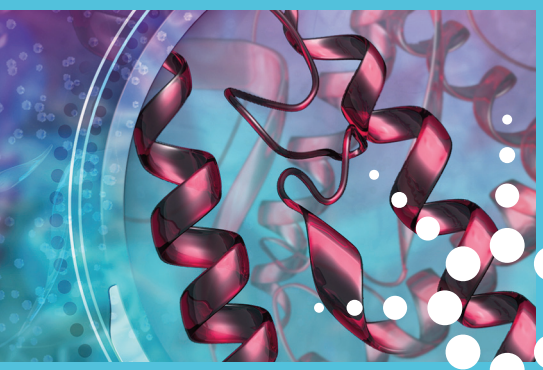


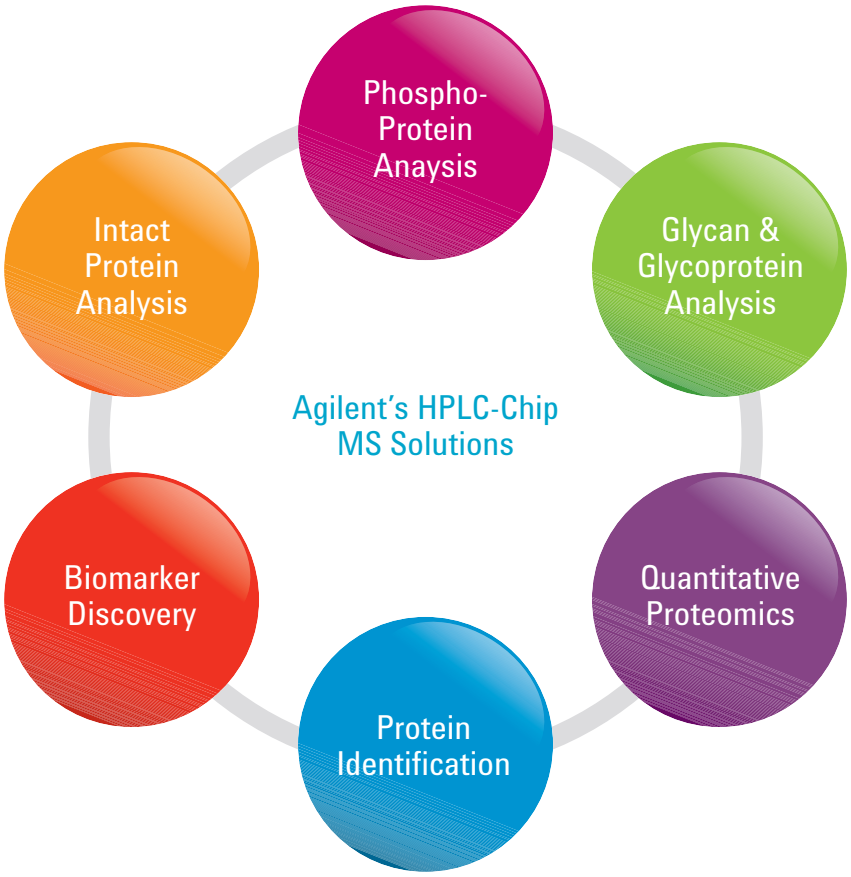
Agilent HPLC-Chip LC/MS

Faster, easier, flexible proteomics solutions

Our measure is your success.

products | **applications** | software | services

Agilent Technologies



What's your workflow?

The field of proteomics has rapidly expanded to cover just about every aspect of protein research—from identification and characterization, to biomarker discovery and quantitation. Because protein analysis presents many distinct challenges, your proteomics research goals need to be met by complete, optimized and accessible workflows for fast, accurate and reproducible results.

Agilent's HPLC-Chip sits at the center of an integrated proteomics workflow that provides the highest analytical performance with unprecedented plug-and-play flexibility. Our robust, interchangeable workflows simplify setup and let you quickly switch between different methodologies to complete your research faster, with greater confidence.

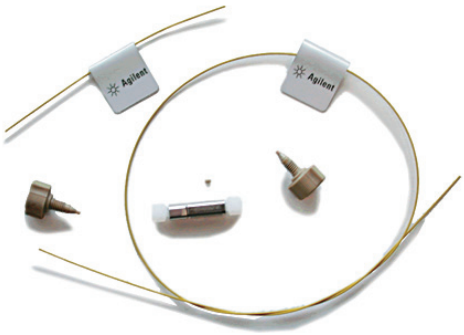
These integrated proteomics workflows include Agilent's advanced LC/MS platforms. With the addition of innovative, proteomics-specific sample preparation options and high-productivity software packages, Agilent is uniquely able to deliver complete, end-to-end solutions for all of your proteomics analysis needs.

