

Cloning and Protein Expression Competent Cell Packs

Variety Packs Promote Increased Efficiency

- + Optimize laboratory protocols economically
- + Test multiple strains simultaneously
- + Each pack optimized for specific applications

STRATAGENE NOW OFFERS YOU COMPETENT CELL PACKS THAT CONTAIN UP TO FOUR DIFFERENT COMPETENT CELL STRAINS FOR SPECIFIC APPLICATIONS. COMPETENT CELL PACKS ARE AVAILABLE TO SOLVE YOUR PROBLEMS WITH DIFFICULT CLONING, PROTEIN EXPRESSION, AND ROUTINE CLONING

Clone Large, Unstable, and Toxic Genes

Our Difficult Cloning Competent Cell Pack contains three different competent cell types to test with difficult-to-clone DNA constructs. Transform large plasmids using our XL10-Gold® Kan^r Ultracompetent Cells^a, which maintain the novel high transformation efficiency (Hte) phenotype (Figure 1). Whether you are working with limited amounts of DNA or large plasmids, or you just need your experiment to work the first time, this strain is the perfect choice.

Clone eukaryotic segments of DNA containing inverted repeats or secondary structures, such as Z-DNA using our SURE® Supercompetent Cells^b (Figure 2). Many clones are toxic to *E. coli* and cannot be amplified using common cloning strains. Clone toxic genes present in any ColE1-derived plasmid using our ABLE® K Competent Cells^c and isolate enough DNA for most downstream applications.

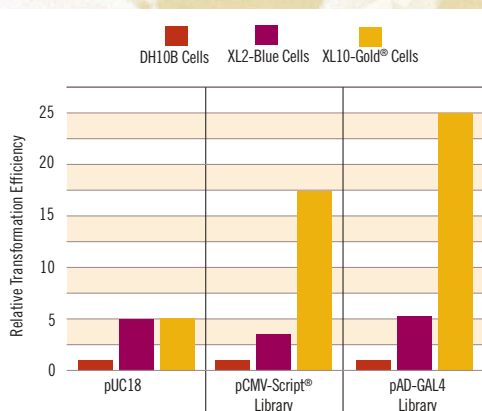


Figure 1
25-Fold Higher Transformation Efficiency of Ligated DNA with XL10-Gold® Cells

To demonstrate the ability of our XL10-Gold® cells to produce the largest number of colonies, the hosts (DH10B, XL2-Blue, and XL10-Gold® cells) were transformed with several cDNA plasmid libraries (pUC18 plasmid, pCMV-Script® mammalian expression cDNA library, and pAD-GAL4 yeast two-hybrid cDNA library). After transformation, the resulting colonies were counted. Compared to the other hosts, our XL10-Gold® cells produced the most colonies, with 25-fold higher efficiency.

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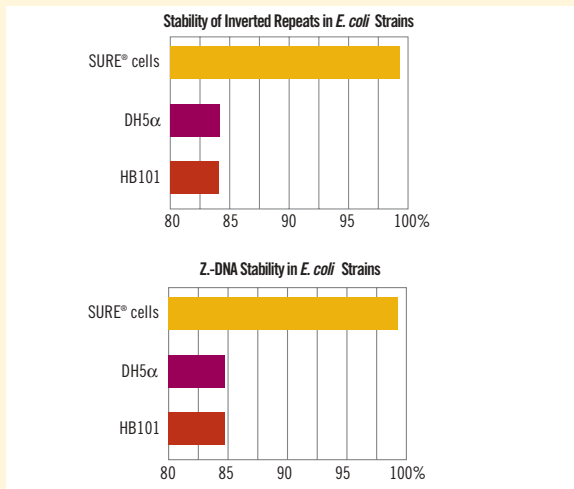


Figure 2
Cloning with SURE® Cells Dramatically Improves the Percentage of Cells with Unrearranged Plasmids

Our SURE® 2 Supercompetent Cells are optimized for high transformation efficiency (1×10^9). The genotype differs from our SURE® Competent Cells by the addition of the amylase and chloramphenicol resistance genes on the F' episome. The two strains exhibit similar results for plasmid DNA stability.

