Agilent
Trusted Answers

Molecular and Synthetic Biology Solutions

Empowering the synthetic biology revolution
— from molecules to measurement

The Next-Generation of Molecular Biology

The foundational techniques of molecular biology are changing. Synthetic biology approaches to engineering biological systems and organisms have driven innovations in both DNA synthesis and assembly. Agilent's products bring these novel tools into the reach of every molecular biology lab, improving the speed and reliability while reducing the cost of next-gen cloning and mutagenesis.

Stratagene LABS. Agilent-Backed Quality.

Cutting-edge molecular and synthetic biology solutions to accelerate your research.

Since 1984, Stratagene products have been used throughout the academic, industry and government research sectors in fields spanning molecular biology, genomics, proteomics, drug discovery and toxicology. In 2007, Agilent Technologies integrated Stratagene's labs, which now form the primary research and development branch of Agilent's genomics division.

Agilent

STRATAGENE
An Agilent Technologies Company

Molecular and Synthetic Biology Solutions

Empowering the synthetic biology revolution—from molecules to measurement.

Contents

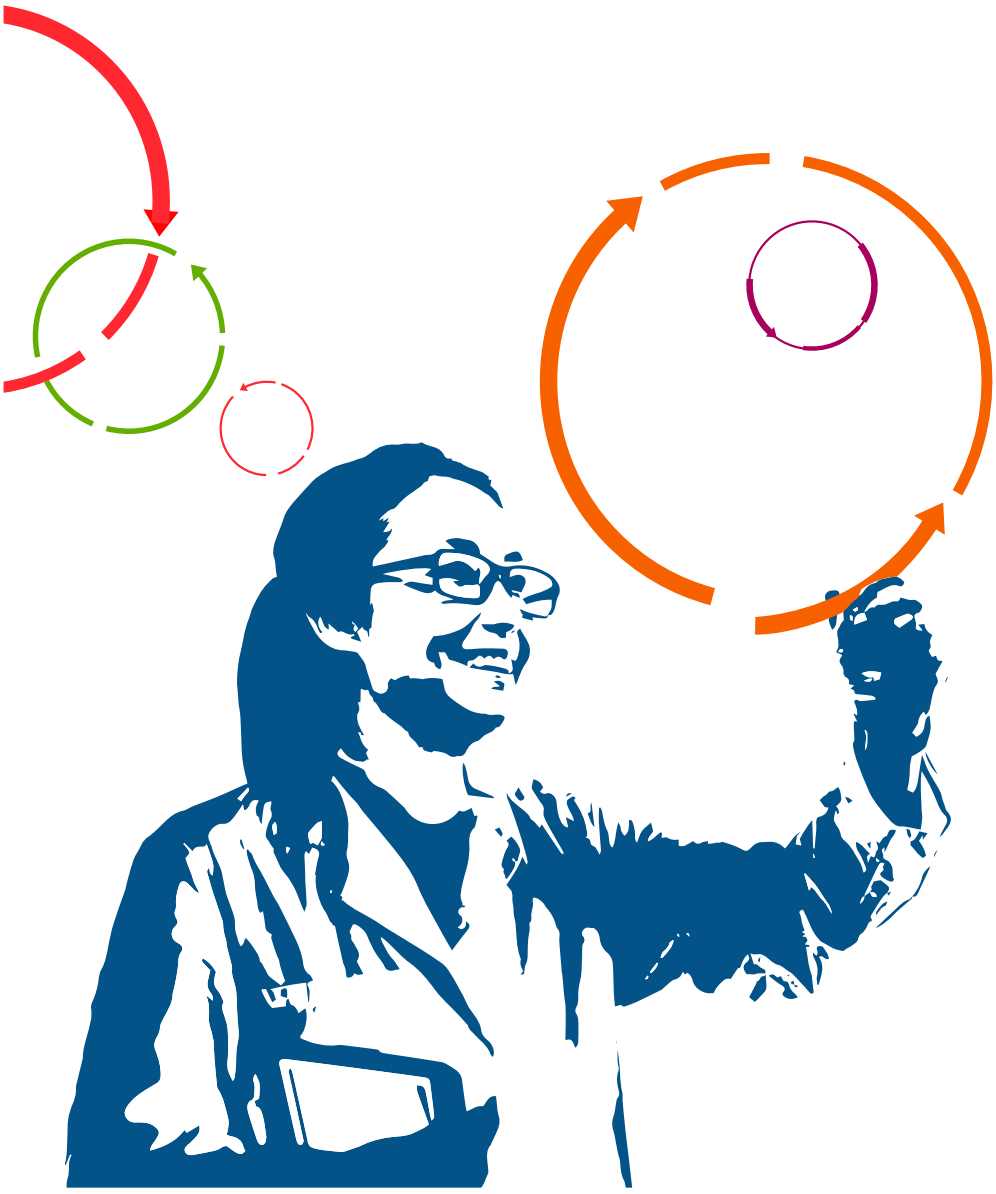
SureVector Next-Gen Cloning Kits

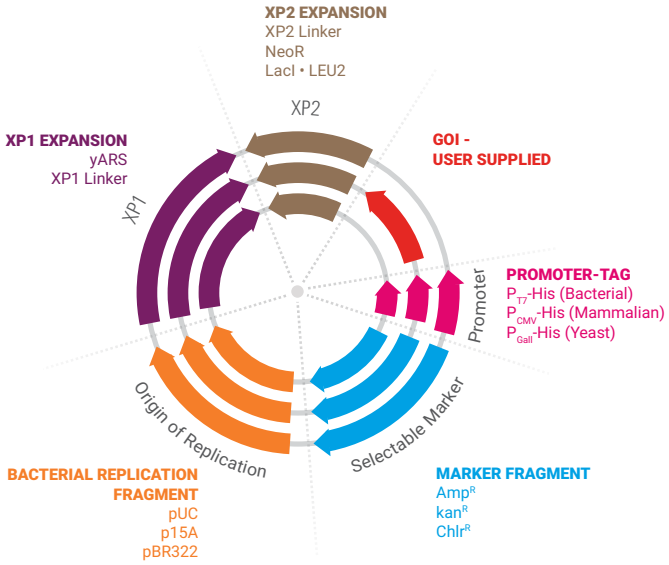
Your Vision. Your Vectors.

