



Agilent and Stratagene Protein Analysis Portfolio

Our measure is your success.

products | applications | software | services



Agilent Technologies

A Broader Portfolio of Complementary Tools

Take advantage of the combined strength of Agilent and Stratagene protein analysis workflows

Whether you endeavor to understand complex biological processes, determine disease mechanisms, or speed the discovery of novel therapies, you need a broad portfolio of protein analysis tools. Tools that give you more speed, better accuracy, and greater control in gene manipulation, protein expression, novel protein detection, and *in vivo* studies of protein interactions.

From the fastest, most efficient site-directed mutagenesis kits to the exceptional analytical performance of LC/MS systems, we offer a comprehensive range of solutions to help you elucidate protein function, protein structure, and protein-protein interactions and decipher complicated cell signaling pathways.

Agilent and Stratagene have become one company, bringing you a broader portfolio of complementary tools for protein analysis. A portfolio to strengthen your research endeavors.

Protein Engineering and Production

Manipulate genes with site-directed mutagenesis and optimize expression of recombinant proteins with vector systems for most of your expression needs.

- Site-Directed Mutagenesis
- Protein Production Kits

Protein Functional Assays

Simplify detection without interfering with protein function, or better detect interacting partners to analyze complex protein aggregates.

- Mammalian Expression Systems
- Mammalian TAP Systems

Protein Separation and QC

Take advantage of a well-rounded suite of systems, columns and kits for separation and fractionation of intact proteins or peptides.

- LC Systems and Columns
- OFFGEL Electrophoresis
- Agilent 2100 Bioanalyzer
- Capillary Electrophoresis

Intact Protein and Structural Analysis

Achieve in-depth and accurate analysis of intact and digested proteins with the exceptional analytical performance and enhanced resolution of Agilent's LC/MS systems.

- LC/MS

Protein Engineering and Production

- **Stratagene QuikChange Site-Directed Mutagenesis Kits** — Fast, efficient, site-directed gene manipulation
- **Stratagene BL21 CodonPlus Competent Cells** — High-level expression of eukaryotic proteins in *E. coli*
- **Stratagene ArcticExpress Competent Cells** — Low growth temperatures promote increased yield and biological relevance of protein produced in *E. coli*

Stratagene QuikChange Site-Directed Mutagenesis

With over 15,000 citations, QuikChange is the most widely used site-directed mutagenesis technology for modifying a genetic sequence prior to expression. The technology is capable of making single base-pair mutations, large insertions or deletions of sequence, or multiple site mutations with degenerate bases to create a library of novel constructs.

Stratagene Protein Engineering	Description	Quantity	Part Number
Engineering			
QuikChange Lightning Site-Directed Mutagenesis Kit	Fastest high-fidelity site-directed mutagenesis available; suitable for large plasmids >8 kb	10 reactions	210518
QuikChange Multi Site-Directed Mutagenesis Kit	Introduce multiple point mutations simultaneously, engineer mutant clone collection libraries	10 reactions	200515
Stratagene Protein Production	Description	Quantity	Part Number
BL21-CodonPlus-RIL Competent Cells	Extra copies of argU, ileY, leuW tRNA genes; for extremely toxic proteins, use with lambda CE6 for introduction of the T7 RNA polymerase	10 x 0.1 mL	230240
BL21-CodonPlus (DE3)-RIL Competent Cells	Extra copies of argU, ileY, leuW tRNA genes; T7 RNA polymerase under control of the lacUV5 promoter	10 x 0.1 mL	230245
BL21-CodonPlus-RP Competent Cells	Extra copies of argU and proL tRNA genes; for extremely toxic proteins, use with lambda CE6 for introduction of the T7 RNA polymerase	10 x 0.1 mL	230250
BL21-CodonPlus (DE3)-RP Competent Cells	Extra copies of argU and proL tRNA genes; T7 RNA polymerase under control of the lacUV5 promoter	10 x 0.1 mL	230255
BL21-CodonPlus (DE3)-RIL-X Competent Cells	Extra copies of argU, ileY, and leuW tRNA genes; methionine label for metabolic labeling	10 x 0.1 mL	230265
BL21-CodonPlus (DE3)-RP-X Competent Cells	Extra copies of argU and proL tRNA genes; methionine label for metabolic labeling	10 x 0.1 mL	230275
BL21-CodonPlus (DE3)-RIPL Competent Cells	Extra copies of argU, ileY, leuW, and proL tRNA genes; T7 RNA polymerase under control of the lacUV5 promoter	10 x 0.1 mL	230280
ArcticExpress Competent Cells	Enhanced protein folding and solubility of expressed proteins	10 x 0.1 mL	230191
ArcticExpress (DE3) Competent Cells	Enhanced protein folding and solubility of expressed proteins with T7 RNA polymerase under control of the lacUV5 promoter	10 x 0.1 mL	230192
ArcticExpress (DE3) RIL Competent Cells	Enhanced protein folding and solubility of expressed proteins AT-rich genomes; T7 RNA polymerase under control of the lacUV5 promoter	10 x 0.1 mL	230193
ArcticExpress (DE3) RP Competent Cells	Enhanced protein folding and solubility of expressed proteins with GC-rich genomes; T7 RNA polymerase under control of the lacUV5 promoter	10 x 0.1 mL	230194