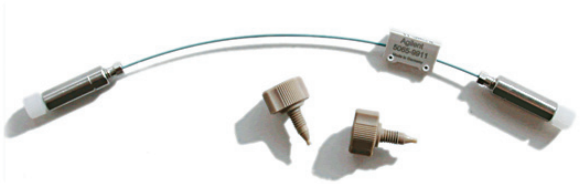
The Agilent HPLC-Chip/MS Proteomics Solution

Superior performance & flexibility for proteomics workflows

The Agilent HPLC-Chip ensures uncompromised chromatographic performance, allowing you to identify more proteins in complex samples. The HPLC-Chip's multi-layered, microfluidic architecture has fewer components and reduced path length for less sample loss and unsurpassed peak resolution. Integrated enrichment columns allow for selective concentration of targeted compounds, such as glycans. With this level of performance, you can work with complex mixtures, analyze limited sample amounts and detect subtle yet significant biological changes with confidence.

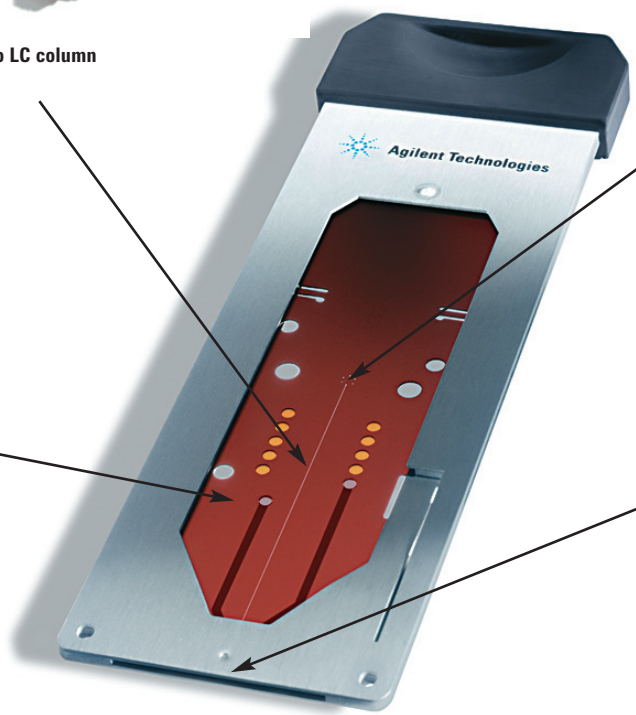
In addition to delivering superior separation performance and reproducibility, the innovative HPLC-Chip platform lets you quickly and easily switch between different proteomics methodologies, without the challenges of re-plumbing a nanoflow LC system.





Enrichment column, capillaries, fittings, frits

Nano LC column



High Voltage ESI Contact

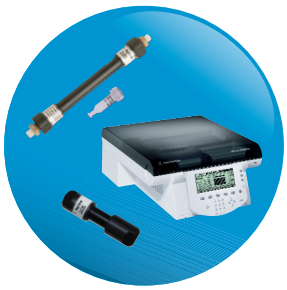
Nanospray emitter, emitter assembly and fittings only exposed while chip is in the LC/MS system.

The Agilent HPLC-Chip *eliminates tedious and complex nanoflow LC connections to deliver uncompromised chromatographic separations.*

To learn more about Agilent's proteomics workflow solutions, visit www.proteomics-lab.com. Or call toll-free, 800-227-9770 (U.S. and Canada).

End-to-end solutions for

Agilent offers an integrated suite of powerful tools that enables



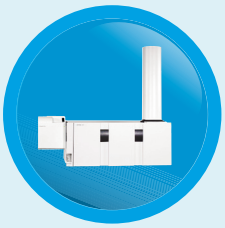
Sample Preparation

Separation

Protein Identification

Because proteins of interest are typically present at very low abundance, the analytical methods must be extremely sensitive.

The Agilent HPLC-Chip / 6520 Accurate Mass Q-TOF couples high-performance chromatography with fast scanning and highly specific mass spectrometry. Accurate mass MS/MS with high scan frequency enables a lower false positive rate for more confident protein ID.