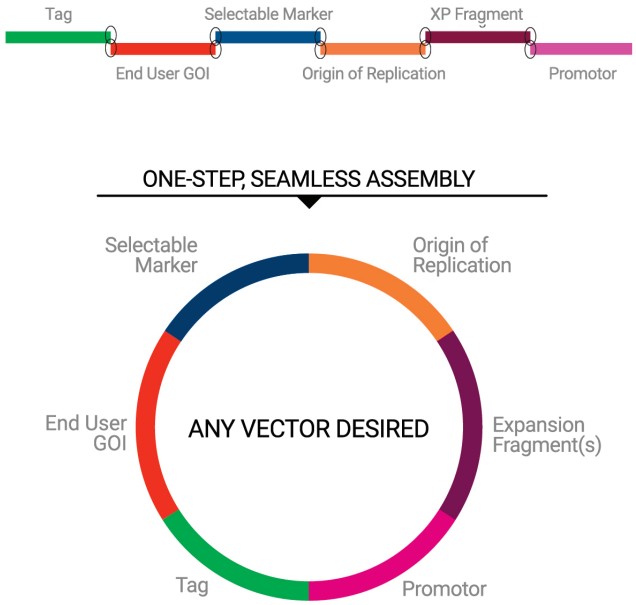
SureVector, the world's first modular vector system, harnesses the power of synthetic biology to provide quick, user-friendly customization of cloning and expression vectors. In contrast to alternative next-gen cloning technologies, SureVector offers a unique set of standard parts that can be assembled into an endless supply of custom vectors—all with a validated assembly system you can count on.

How does SureVector work?

A single SureVector kit contains a set of DNA fragments which are the functional "parts" of most cloning and expression vectors. These parts can be assembled into any combination desired, resulting in customized vectors. The proprietary SureVector enzymes can assemble up to seven fragments into a circularized plasmid in a single, 20-minute reaction.



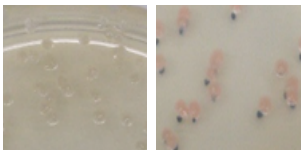




Fast, Flexible, Reliable.

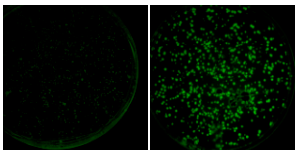
- **Rapid custom vector generation**
  Less than a day from design to vector, compared to four weeks for custom vector services
- **Reliable and precise assembly**
  SureVector is extensively validated to ensure standard parts can be interchanged without loss of functionality
- **More flexible than traditional systems**
  Assemble new vectors in your lab as experimental requirements change, rather than ordering a new one
- **Control your experiments**
  Take control of your experiments by troubleshooting your DNA assembly—not your service provider's

Multi-Organism Functionality



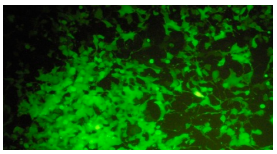
Bacteria

Bacterial expression using SureVector's T7 promoter. Pink colonies on the right express fluorescent protein when T7 is present, while negative controls (left) do not.



Yeast

The presence of LEU2 gene in the SureVector expansion slot (right) allows yeast to grow on leucine deficient media.



Mammalian

Stable mammalian cell lines using the neomycin resistant fragment from the SureVector kit.

SureVector Next-Gen Cloning Kits (Continued)

Agilent SureVector System Fragments & Kit Numbers

	E. coli	Mammalian	Yeast
Promoters	T7 (G7515A-B, G7518B-E)	CMV (G7516A-B)	GAL1 (G7517A-B)
	Tac (G7515A-B, G7518B-C)	SV40 (G7516A-B)	CUP1 (G7517A-B)
	Rhamnose (G7515A-B, G7518C)	EF-1α (G7516A-B)	ADH1 (G7517A-B)
Tags	CBP (G7515A-B, G7518E)	3xFLAG (G7516A-B)	3xFLAG (G7517A-B)
	DsbA (N-term only) (G7515A)	GFP (G7516A-B)	GFP (G7517A-B)
	GST (N-term only) (G7515A, G7518D)	3xHA (G7516A-B)	3xHA (G7517A-B)
	HA (C-term only) (G7515B)	6xHis (G7516A-B)	6xHis (G7517A-B)
	6xHis (G7515A-B, G7518B-C)	c-Myc (G7516A-B)	c-Myc (G7517A-B)
	MBP (N-term only) (G7515A, G7518D)	SBP (G7516A-B)	SBP (G7517A-B)
	c-Myc (C-term only) (G7515B)		
	SBP (G7515A-B, G7518D-E)		
	Thioredoxin (C-term only) (G7515B, G7518E)		
Bacterial Selection	AmpR (G7514A, G7518A-E)	AmpR (G7514A, G7518A-E)	AmpR (G7514A, G7518A-E)
	CamR (G7514A, G7518A)	CamR (G7514A, G7518A)	CamR (G7514A, G7518A)
	KanR (G7514A, G7518A)	KanR (G7514A, G7518A)	KanR (G7514A, G7518A)
Bacterial Origins of Replication	pUC (G7514A, G7518A-E)	pUC (G7514A, G7518A-E)	pUC (G7514A, G7518A-E)
	p15A (G7514A)	p15A (G7514A)	p15A (G7514A)
	pBR322 (G7514A)	pBR322 (G7514A)	pBR322 (G7514A)
XP1 Fragments	XP1 (G7514A, G7518A-E)	XP1 (G7514A, G7518A-E)	yARS (G7514A)
			XP1 (G7514A, G7518A-E)
XP2 Fragments	LacI (G7514A, G7518A-E)	Blasticidin (G7516A-B)	URA3 (G7517A-B)
	XP2 (G7514A)	Hygromycin (G7516A-B)	HIS3 (G7517A-B)
		Puromycin (G7516A-B)	Hygromycin (G7517A-B)
		NeoR (G7514A)	LEU2 (G7514A)
		XP2 (G7514A)	XP2 (G7514A)
Promoter-Tag Fusions	T7-HIS6 (G7514A, G7518A-B, G7518D)	CMV-HIS6 (G7514A)	GAL1-HIS6 (G7514A)

VWR SureVector System Fragments & Kit Numbers*

	E. coli	Mammalian	Yeast
Promoters	T7	CMV	GAL1
	Tac	SV40	CUP1
	Rhamnose	EF-1α	ADH1
Tags	CBP	3xFLAG	3xFLAG
	DsbA (N-term only)	GFP	GFP
	GST (N-term only)	3xHA	3xHA
	HA (C-term only)	6xHis	6xHis
	6xHis	c-Myc	c-Myc
	MBP (N-term only)	SBP	SBP
	c-Myc (C-term only)		
	SBP		
	Thioredoxin (C-term only)		
Bacterial Selection	AmpR	AmpR	AmpR
	CamR	CamR	CamR
	KanR	KanR	KanR
Bacterial Origins of Replication	pUC	pUC	pUC
	p15A	p15A	p15A
	pBR322	pBR322	pBR322
XP1 Fragments	XP1	XP1	yARS
			XP1
XP2 Fragments	LacI	Blasticidin	URA3
	XP2	Hygromycin	HIS3
		Puromycin	Hygromycin
		NeoR	LEU2
		XP2	XP2
Promoter-Tag Fusions	T7-HIS6	CMV-HIS6	GAL1-HIS6

* Quote Available on Request – Contact your VWR Rep

Mutagenesis Products

Efficiency Without Compromise

From rational design to random mutations, Agilent offers mutagenesis solutions for any application. Agilent offers the only widely available commercial technology that is not PCR based, so you don't have to sacrifice error rate for efficiency.