To view our complete collection of QuikChange Kits, visit: www.stratagene.com/quikchange

Protein Functional Assays

Stratagene StrataClone Mammalian Expression Systems

Stratagene StrataClone Mammalian Expression Vector System provides the highest accuracy in PCR amplification, combined with easy, reliable, and affordably priced topoisomerase-based cloning and expression. Simply add your PCR product to the vector mix, incubate for 5 minutes at room temperature, and transform into competent cells. With guaranteed greater than 95% efficiency, you are sure to get the right clone the first time, every time. Reliable insertion of a full-length sequence ensures high-level intact protein expression under a CMV promoter. With N- and C-terminal FLAG® and c-Myc tags, you can easily identify and perform protein functional studies without adversely impacting native protein structure or function.

Stratagene InterPlay Mammalian Tandem Purification (TAP) Systems

Obtain highly pure protein complexes for downstream analysis by LC/MS with the Stratagene InterPlay Mammalian TAP System. The protein of interest is fused to two affinity tags: a streptavidin-binding peptide (SBP) and a calmodulin-binding peptide (CBP). The interacting protein is co-purified in a two-step purification process with a gentle wash and elution, ensuring recovery of ultra-pure protein complexes. The Mammalian Interplay System can be delivered to cells via standard transfection reagents. Alternatively, to achieve a broader range of gene delivery with higher titers, use the Adenoviral Interplay System.

Stratagene Protein Expression and Interaction	Description	Format	Part Number
StrataClone Mammalian Untagged Expression System	Topoisomerase-based cloning with rapid 5-minute PCR ligation expression via pCMV promoter	20 reactions	240228
StrataClone Mammalian N-Terminal FLAG Expression System	Topoisomerase-based cloning with rapid 5-minute PCR ligation; expressed fusion protein contains three copies of FLAG tag at N-terminus	20 reactions	240229
StrataClone Mammalian C-Terminal FLAG Expression System	Topoisomerase-based cloning with rapid 5-minute PCR ligation; expressed fusion protein contains three copies of FLAG tag at C-terminus	20 reactions	240230
StrataClone Mammalian N-Terminal c-Myc Expression System	Topoisomerase-based cloning with rapid 5-minute PCR ligation; expressed fusion protein contains three copies of c-Myc tag at N-terminus	20 reactions	240231
StrataClone Mammalian C-Terminal c-Myc Expression System	Topoisomerase-based cloning with rapid 5-minute PCR ligation; expressed fusion protein contains three copies of c-Myc tag at C-terminus	20 reactions	240232
GeneJammer Transfection Reagent	Polyamine-based transfection reagent accommodate a broad range of cell types with minimal impact on cell viability	4 x 1 mL	240131
InterPlay Mammalian C-Terminal TAP System	Vectors, resins and buffers for mammalian tandem affinity purification of interacting proteins. Suitable for downstream analysis by LC/MS	1 kit	240104
InterPlay Adenoviral C-Terminal TAP System	Vectors, resins and buffers for adenoviral gene delivery and tandem affinity purification of interacting proteins; suitable for downstream analysis by LC/MS	1 kit	240215
InterPlay Mammalian N-Terminal TAP System	Vectors, resins and buffers for mammalian tandem affinity purification of interacting proteins; suitable for downstream analysis by LC/MS	1 kit	240103
InterPlay Adenoviral N-Terminal TAP System	Vectors, resins and buffers for adenoviral gene delivery and tandem affinity purification of interacting proteins; suitable for downstream analysis by LC/MS	1 kit	240213
InterPlay TAP Purification Kit	Resins and buffers required to perform tandem affinity purification	1 kit	240107
InterPlay TAP Purification Buffers Kit	Buffers required to perform tandem affinity purification	1 kit	240099
MS-Grade Calmodulin Resin	Calmodulin resin qualified for mass spectrometry	0.625 mL	240106
Streptavidin Resin	Streptavidin resin for purification	1.25 mL	240105