Intact Protein Analysis

Full characterization of a particular protein of interest requires in-depth, accurate analysis of both the intact and digested forms.

MassHunter Bioconfirmation software enables very high-definition comparison between protein components, and is especially valuable when looking for minor protein isoform changes. Spectrum Mill software makes it easy to correlate protein digest data with extremely accurate intact molecular weight.

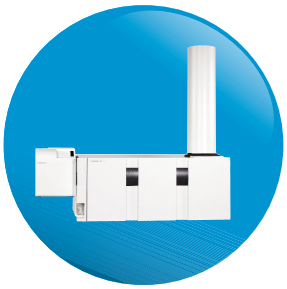
Glycan & Glycoprotein Analysis

Glycosylation and glycation play critical roles in cellular function.

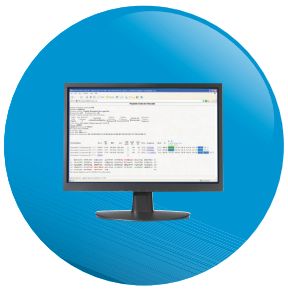
Agilent's novel Glycan HPLC-Chip selectively retains glycan species from complex mixtures. Coupling the Glycan HPLC-Chip with the 6520 Accurate Mass Q-TOF enables very high sensitivity combined with increased specificity.

your proteomics workflows

you to successfully prepare, separate, analyze, and achieve results.



Analysis



Results

Phospho-Protein Anaysis

The precise determination of phosphorylation sites within a protein is crucial to understanding cell regulation mechanisms.

Agilent's HPLC-Chip allows for precise separation of peptides which enables better fidelity of phosphopeptide analysis. The ETD (Electron Transfer Dissociation) function of the 6340 Ion Trap allows for more confident characterization.

Biomarker Discovery

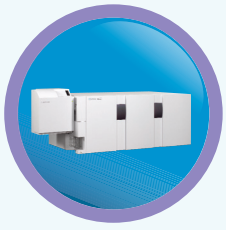
Protein biomarkers are usually present at low levels and within very complex matrices. Biomarker discovery presents both sample preparation and detection challenges.

Agilent MARS columns can remove up to 14 high-abundance proteins to unmask important, otherwise undetectable biomarkers. Further fractionation using the 3100 OFFGEL system reduces sample complexity. GeneSpring MS software enables comparison of complex samples to find potential biomarkers.

Quantitative Proteomics

For complete elucidation of biological mechanisms, proteins are now required to be accurately and routinely quantified.

For accurate, high-throughput "absolute" quantitation, the Agilent 6410 Triple Quadrupole MS/MS provides targeted MRM peptide quantitation at femtogram detection levels, as well as the necessary throughput and 24/7 day-after-day reliability.



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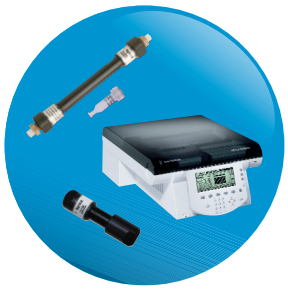
The Agilent HPLC-Chip/

Optimized preparation products, outstanding LC separation performance, and highly powerful software all combine to



Sample preparation tools that improve performance and consistency

3100 OFFGEL Fractionator

Agilent's 3100 OFFGEL Fractionator uses a novel isoelectric focusing technique to achieve excellent, highly reproducible pI-based fractionation. Unlike conventional gel-based techniques, the resulting fractions are recovered in liquid phase, for quicker, easier transfer to LC/MS.

Multiple Affinity Removal System

By reducing the number of proteins masking potential biomarkers, Agilent Multiple Affinity Removal system facilitates the discovery and identification of low-abundance proteins that may be biologically relevant.

Macroporous Reversed-phase (mRP) High-Recovery Protein Fractionation and Desalting LC Columns

In combination with Agilent's Multiple Affinity Removal System for immunodepletion of high-abundance proteins, mRP-CI8 and mRP-C8 columns provide better sample recovery than conventional RP HPLC columns.

Separation technology provides high sensitivity and resolution

1200 Series HPLC-Chip/MS

The Agilent HPLC-Chip eliminates tedious and complex nanoflow LC connections and delivers uncompromised chromatographic separations in a single, reusable microfluidic chip about the size of a microscope slide. Overall robustness, reliability, and ease of use are greatly improved. Agilent's continually growing portfolio includes HPLC-Chips for glycan and protein analyses, as well as MS calibration.