Market-leading QuikChange Mutagenesis

QuikChange kits have provided researchers with a fast, easy and efficient non-PCR method to reliably perform site-directed mutagenesis since 1996. Other commercially-available kits utilize PCR-based techniques, which can propagate errors with each successive round of thermal cycling. The QuikChange method uses a linear amplification strategy with only the parental strand serving as the DNA template. Combining this with our highest fidelity polymerases leads to a significant reduction in unwanted second-site errors. The existence of such errors is likely to complicate and delay downstream screening and analysis.

QuikChange Lightning Multi

- Fast, reliable and easy QuikChange protocol
- Mutate up to three sites simultaneously using a single QuikChange reaction

QuikChange Lightning

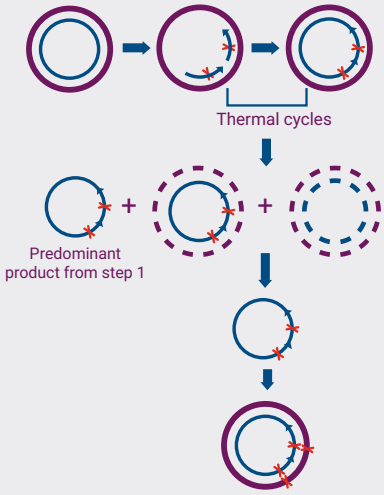
- 75% reduction in thermocycling time compared to original QuikChange enzyme blend
- More efficient with improved colony yields
- >80% mutation efficiency for both short and long templates (up to 14 kb)

GeneMorph II

- More uniform mutational spectrum when performing error-prone PCR
- GeneMorph II kits utilize Mutazyme II DNA polymerase, a novel error prone PCR enzyme blend, with equivalent mutation rates at As and Ts vs. Gs and Cs

The 'Lightning Advantage'

The QuikChange Lightning Kit contains specially engineered enzymes that have been designed to shorten the time necessary to complete our signature 3-step protocol. Extension times for the thermal cycling process have been reduced by 75% and digestion of the non-mutated parental template has been decreased to only five minutes.



QuikChange Lightning Multi

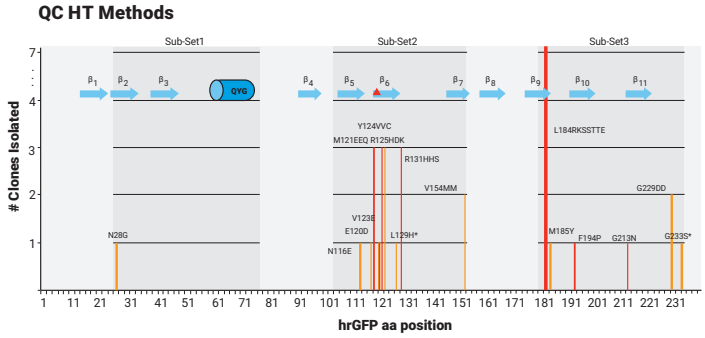
1. **Mutant Strand Synthesis**
   Perform thermal cycling to:
   - Denature DNA template
   - Anneal mutagenic primers (all primers bind to the same strand)
   - Extend primers and ligate nicks with QuikChange Multi enzyme
2. **Dpn I Digestion of Template**
   - Digest methylated and hemimethylated DNA with Dpn I
3. **Transformation**
   Transform mutated ssDNA into XL10-Gold ultracompetent cells, which synthesize the complementary strand

QuikChange HT Protein Engineering System

QuikChange technology meets high-throughput DNA synthesis to provide access to rationally-designed oligo libraries for protein engineering applications. The QuikChange HT Protein Engineering System provides rapid resolution of structural and functional questions by creating libraries of rationally-designed mutants for applications such as single amino acid scanning, site saturations scanning or targeted combinatorial mutagenesis.

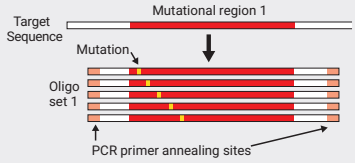
Key Features:

- Rapidly generate a rational design library of protein variants—less than a full day of hands-on time compared to weeks of waiting for a gene variant library
- Reduced cost of library generation—only pennies per mutant compared to $20 or more for gene variant libraries

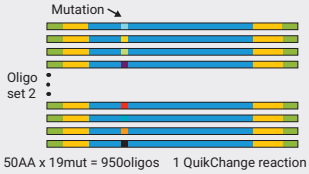


An example of the QuikChange HT kit applied to engineering of a GFP variant with enhanced brightness. Using site saturation mutagenesis yielded several beneficial mutations.

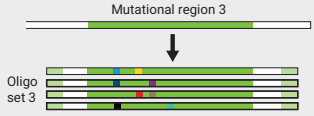
Use QuikScan1 to determine relevant stability: Separately replaces each amino acid in the wild type mutational region with a particular amino acid. Often used for Alanine scanning to quickly identify key functional or structural amino acids.



Use QuikScan19 to identify single codon replacements that improve binding, function or stability: Codon saturation scanning, systematically replaces each amino acid in the wild type mutational region with all 19 other amino acids, resulting in 19 mutagenic oligos for each amino acid position in the mutational region.



Use QuikCombine to discover a multisite mutant with improved structure, function and stability: Combine multiple mutants in groups of 1–4 position with defined variation at each site. Make up to $1.2x10^4$ libraries for a single 50AA set or combine a few identified variants and validate functional relevance.



Three possible mutational strategies using QuikChange HT: Alanine-scanning, site saturation scanning and combinatorial mutagenesis.

Product	Uses	AGL Cat. #	VWR Cat. #
QuikChange Mutagenesis			
QuikChange Lightning Multi	Use for up to 3 mutations simultaneously, 10 or 30 reaction kits	210514, 210516	**97066-322, 97066-326**
QuikChange Lightning	Single site mutagenesis, 10 or 30 reaction kits	210518, 210519	**99903-744, 99903-746**
QuikChange HT Protein Engineering System			
QuikChange HT	Use for targeting up to 10 different 50 amino acid long regions in a protein	G5900A	**76193-646**
QuikChange HT	Use for targeting up to 20 different 50 amino acid long regions in a protein	G5900B	**76193-648**
QuikChange HT	Use for targeting up to 10 different 67 amino acid long regions in a protein	G5901A	**76193-650**
QuikChange HT	Use for targeting up to 20 different 67 amino acid long regions in a protein	G5901B	**76193-652**
Random Mutagenesis			
GeneMorph II	Mutagenic polymerase for balanced random mutagenesis	200550, 200552	**99900-616, 99900-618**