Protein Separation and QC

Systems and Columns for Protein and Peptide Analysis

- **Agilent 1200 Series Liquid Chromatography (LC) Systems** — Flexible and scalable to meet your application requirements
- **Agilent ZORBAX and Poroshell LC Columns** — Reproducible reverse phase protein and peptide separation
- **Agilent 2100 Bioanalyzer** — The most successful microfluidics platform replaces SDS-PAGE analysis of protein samples
- **Agilent Capillary Electrophoresis System** — Renowned for its high efficiency and resolution, this is an established technique in many laboratories for the quality control of proteins

Agilent ZORBAX Capillary and Nano Columns

These columns are ideal for very sample-limited applications, because they provide enhanced sensitivity by reducing on-column sample dilution.

Agilent Poroshell 300SB-C18, C8, C3 and 300Extend

Agilent Poroshell columns are ideal for fast separations of proteins and peptides. The unique particle allows for fast flow rates to be used, while maintaining sharp, efficient peaks.



Agilent LC Systems		
1200 Series Isocratic LC System	To view our collection of 1200 Series LC Systems, visit: www.agilent.com/chem/lc	
1200 Series Binary LC System		
1200 Series Quaternary LC System		
1200 Series Preparative LC System		
Protein and Peptide Separation for LC/MS	Description	Part Number
ZORBAX 300SB-C18 Capillary Column	3.5µm, 0.3 x 150mm	5064-8267
ZORBAX 300SB-C18 Nanocolumn	3.5µm, 0.075 x 50 mm	5065-9924
ZORBAX 300SB-C8 Capillary Rapid Resolution	3.5µm, 0.3 x 150mm	5065-4460
ZORBAX 300SB-C8 Nanocolumn	3.5µm, 0.075 x 50 mm	5065-9923
Poroshell 300SB-C18	5µm, 1 x 75 mm	661750-902
Poroshell 300SB-C3	5µm, 1 x 75 mm	661750-909
Poroshell 300SB-C8	5µm, 1 x 75mm	661750-906
Poroshell 300Extend	5 µm, 1x75 mm	671750-902
Agilent 2100 Bioanalyzer	Description	Part Number
2100 Bioanalyzer Desktop System	Includes 2100 Bioanalyzer with HP/Compaq desktop PC, printer, 2100 expert software, vortex mixer, accessories, without cartridge and license	G2940CA
2100 Bioanalyzer Electrophoresis Set	Includes electrode cartridge for the bioanalyzer instrument, license key for electrophoresis assays, test chip bundle and start-up service	G2947CA
High Sensitivity Protein 250 Kit	Includes reagents, 10 chips, 1 cleaning chip, 1 syringe, reagent kit guide and labeling protocol, and all reagents for labeling and separation, ladder and markers	5067-1575
Protein 230 Kit	For sizing and analysis of proteins up to 230 kDa; Kit includes reagents, supplies, 25 chips, 1 cleaning chip, 1 syringe, reagent kit guide, ladder and markers	5067-1517
Protein 80 Kit	For sizing and analysis of proteins up to 80 kDa; Kit includes reagents, supplies, 25 chips, 1 cleaning chip, 1 syringe, reagent kit guide, ladder and markers	5067-1515
Capillary Electrophoresis	Description	Part Number
Capillary Electrophoresis System	Includes Agilent CE instrument, CE ChemStation software, HP computer, HP LaserJet printer, cassette, accessory kit, installation qualification kit, start-up kit	G1602A

For full range of columns, visit: www.agilent.com/chem/columns

Protein Separation and QC

Proteomics Sample Preparation: Depletion and Fractionation Tools

- **Agilent OFFGEL Fractionator** — Performs pI-based protein and peptide fractionation with liquid-phase recovery, for easy transfer to downstream techniques such as LC/MS

Agilent Multiple Affinity Removal System

Agilent's Multiple Affinity Removal System enables the identification and characterization (2-D gel electrophoresis and LC/MS) of high-value, low abundant proteins and biomarkers found in serum, plasma, and other biological fluids.

Agilent mRP-C18 High-Recovery Protein Columns

The mRP (macroporous reverse phase) C18 High-Recovery Protein Column is designed for high-recovery, high-resolution protein separation, fractionation, and simultaneous desalting of complex protein samples (like immunodepleted serum or plasma proteins). The mRP column offers extremely high recovery and high loading when compared to conventional reverse-phase HPLC columns.



