio MS Spent Media PEEK |
| Bio-Monolith Protein A  | AdvanceBio SEC 1.9 µm      | PLRP-S                       |                         | AdvanceBio Peptide Mapping     | Bio mAb (WCX)                |                           | ZORBAX Eclipse AAA 3.5 µm                |                                |
| Bio-Monolith Protein G  | AdvanceBio SEC 2.7 µm      | AdvanceBio RP mAb 450 Å      |                         | AdvanceBio Peptide Plus        | Bio IEX (SAX, WAX, SCX, WCX) |                           |  |                                |
|                         | Bio SEC-3                  | ZORBAX RRHD 300 Å, 1.8 µm    |                         | ZORBAX RRHD 300 Å, 1.8 µm      | PL SCX, SAX                  |                           |  |                                |
|                         | Bio SEC-5                  | ZORBAX 300SB 3.5, 5, & 7 µm  |                         |                                | Bio-Monolith (QA, DEAE, SO3) |                           |  | Oligonucleotide Analysis       |
|                         | ProSEC 300S                | Poroshell 300 5 µm           |                         |                                |                              |                           | Reversed Phase                           | Ion Exchange                   |
|                         | ZORBAX GF250 & GF450       |                              |                         |                                |                              |                           | AdvanceBio Oligonucleotide               | PL-SAX                         |
|                         |                            |                              |                         |                                |                              |                           | PLRP-S                                   | Bio SAX                        |

|            |   |  |
|------------|---|--|
| <b>Key</b> |  | Stainless steel (SS) column hardware               |
|            |  | Solid PEEK or PEEK-lined bio-inert column hardware |



## Agilent AdvanceBio

Learn more about Agilent AdvanceBio columns at: [www.agilent.com/chem/advancebio](http://www.agilent.com/chem/advancebio)

# Analytical Success Requires Quality Reference Material and Sample Preparation

To further ensure high standards in every aspect of your bioanalysis, you can supplement your instrumentation with high-quality standards, kits, and consumables from Agilent. From ISO-compliant standards to well plates and vials, we offer supplies that truly complete your biopharma workflows.



## Agilent-NISTmAb standard

Agilent-NISTmAb is a reference mAb standard that is intended for system suitability testing, establishing method, instrument, or site-to-site variability, and troubleshooting mAb CQA workflows.

Learn more at [agilent.com/chem/nist-mab](https://www.agilent.com/chem/nist-mab)



## AdvanceBio Gly-X-N-glycan prep with InstantPC kits

The Gly-X N-glycan rapid release and labeling with InstantPC kit uses an in-solution enzymatic protein deglycosylation, followed by rapid labeling of released N-glycans with InstantPC dye. After a simple clean-up step, the glycan samples are ready for analysis by UHPLC, LC/MS, MS/MS, and other methods.

Learn more at [agilent.com/chem/advancebio-gly-x](https://www.agilent.com/chem/advancebio-gly-x)