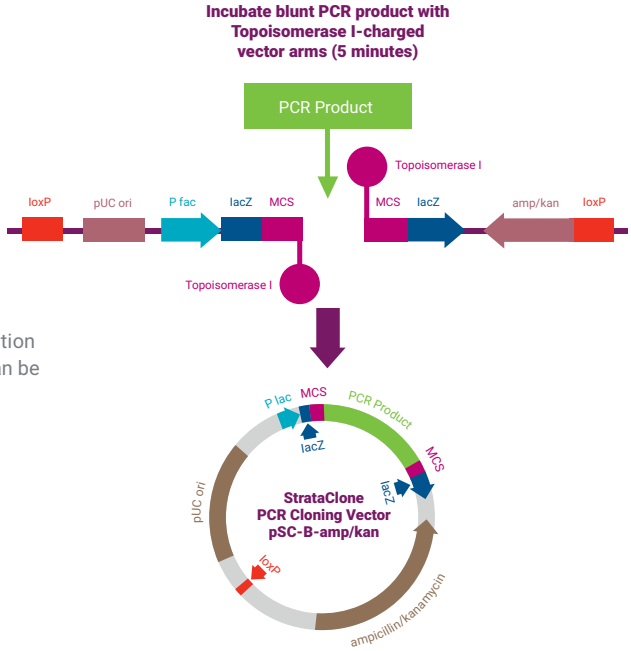
Specialty Cloning Products

A Solution for Every Situation

When you have a difficult cloning project, Agilent offers everything from a traditional topoisomerase based kit to a huge selection of catalog vectors for any application.

StrataClone PCR Cloning Kit

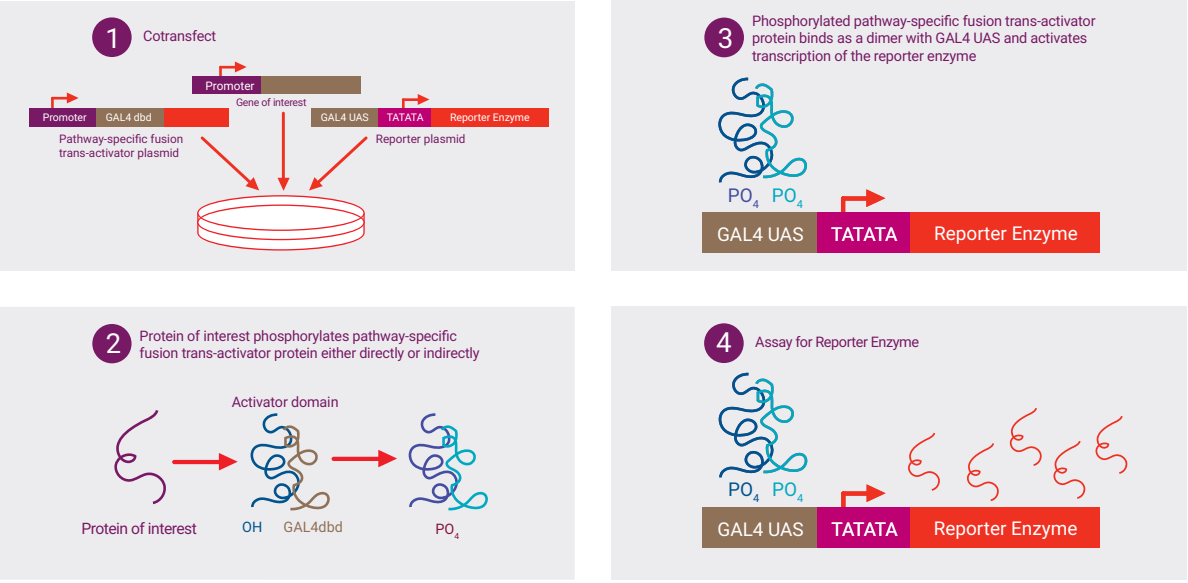
The StrataClone PCR Cloning Kit allows high-efficiency, 5-minute cloning of PCR products at room temperature, using the efficient DNA rejoining activity of DNA topoisomerase I and the DNA recombination activity of Cre recombinase. These kits are available for both blunt-end and UA cloning.



The blunt end StrataClone kit is perfect for use with our new Cas9 programmable restriction enzyme kit. Cas9 can be used to produce a linear fragment of DNA with blunt ends that can be rapidly cloned into the StrataClone vector.

PathDetect *Cis* and *Trans*-Reporting Systems

Determine if a gene product or compound activates pathways leading to specific enhancers with our PathDetect *Cis* and *Trans*-Reporting systems.



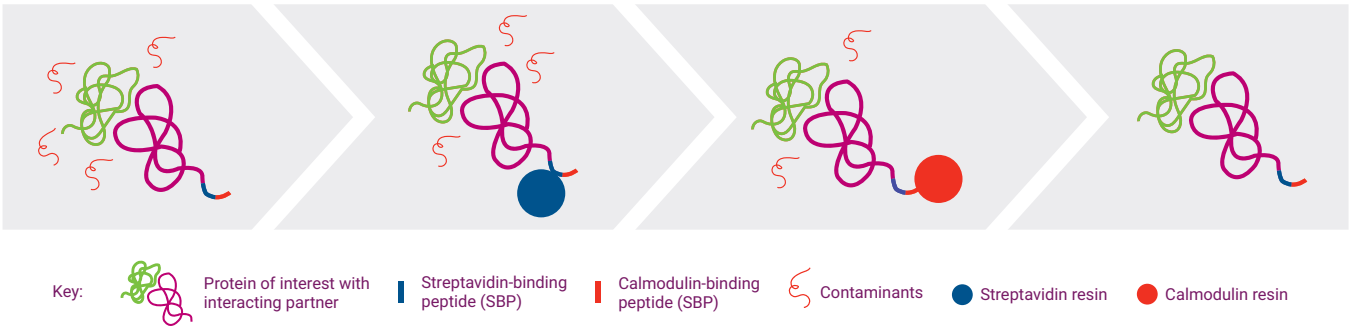
The PathDetect in vivo signal transduction pathway *trans*-reporting system.

InterPlay TAP Systems for Protein-Protein Interactions

The InterPlay Mammalian TAP System allows you to recover interacting proteins from mammalian cells. Tandem affinity purification yields your tagged protein and interacting proteins using gentle washing and small molecule elution conditions.

Two Easy Purification Steps

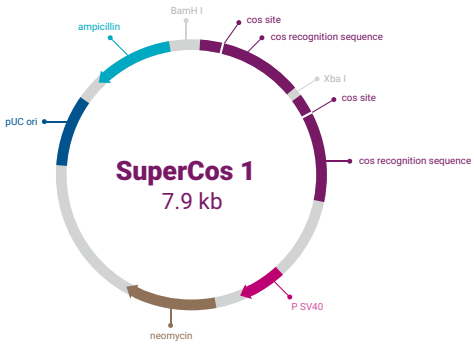
To purify proteins with the TAP protocol, apply the mammalian cell lysate to the streptavidin resin, then elute using biotin, and apply that eluate to a calmodulin resin. Once you elute with EGTA, you will get exceptionally clean proteins.