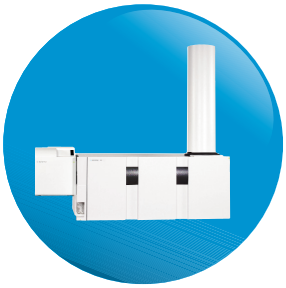
1200 Series Nanoflow LC

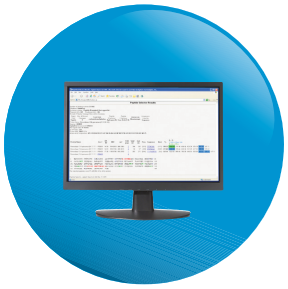
The Agilent 1200 Series Nanoflow LC lets you take full advantage of HPLC-Chip technology. The industry standard for reliable and robust nanoflow performance, the system incorporates Agilent's unique Electronic Flow Control (EFC) for constant flow delivery to the column independent of system backpressure.

The system is configured with both capillary and nanoflow pumping to allow full access to the power of the HPLC-Chip.

MS Proteomics Solution

technologies, exceptionally sensitive mass spectrometer
deliver unparalleled analysis of complex proteomic systems.





Accurate mass determination in both MS and MS/MS analyses

6000 Series LC/MS

With high sensitivity, superior resolving power, and excellent—highly reliable—mass accuracy, Agilent's LC/MS systems let you take advantage of the LC throughput gain of Agilent HPLC-Chip technology.

Agilent 6220 Accurate Mass TOF — Compact benchtop instrument offers exceptional analytical performance, including industry-leading 2-ppm mass accuracy.

Agilent 6520 Accurate Mass Q-TOF — Unmatched combination of mass accuracy, mass resolution, sensitivity, and in-spectrum dynamic range.

Agilent 6340 Ion Trap (with ETD) — Delivers robust, sensitive, data-dependent MS/MS that makes structural confirmation and sample identification faster and easier.

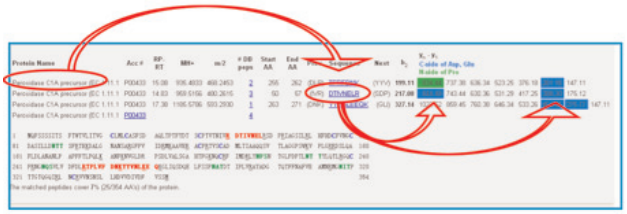
Agilent 6410 QQQ LC/MS — Routine femtogram detection levels, day-after-day reliability and extremely easy-to-use software, plus reliable MRM quantitation.

2100 Bioanalyzer Electrophoresis Detector

The most successful microfluidics-based platform available commercially, offering solutions for the analysis of proteins.

Software that helps turn MS data into biologically relevant information

The Agilent platform includes software solutions that streamline and simplify virtually every area of proteomics investigation.



***Spectrum Mill Peptide Selector software** enables the choice of peptides and MS/MS fragment ions for optimal MRM transitions.*

MassHunter Workstation provides an integrated, single point of instrument control and data acquisition quantitative analysis for Agilent's TOF, Q-TOF and QQQ LC/MS instruments.

GeneSpring MS is a unified, easy-to-use platform for mass spectral data normalization and comparison that helps you answer complex biological questions. Designed to integrate data and results from multiple applications, GeneSpring MS lets you easily import, normalize, compare and display LC/MS and other results from large sample sets.

MassHunter Spectrum Mill Protein Identification Software gives you a comprehensive suite of tools for processing MS and MS/MS spectra, determining protein identities and expression levels, and creating meaningful cross-sample and cross-experiment result summaries.

**To learn more about Agilent's proteomics workflow solutions,
visit www.proteomics-lab.com. Or call toll-free, 800-227-9770 (U.S. and Canada).**

The Agilent Value Promise—10 years of guaranteed value

In addition to continually evolving products, we offer something else unique to the industry—our 10-year value guarantee. The Agilent Value Promise guarantees you at least 10 years of instrument use from your date of purchase, or we will credit you with the residual value of that system toward an upgraded model.* Not only does Agilent ensure a safe purchase now, we help ensure your investment is as valuable to you in the long run.

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Should your Agilent instrument require service while covered by an Agilent service agreement, we guarantee repair or we will replace your instrument for free. No other manufacturer or service provider offers this level of commitment to keeping your laboratory running at maximum productivity.

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agilent_inquiries@agilent.com

Europe
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Asia Pacific
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