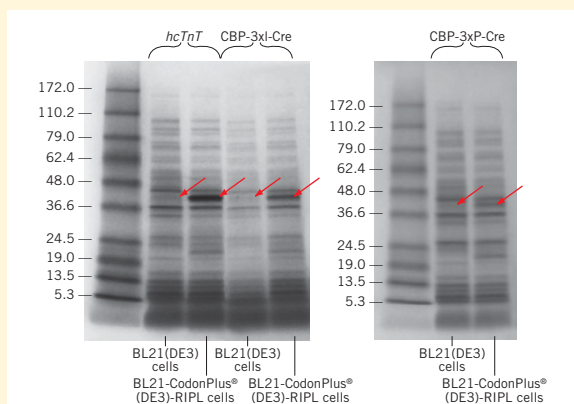


Figure 3
Superior Eukaryotic Protein Expression in *E. Coli*

The human cardiac troponin-T gene (*hcTnT*) (*argU* dependent) and two test genes, *CBP-3xl-Cre* (*ileW* dependent) and *CBP-3xP-Cre* (*proL* dependent) were expressed in either parental BL21 (DE3) or BL21-CodonPlus® (DE3)-RIPL Competent Cells. As shown, the BL21-CodonPlus® (DE3)-RIPL cells dramatically improve expression of proteins from both AT- and GC-rich genomes.

Express Higher Levels of Eukaryotic or Toxic Proteins in *E. coli*

Our Protein Expression Competent Cell Pack contains four unique competent cell types that expedite your protein expression studies yielding more active proteins and higher expression levels. For general protein expression with T7-based vectors, use our BL21 (DE3) competent cells.

Our BL21-CodonPlus® strains dramatically improve protein expression in *E. coli* by overcoming codon bias. Codon bias occurs when forced high-level expression of a gene containing codons rarely expressed in *E. coli* results in the depletion of internal tRNA pools. When expressing eukaryotic genes, all of the following codons have been shown to be depleted: arginine (AGA, AGG), isoleucine (AUA), leucine (CUA), and proline (CCC). Our BL21-CodonPlus® (DE3)-RIPL Competent Cells^d contain all four rare codons and thereby increase expression levels of proteins that contain any or all of these rare codons (Figure 3).

Our BL21-Gold® (DE3) pLysS Competent Cells^e increase expression of highly toxic genes. In these cells, the T7 lysozyme binds to T7 RNA polymerase, thus inhibiting transcription. Upon IPTG induction, expression of your protein of interest occurs due to the overproduction of the T7 RNA polymerase, which renders the T7 lysozyme virtually ineffective. You can save as much as two days of work by cloning directly into our BL21-Gold (DE3) Competent Cells^e, which lack the EndA1 nuclease.

Clone Methylated DNA, Single-Use Pack Size

Our Routine Cloning Competent Cell Packs contain three strains packaged together to increase the efficiency of your laboratory. When DNA is methylated in a fashion unlike the bacterial host patterns, it is cleaved by the *E. coli* host restriction systems. Our XL2-Blue MRF^f Ultracompetent Cells are deficient in all known *E. coli* K12 restriction systems, allowing you to clone DNA from eukaryotic genomes.

Our XL2-Blue Ultracompetent strain is our most versatile cloning strain. It provides a host for optimal propagation of plasmids and screening by blue/white selection. These cells also have a guaranteed efficiency $> 5 \times 10^9$ transformants/ μ g DNA and maintain an EndA- genotype that allows for the preparation of high-quality plasmid DNA.

Finally, our SoloPack® Gold Competent Cells^g provide a single-use format that includes a transformation protocol that does not require β -mercaptoethanol, so the protocol is even easier and more reproducible.

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Order: 03-5159-2060
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www.stratagene.com

For Research Use Only. Not for use in diagnostic procedures.

Competent Cell Packs

Difficult Cloning Competent Cell Pack		230247
XL10-Gold Ultracompetent Cells	2 x 0.1 ml	
SURE®2 Supercompetent Cells ^a	2 x 0.1 ml	
ABLE K Competent Cells ^b	1 x 0.2 ml	
Protein Expression Competent Cell Pack		230246
BL21 CodonPlus® RIPL Competent Cells	2 x 0.1 ml	
BL21-Gold (DE3) Competent Cells	2 x 0.1 ml	
BL21-Gold (DE3) pLysS Competent Cells	2 x 0.1 ml	
BL21 (DE3) Competent Cells	1 x 0.2 ml	
Routine Cloning Competent Cell Pack		230248
XL2-Blue UltraCompetent Cells	2 x 0.1 ml	
XL2-Blue MRF ^f UltraCompetent Cells	2 x 0.1 ml	
SoloPack® Gold Competent Cells	2 x 0.025 ml	

a. U.S. Patent Nos. 6,706,525, 5,512,468 and 5,707,841 and patents pending and equivalent foreign patents

b. U.S. Patent Nos. 5,017,748, 5,552,314 and equivalent foreign patents

c. U.S. Patent Nos. 6,386,245, 6,338,905 and 6,040,184 and patents pending

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e. U.S. Patent No. 6,706,525 and patents pending

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