Specialty Vectors

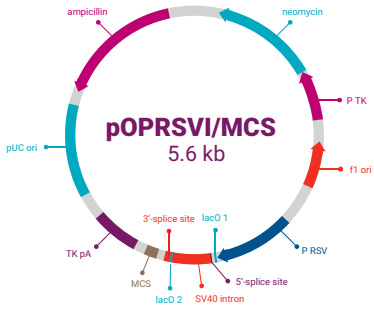
SuperCos 1

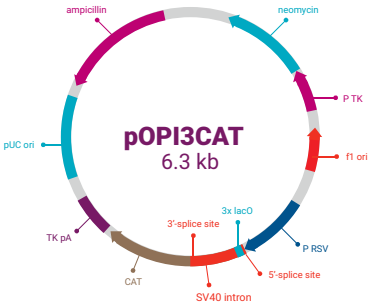
SuperCos 1 is a novel, 7.9 kb cosmid vector that contains bacteriophage promoter sequences flanking a unique cloning site.



LacSwitch II

The LacSwitch II inducible mammalian expression system utilizes an improved vector system in which several elements of the lac operon have been modified for use in eukaryotic cells for inducible gene expression.





We have a vector system for any application you could imagine—visit **www.genomics.agilent.com**

Specialty Cloning Products (Continued)

Product	AGL Cat. #	VWR Cat. #
StrataClone Systems		
StrataClone PCR Cloning Kit	240205	**99901-042**
StrataClone Blunt Cloning Kit	240207	**99901-044**
StrataClone Ultra Blunt Cloning Kit	240218	**76193-372**
***Trans*-Reporting Systems**		
PathDetect c-Jun *trans*-Reporting System	219000	**99900-586**
PathDetect Elk1 *trans*-Reporting System	219005	**99900-594**
PathDetect CREB *trans*-Reporting System	219010	**95040-800**
PathDetect CHOP *trans*-Reporting System	219015	**99900-598**
pFA-ATF2 Plasmid	219026	**99900-600**
pFA-cFos Plasmid	219031	**99900-602**
pFA-CMV Plasmid	219036	**99900-604**
pFR-CAT Plasmid	219001	**95040-802**
pFR-βGal Plasmid	219002	**99900-590**
pFR-SEAP Plasmid	219004	**99900-592**
pFA-CHOP Plasmid	219054	**99900-630**
pFA2-CREB Plasmid	219068	**99900-644**
pFA2-Elk1 Plasmid	219062	**95040-798**
pFA2-cJun Plasmid	219053	**99900-626**
pFR-Luc Plasmid	219050	**99900-624**
InterPlay TAP Systems for Protein-Protein Interactions		
InterPlay N-Terminal Mammalian TAP System Kit	240103	**99900-964**
InterPlay C-Terminal Mammalian TAP System Kit	240104	**99900-966**
InterPlay N-Terminal Mammalian TAP Vectors, 3 x 20 µg	240101	**99900-228**
InterPlay C-Terminal Mammalian TAP Vectors, 3 x 20 µg	240102	**99900-962**
InterPlay Mammalian TAP Purification Kit	240107	**99900-120**
InterPlay Adenoviral N-terminal TAP	240213	**99901-050**
Interplay Adenoviral C-terminal TAP	240215	**95040-730**
InterPlay N-Terminal Mammalian TAP Vectors, 3 x 20 µg	240214	**99901-052**
InterPlay C-Terminal Mammalian TAP Vectors, 3 x 20 µg	240216	**95040-728**

Product	AGL Cat. #	VWR Cat. #
Path Detect *Cis*-Reporting Systems		
AP-1 *cis*-Reporting System	219073	**99900-674**
NF-κB *cis*-Reporting System	219077	**99900-688**
SRF *cis*-Reporting System	219081	**99900-706**
ISRE *cis*-Reporting System	219092	**99900-818**
NFAT *cis*-Reporting System	219094	**99900-822**
C/EBP *cis*-Reporting System	240111	**99900-974**
DR3 *cis*-Reporting System	240115	**99900-982**
Egr-1 *cis*-Reporting System	240129	**99900-990**
GRE *cis*-Reporting System	240133	**99900-998**
pAP-1-hrGFP Plasmid	240049	**97066-348**
pNF-κB-hrGFP Plasmid	240051	**97066-352**
pLuc-MCS Plasmid	219087	**99900-736**
CRE *cis*-Reporting System	219075	**99900-682**
SRE *cis*-Reporting System	219079	**99900-696**
p53 *cis*-Reporting System	219083	**99900-720**
GAS *cis*-Reporting System	219093	**99900-820**
TARE *cis*-Reporting System	219095	**99900-824**
DR1 *cis*-Reporting System	240113	**99900-978**
DR5 *cis*-Reporting System	240119	**95040-746**
LILRE *cis*-Reporting System	240131	**99900-994**
DR4 *cis*-Reporting System	240135	**99901-002**
pCRE-hrGFP Plasmid	240050	**97066-350**
pNFAT-hrGFP Plasmid	240053	**97066-354**
Specialty Vectors		
SuperCos (10 rxn kit)	251301	**99901-086**
LacSwitch II system	217450	**95040-814**

Additional components for Path Detect *Cis*-Reporting Systems can be found at **www.genomics.agilent.com**

Viral Expression Systems

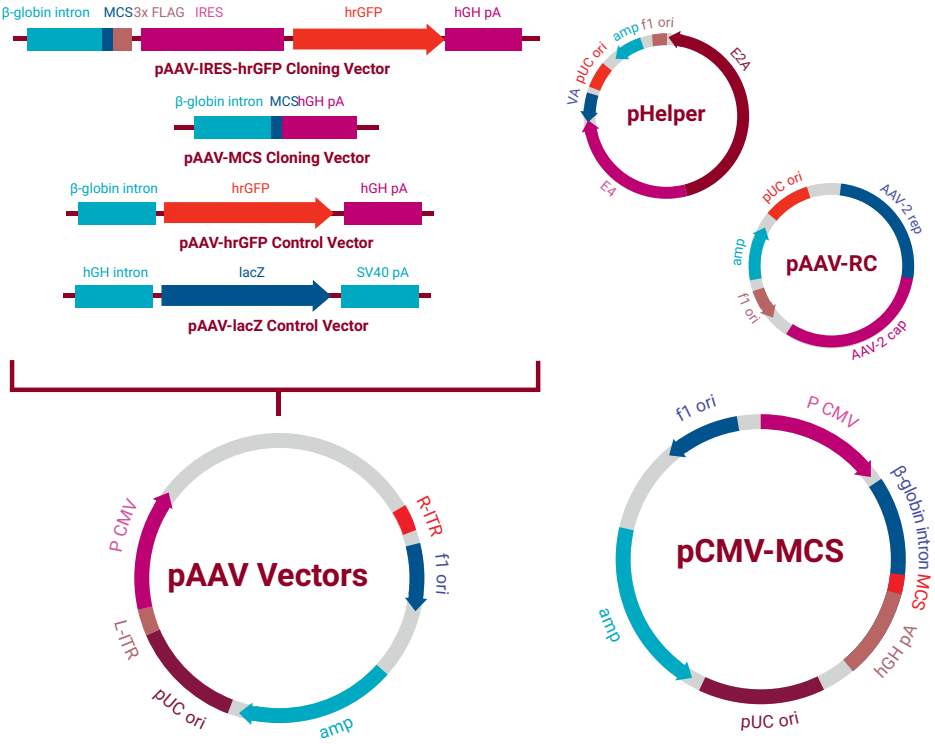
High-Efficiency Gene Delivery Starts Here

As synthetic biology moves out of the prokaryote and into eukaryotic systems, the need to study gene expression in a native host is becoming increasingly important. Many of these hosts are difficult or impossible to transfect, meaning progress may be limited by hosts that easily accept DNA using traditional transfection methods. To solve this problem, viral-based gene delivery systems have been developed for exceptionally high-efficiency gene delivery to a broader range of hosts.