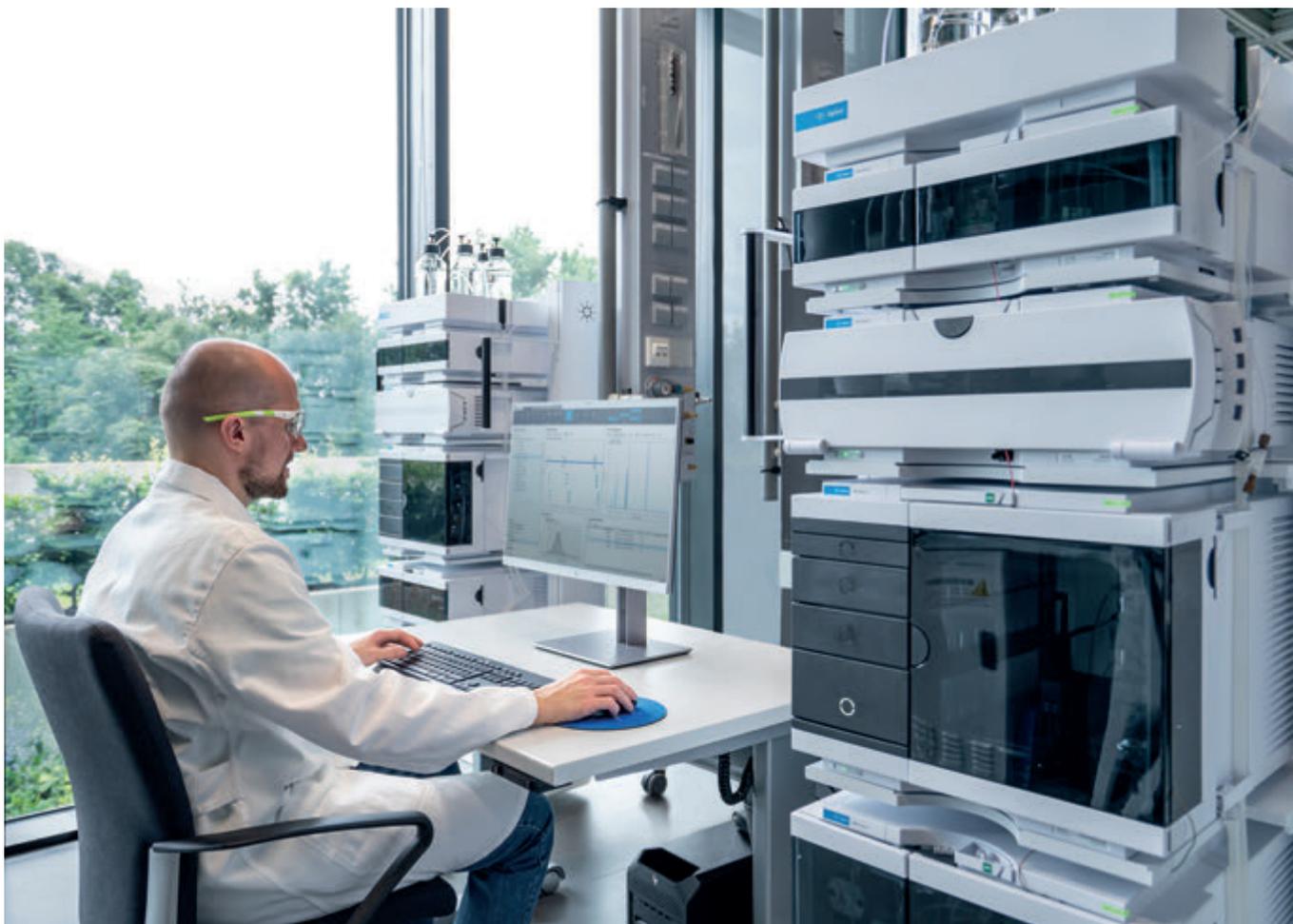
## InfinityLab ProtA-SEC Kit

The InfinityLab ProtA-SEC Kit can be used with a 1290 Infinity II Bio 2D-LC System for titer and aggregation analysis of mAbs. Benefit from short analysis times and a fully automated, robust workflow for reproducible quantitative determination of CQAs of mAbs. A service is available for implementing this workflow.

Learn more at [agilent.com/chem/2D-LC](https://www.agilent.com/chem/2D-LC)

## Bring More Flow to Your Workflows

OpenLab CDS supports your efforts to optimize your bioanalysis LC workflows by integrating instrument control, data integrity, and efficiency into one chromatography software solution. OpenLab CDS provides a single, powerful, comprehensive toolset for controlling your Agilent Bio LC instruments and is equipped with built-in technical controls that help ensure data integrity and facilitate rigorous regulatory compliance. What's more, OpenLab CDS enables you to generate quality results efficiently when you are running single samples or complex sequences with blanks, calibration standards, and unknowns.





## Agilent CrossLab

# Set Up Your Lab for Success

Maximize instrument performance with Agilent CrossLab services. Our industry-leading services—tailored to meet your needs—can help your lab extend uptime, produce reliable data, stay compliant, and have predictable service costs. And because a skilled team is a key driver of lab success, we also offer comprehensive learning opportunities from beginner to expert.

### Financial Solutions

Acquire the latest innovations through flexible installment plans—without a large down payment.

### Compliance Services

Rely on our network-distributed ACE platform to simplify deployment and preserve data integrity, while enabling paperless electronic reports and signatures.

### CrossLab Service Plans

Maintain instrument performance with Agilent CrossLab service plans. Choose Enhanced Extended Warranty for added peace of mind with annual preventive maintenance after your first year.

### Agilent University

Gain insights for boosting efficiency and minimizing downtime with flexible training options—including in person, virtual, and on-demand online.

### CrossLab Start Up

Prepare your site, familiarize yourself with operations, and maximize accuracy from the start with installation, introduction, and First Run Assist.

### Method & Applications Services

Overcome application problems—and reduce the time it takes to deploy new methods—by partnering with our global team of application experts.

## 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 family is designed to work together to help you improve your workflow, increasing efficiency and reducing operational costs.

Learn more about InfinityLab:

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Learn more:

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