OFFGEL	Description	Part Number
3100 OFFGEL Fractionator	Fractionation of protein or peptide samples, includes local controller, pre-installed software and default methods	G3100AA
Starter Kit	Kit includes IPG gel strips, well frames, cover seals, electrode pads, cover fluid and reagents and all components for fractionation and in-liquid recovery of 12 samples: three samples pH 3-10, 12 fractions; three samples pH 3-10, 24 fractions, three samples, pH 4-7, 12 fractions; three samples pH 4-7, 24 fractions	5188-6444
Multiple Affinity Removal Columns	Description	Part Number
Multiple Affinity Removal Column — Human 14	Removes 14 abundant proteins from human serum/ plasma 4.6 x 100mm column	5188-6558
Multiple Affinity Removal Spin Cartridge — Human 14	Removes 14 abundant proteins from human serum/ plasma , spin cartridge	5188-6560
Multiple Affinity Removal Reagent Kit	Buffer kit includes buffers and spin filters and concentrators	5185-5986
Multiple Affinity Removal Spin Cartridge Reagent Kit	Starter kit includes buffers, spin filters and concentrators, Luer-Lok syringes and adaptors, microtubes, caps and plugs	5188-5254
Intact Protein Separation/Fractionation	Description	Part Number
mRP-C18 High-Recovery Protein Column	2.1mm x 75mm	5188-6511
mRP-C18 High-Recovery Protein Column	0.5mm x 100mm	5188-6510
mRP-C18 High-Recovery Protein Column	4.6 x 50mm	5188-5231

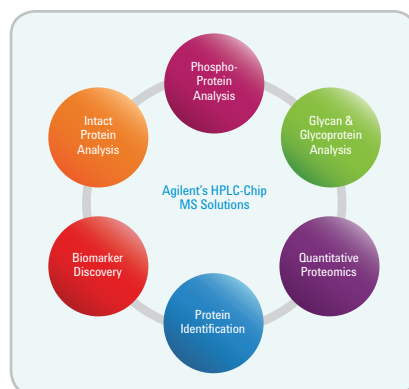
Intact Protein and Structural Analysis

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. Agilent's HPLC-ChIP Mass Spectrometry systems sit at the center of an integrated proteomics workflow that provides the highest analytical performance with unprecedented plug-and-play flexibility.

• **Agilent 1200 Series Nanoflow and HPLC-Chip/MS Systems** — Highest sensitivity and easy-to-use systems, for MassHunter (MS) sample separation and introduction into the MS

• **Agilent 6000 Series LC/MS Systems** — More sensitive target protein analysis and better identification of unknowns:

- High-performance protein identification with 6530 Accurate-Mass Q-TOF LC/MS, for more confident protein identifications and lower false positives
- Intact protein analysis with 6220 Accurate-Mass TOF LC/MS for full characterization of a particular protein of interest requires in-depth, accurate analysis of both the intact and digested forms
- Analyze post-translational modifications such as phosphorylation and glycosylation with the 6340 ion trap LC/MS system
- Quantitate and validate protein biomarkers at the femtogram level with the 6460 triple quad LC/MS system



Agilent Systems	Description	Part Number
1200 Series Capillary LC System	To view our collection of 1200 Series LC Systems, visit: www.agilent.com/chem/lc	
1200 Series Nanoflow LC System		
1200 Series HPLC-Chip MS		
6220 Accurate Mass TOF LC/MS System Bundle	Includes 6220 Accurate-Mass TOF mass spectrometer, dual electrospray source, MassHunter Workstation data acquisition and analysis software, 2 additional off-line data analysis licenses, installation and familiarization time and 3-day training class	G6220AA
6530 Accurate Mass Q-TOF LC/MS System Bundle	Includes 6530 Accurate-Mass Q-TOF mass spectrometer, dual spray ESI, MassHunter Workstation, 2 data analysis software licenses, installation and familiarization time and 3-day training course	G6530AA
6340 Ion Trap with ETD LC/MS System Bundle	Includes 6340 ion trap mass spectrometer, electrospray ion source, Agilent ChemStation software for data acquisition and data analysis. Installation and familiarization included	G2474AA
6460 Triple Quad LC/MS System Bundle	Includes 6460 triple quad mass spectrometer, API-ES source, MassHunter Workstation software, installation and familiarization, including one place in LCMS training course at Agilent Training Center	G6460AA

For more information, visit: www.proteomics-lab.com

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