Application	Long-Term Gene Expression	Transient, High-Level Gene Expression	Functional Cloning Assays
System	AAV Helper-Free System	AdEasy™ Adenoviral Systems	ViraPort Retroviral Expression System
Advantages	• Infects both dividing and non-dividing cells • Long-term, stable gene expression • Unparalleled biosafety profile	• High-level protein production • Infects both dividing and non-dividing cells • Homologous recombination in *E. coli* saves weeks of work	• Integrates into host genome for stable expression • Copy number controlled by multiplicity of infection • Functionally screen cDNA libraries in mammalian cells • Pre-made libraries available

AAV Helper-Free

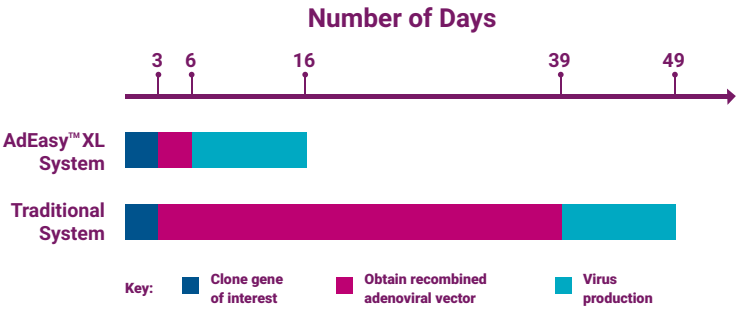
The AAV Helper-Free System improves upon recombinant adeno-associated virus-2 (AAV-2) technology by eliminating the need for helper virus. It allows safe, high-efficiency gene delivery and long- term expression in a broad range of hosts.

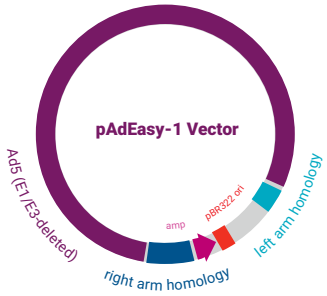


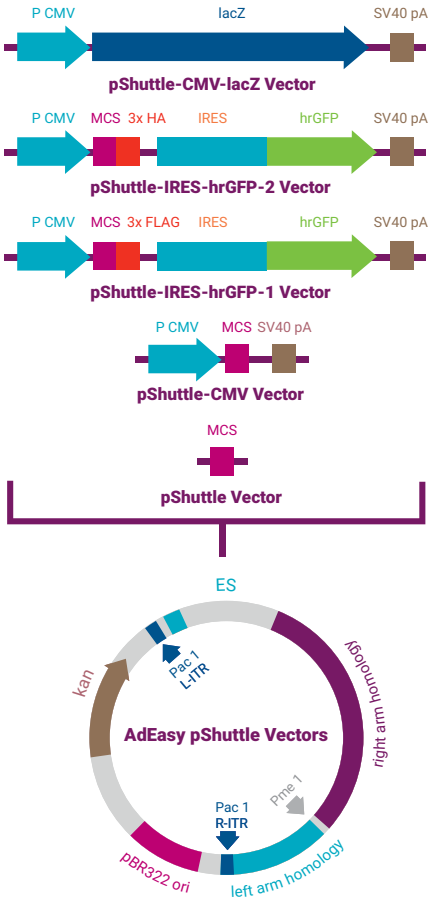
Viral Expression Systems (Continued)

AdEasy™ XL and AdEasy™ Systems

The AdEasy™ XL and AdEasy™ Adenoviral Vector Systems save you a month of work over traditional methods by producing the recombinant adenoviral plasmid by homologous recombination in *E. coli*. Now you can obtain your recombinant plasmid after a simple transformation.







ViraPort

Our ViraPort retroviral gene expression system is superior to standard transfection technology. High transduction efficiency and large cloning capacity (up to 8 kb) make the system ideal for building and screening complex libraries.

ViraPack Transfection Kit

System	AAV	AdEasy™ XL	ViraPort	Transfection
Gene delivery efficiency	>90%	>90%	>90%	~20%
Host: Dividing cells	+	+	+	+
Host: Non-dividing cells	+	+	-	-
Long-term expression	+	-	+	+
Transient expression	-	+	-	+
High-titer virus	+	+	-	N/A
Host immunogenecity	-	+	-	N/A
Maximum insert size	3 kb	7.5 kb	<8 kb	Variable
Selection for stable cells	+/-	N/A	-	+

Product	Quantity	AGL Cat. #	VWR Cat. #
AAV Helper-Free System			
AAV Helper-Free System + pAAV-MCS vector, 10 µg + pCMV-MCS vector, 10 µg + pAAV-lacZ vector, 10 µg + pAAV-RC vector, 20 µg + pHelper vector, 20 µg + AAV-293 cells, 1x10^6 cells + AAV HT1080, 1x10^6 cells	1 kit	240071	**99900-956**
pAAV-hrGFP Vector	20 µg	240074	**97066-364**
pAAV-IRES-hrGFP Vector	20 µg	240075	**97066-366**
AAV-293 Cells	1 x 10^6 cells	240073	**99901-230**
AAV-HT1080 Cells	1 x 10^6 cells	240109	**99901-258**

Product	Quantity	AGL Cat. #	VWR Cat. #
ViraPort® Retroviral Gene Expression System			
pFB Retroviral Vector	10 µg	217563	**99900-572**
pFB-Neo Retroviral Vector	10 µg	217561	**99900-570**
pVpack-GP Vector	20 µg	217566	**99900-576**
pVpack-Eco Vector	20 µg	217569	**99900-582**
pVpack-Ampho Vector	20 µg	217568	**99900-580**
pVpack-10A1 Vector	20 µg	217570	**95040-804**
pVpack-VSV-G Vector	20 µg	217567	**99900-578**
Vitality® pFB-hrGFP plasmid vector	10 µg	240027	**97066-330**
pFB-Neo-lacZ plasmid vector	10 µg	240029	**99900-944**
pFB-Luc plasmid vector	10 µg	240030	**95040-760**

Product	Quantity	AGL Cat. #	VWR Cat. #
ViraPack Transfection Kit			
ViraPack Transfection Kit	1 kit	200488	**99900-560**

Product	Quantity	AGL Cat. #	VWR Cat. #
AdEasy™ and AdEasy™ XL Adenoviral Vector Systems			
AdEasy™ XL System + pShuttle vector, 20 µg + pShuttle-CMV vector, 20 µg + pShuttle-CMV-lacZ control vector, 10 µg + BJ5183-AD1 electroporation-competent cells, 5 x 100 µl + XL10-Gold® ultracompetent cells, 5 x 100 µl + pUC18 DNA control plasmid, 10 µl + AD-293 cells, 1 x 10^6 cells	1 kit	240010	**99900-940**
BJ5183-AD1 electroporation-competent cells	5 x 100 µl	200157	**99900-004**
AdEasy™ Adenoviral Vector System + pAdEasy-1 vector, 2.5 µg + pShuttle vector, 20 µg + pShuttle-CMV vector, 20 µg + pShuttle-CMV-lacZ vector, 10 µg + BJ5183 electroporation-competent cells, 5 x 100 µl + XL10-Gold® ultracompetent cells, 5 x 100 µl + pUC18 DNA control plasmid, 10 µl	1 kit	240009	**99900-938**
BJ5183 electroporation-competent cells	5 x 100 µl	200154	**99900-272**
pAdEasy-1 vector	2.5 µg	240005	**95040-766**
pShuttle vector	20 µg	240006	**95040-764**
pShuttle-CMV vector	20 µg	240007	**99900-934**
pShuttle-CMV-lacZ control vector	10 µg	240008	**99900-936**
pShuttle-IRES-hrGFP-1	20 µg	240081	**97066-368**
pShuttle-IRES-hrGFP-2	20 µg	240082	**97066-370**

Competent Cells

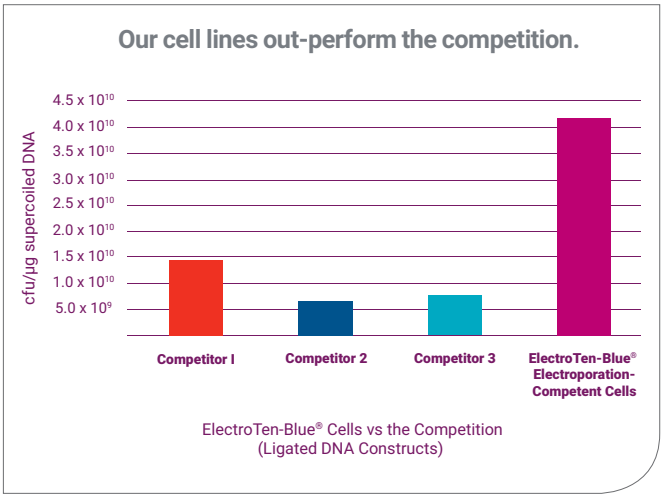
Explore a wider selection

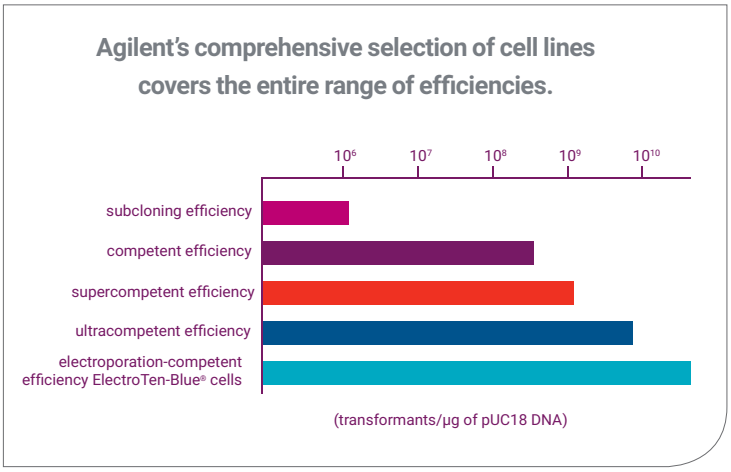
Finding the right competent cells is easy with Agilent—we have a comprehensive selection of strains for all your next-generation cloning needs.

Cloning Cells

The Highest Efficiency

Our Ultracompetent Cells provide the highest transformation efficiency in the world, making it easier and faster to obtain an accurate clone. At Agilent Technologies, we understand the less time you spend worrying about cloning, the more time you can spend answering your research questions.

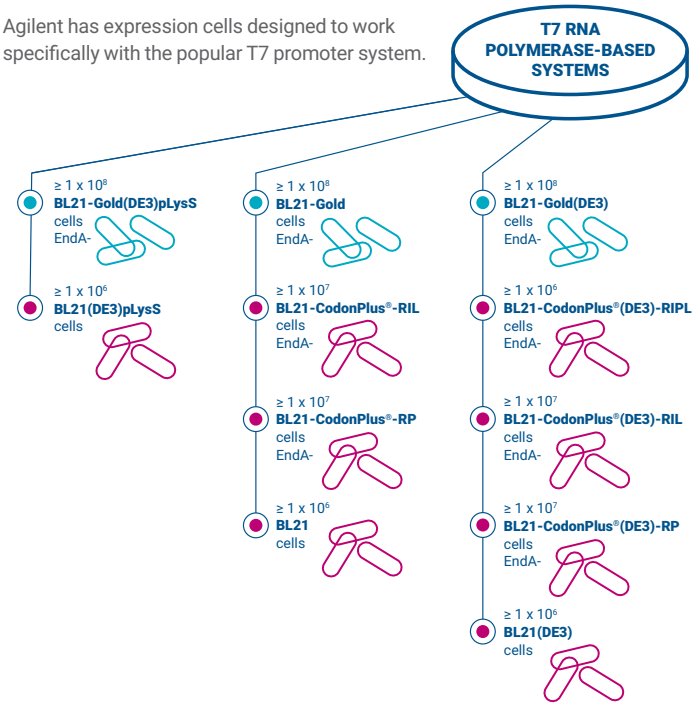




Expression Cells

The Widest Selection

We aren't content just to have the best competent cells. Agilent has designed strains for protein expression, plasmid stability, large plasmids and toxic proteins as well as everyday cloning. Our complete line of competent cells includes specialty cells for a huge variety of applications, each backed by Agilent's reputation for the best quality in the field.



Product	Uses	Transformation Efficiency	Resistance	AGL Cat. #	VWR Cat. #
Cloning Cells					
SURE 2 Supercompetent Cells	Unstable clones; DNA with secondary structure	>1 x 10^9	Tetracycline, Kanamycin, Chloramphenicol	200152	**99900-212**
SURE Electroporation Competent Cells	DNA with secondary structure, difficult	>1 x 10^{10}	Tetracycline, Kanamycin, Chloramphenicol	200227	**99900-010**
SURE Competent Cells	DNA with secondary structure, routine	>5 x 10^8	Tetracycline, Kanamycin, Chloramphenicol	200238	**99900-344**
ABLE C Electroporation Competent Cells	For toxic clones	>5 x 10^9	Tetracycline, Kanamycin	200161	**99900-282**
ABLE K Electroporation Competent Cells	For toxic clones	>5 x 10^9	Tetracycline, Kanamycin	200162	**99900-284**
ABLE C Competent Cells	For toxic clones	>5 x 10^6	Tetracycline, Kanamycin	200171	**99900-288**
ABLE K Competent Cells	For toxic clones	>5 x 10^6	Tetracycline, Kanamycin	200172	**99900-290**
TG1 Competent Cells	For phage libraries; Phage display libraries	1 x 10^{10}	N/A	200123	**99900-208**
XL10-Gold Ultracompetent Cells	Large plasmids, ligated DNA, or plasmid libraries	>5 x 10^9	Tetracycline and Chloramphenicol	200314, 200315	**99900-016 99900-018**
XL10-Gold KanR Ultracompetent Cells	Large plasmids, ligated DNA, or plasmid libraries; plasmids with CamR	>5 x 10^9	Tetracycline and Kanamycin	200317	**99903-480**
ElectroTen-Blue® Electroporation Competent Cells	Ligated DNA and generating libraries	>3 x 10^{10}	Tetracycline and Kanamycin	200159	**99900-278**
SoloPack Gold Supercompetent Cells	High efficiency, single reaction format	>1 x 10^9	Tetracycline and Chloramphenicol	230350	**99900-864**
SoloPack Gold Competent Cells	Routine cloning, single reaction format	>1 x 10^8	Tetracycline and Chloramphenicol	230325	**99900-862**
96Pack Gold Competent Cells	Routine cloning, higher throughput format	>1 x 10^8	Tetracycline and Chloramphenicol	200324	**99900-432**
XL1-Blue Electroporation Competent Cells	Electroporation	>1 x 10^{10}	Tetracycline	200228	**99900-326**
XL1-Blue MRF Electroporation Competent Cells	Electroporation, Methylated DNA	>1 x 10^{10}	Tetracycline	200158	**99900-276**
XL2-Blue Ultracompetent Cells	Highest cloning efficiency	>5 x 10^9	Tetracycline and Chloramphenicol	200150	**99900-002**
XL2-Blue MRF Ultracompetent Cells	Highest cloning efficiency for methylated DNA	>5 x 10^9	Tetracycline and Chloramphenicol	200151	**99900-268**
XL1-Blue Supercompetent Cells	Highest cloning efficiency	>1 x 10^9	Tetracycline	200236	**99900-012**
XL1-Blue MRF Supercompetent Cells	Highest cloning efficiency for methylated DNA	>1 x 10^9	Tetracycline	200230	**99900-330**
XL1-Blue MRF Kan Supercompetent Cells	Highest cloning efficiency for methylated DNA and tetracycline resistant plasmids	>1 x 10^9	Kanamycin	200248	**99900-350**
XL1-Blue MR Supercompetent Cells	For cloning without the F' episome	>1 x 10^9	N/A	200229	**99900-328**
XL1-Blue Competent Cells	For routine cloning	>1 x 10^8	Tetracycline	200249	**99900-014**
XL1-Blue Subcloning Grade Competent Cells	Cloning when DNA is not limited	>1 x 10^6	Tetracycline	200130	**99900-210**

Competent Cells (Continued)

Product	Uses	Transformation Efficiency	Resistance	AGL Cat. #	VWR Cat. #
Expression Cells					
TKX1 Cells	For phosphoprotein generation	>5 x 10^7	Tetracycline, Kanamycin	200124	**99900-250**
TKB1 Cells	For phosphoprotein generation	>5 x 10^5	Tetracycline	200134	**99900-262**
ArcticExpress Competent Cells	Enhanced solubility	>5 x 10^6	Tetracycline	230191	**95040-790**
ArcticExpress (DE3) Competent Cells	Enhanced solubility	>5 x 10^6	Tetracycline	230192	**99900-844**
ArcticExpress (DE3) RIL Competent Cells	Enhanced solubility	>5 x 10^6	Tetracycline	230193	**99901-062**
ArcticExpress (DE3) RP Competent Cells	Enhanced solubility	>5 x 10^6	Tetracycline	230194	**99901-064**
ArcticExpress RIL Competent Cells	Enhanced solubility	>5 x 10^6	Tetracycline	230195	**99901-066**
ArcticExpress RP Competent Cells	Enhanced solubility	>5 x 10^6	Tetracycline	230196	**99900-846**
BL21-CodonPlus (De3)RIPL Competent Cells	Eliminate codon bias, use with pET or pCAL	>1 x 10^6	Chloramphenicol and Streptomycin/ Spectinomycin	230280	**76193-370**
BL21-CodonPlus (De3)RIL Competent Cells	Eliminate codon bias, use with pET or pCAL	>1 x 10^7	Tetracycline and Chloramphenicol	230245	**99900-118**
BL21-CodonPlus (De3)RP Competent Cells	Eliminate codon bias, use with pET or pCAL	>1 x 10^7	Tetracycline and Chloramphenicol	230255	**99901-104**
BL21-CodonPlus RIL Competent Cells	Eliminate codon bias, for non-T7 expression systems	>1 x 10^7	Tetracycline and Chloramphenicol	230240	**99900-852**
BL21-CodonPlus RP Competent Cells	Eliminate codon bias, for non-T7 expression systems	>1 x 10^7	Tetracycline and Chloramphenicol	230250	**99900-860**
BL21-CodonPlus (De3) RIL-X Competent Cells	Methionine auxotroph for x-ray crystallography	>1 x 10^7	Tetracycline	230265	**97066-330**
BL21-CodonPlus (De3) RP-X Competent Cells	Methionine auxotroph for x-ray crystallography	>1 x 10^7	Tetracycline	230275	**99901-106**
BL21-Gold	Increased efficiency and EndA-, use with toxic proteins and non-T7 systems	>1 x 10^8	Tetracycline	230130	**99900-840**
BL21-Gold (De3)	Increased efficiency and EndA-, use with non-toxic proteins	>1 x 10^8	Tetracycline	230132	**99900-114**
BL21-Gold (De3) pLysS	Increased efficiency and EndA-, use with toxic or non-toxic proteins	>1 x 10^8	Tetracycline and Chloramphenicol	230134	**99900-116**
BL21	Use with non-T7 systems or with lambda-CE6 for toxic proteins	>1 x 10^6	Tetracycline	200133	**99900-260**
BL21 (De3)	Use with non-toxic proteins	>1 x 10^6	Tetracycline	200131	**99900-000**
BL21 (De3) pLysS	Use with toxic or non-toxic proteins	>1 x 10^6	Chloramphenicol	200132	**99900-258**
XL1-Red Cells	For random mutagenesis	N/A	Tetracycline	200129	**99900-252**

0218 Lit. No. 010023W

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PR7000-0430

Printed in USA, October 27, 2017
5991-5659EN

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