

## Lucigen Competent Cells

Choosing the right cells for your cloning and protein expression applications will directly impact the time and effort required for your project as well as its success. Our partner Lucigen offers the best performance, value and convenience in competent cells for cloning and expression.

Chemically Competent Cells offer an unmatched value for routine cloning, and Electrocompetent Cells provide the highest possible efficiency for difficult cloning and library construction. In addition, Lucigen has developed a variety of Competent Cells for Protein Expression with unsurpassed performance. Bulk quantities and/or custom packaging are available for all Lucigen Competent Cells.

- General Cloning & Library Construction
- Large or Difficult Fragment Cloning
- Phage Display Library Applications
- Protein Expression

### Genotypes

<b>E. cloni® 10G</b>	F- mcrA Δ(mrr-hsdRMS-mcrBC) Φ80dlacZΔM15ΔlacX74 endA1 recA1 araD139 Δ(ara, leu)7697 galU galK rpsL nupG λ- tonA (StrR)
<b>E. cloni® 10GF'</b>	[F' pro A+B+ lacIqZΔM15::Tn10 (TetR)] /mcrA Δ(mrr-hsdRMS-mcrBC) endA1 recA1 Φ80dlacZΔM15 ΔlacX74 araD139 Δ(ara, leu)7697 galU galK rpsL nupGλ tonA (StrR)
<b>Endura™</b>	recA13 supE44 ara-14 galK2 lacY1 proA2 rpsL20(StrR) xyl-5 λ- leu mtl-1 F- mcrB mrr hsdS20(rB-, mB-)
<b>ER2738</b>	[F' proA+B+lacIq Δ(lacZ)M15 zzf::Tn10(TetR)] fhuA2 glnV Δ(lac-proAB) thi-1 Δ(hsdS-mcrB)5
<b>SS320 (MC1061F')</b>	[F' proAB lacIqZΔM15 Tn10 (TetR)] araD139 Δ(ara-leu)7696 galE15 galK16 Δ(lac)X74 rpsL (StrR) hsdR2 (rK- mK+) mcrA mcrB1
<b>TG1</b>	[F' traD36 proAB lacIqZΔM15] supE thi-1 Δ(lac-proAB) Δ(mcrB-hsdSM)5 (rK- mK-)
<b>E. cloni® EXPRESS BL21(DE3)</b>	F- ompT hsdSB (rB- mB-) gal dcm lon λ(DE3 [lacI lacUV5-T7 gene 1 ind1 sam7 nin5])
<b>OverExpress™ C41(DE3) &amp; C43(DE3)</b>	F- ompT gal hsdSB(rB- mB-) dcm (DE3) + two uncharacterized mutations
<b>ClearColi® BL21(DE3)</b>	F- ompT hsdSB (rB- mB-) gal dcm lon λ(DE3 [lacI lacUV5-T7 gene 1 ind1 sam7 nin5]) msbA148 ΔgutQ ΔkdsD ΔlpxLΔlpxMΔpagPΔlpxP ΔeptA
<b>ClearColi® K-12</b>	F-, λ- ΔendA ΔrecA msbA52 frr181 ΔgutQΔkdsDΔlpxLΔlpxMΔpagPΔlpxPΔeptA

[www.biocat.com/lucigen-competent-cells](http://www.biocat.com/lucigen-competent-cells)

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## GENERAL CLONING & LIBRARY CONSTRUCTION

### *E. coli*<sup>®</sup> 10G (replacing DH5 $\alpha$ ) and 10GF' Chemically Competent Cells

Clone, subclone, propagate plasmids. Transform using heat shock.

<i>E. coli</i> <sup>®</sup> 10G Chemically Competent Cells (DUOs)	> 1 x 10 <sup>9</sup> cfu/ug	60107-1-LU	12 transformations (6 x 80 ul)
		60107-2-LU	24 transformations (12 x 80 ul)
		60107-3-LU	48 transformations (24 x 80 ul)
		60107-4-LU	96 transformations (48 x 80 ul)
<i>E. coli</i> <sup>®</sup> 10G Chemically Competent Cells (in 96-well plates) <i>for high-throughput applications</i>	> 1 x 10 <sup>8</sup> cfu/ug	60096-1-LU	96 transformations (96 x 20 ul)
		60096-4-LU	384 transformations (384 x 20 ul), 4 plates
<i>E. coli</i> <sup>®</sup> 10G Chemically Competent Cells (SOLOs)	> 1 x 10 <sup>8</sup> cfu/ug	60106-1-LU	12 transformations (12 x 40 ul)
		60106-2-LU	24 transformations (24 x 40 ul)
		60106-3-LU	48 transformations (48 x 40 ul)
<i>E. coli</i> <sup>®</sup> 10G Chemically Competent Cells (Subcloning Grade)	> 1 x 10 <sup>6</sup> cfu/ug	60108-1-LU	48 transformations (4 x 480 ul)
		60108-2-LU	96 transformations (8 x 480 ul)

### *E. coli*<sup>®</sup> 10G (replacing DH5 $\alpha$ ) and 10GF' Electrocompetent Cells

Construct libraries, perform general cloning.

<i>E. coli</i> <sup>®</sup> 10G CLASSIC Electrocompetent Cells (SixPacks)	> 5 x 10 <sup>9</sup> cfu/ug	60117-1-LU	24 transformations (4 x 150 ul)
		60117-2-LU	48 transformations (8 x 150 ul)
<i>E. coli</i> <sup>®</sup> 10G ELITE Electrocompetent Cells (DUOs)	> 2 x 10 <sup>10</sup> cfu/ug	60052-1-LU	12 transformations (6 x 50 ul)
		60052-2-LU	24 transformations (12 x 50 ul)
<i>E. coli</i> <sup>®</sup> 10G ELITE Electrocompetent Cells (SixPacks)	> 2 x 10 <sup>10</sup> cfu/ug	60052-3-LU	24 transformations (4 x 150 ul)
		60052-4-LU	48 transformations (8 x 150 ul)
<i>E. coli</i> <sup>®</sup> 10G ELITE Electrocompetent Cells (SOLOs)	> 2 x 10 <sup>10</sup> cfu/ug	60051-1-LU	12 transformations (12 x 25 ul)
		60051-2-LU	24 transformations (24 x 25 ul)
<i>E. coli</i> <sup>®</sup> 10G SUPREME Electrocompetent Cells (DUOs)	> 4 x 10 <sup>10</sup> cfu/ug	60080-1-LU	12 transformations (6 x 50 ul)
		60080-2-LU	24 transformations (12 x 50 ul)
<i>E. coli</i> <sup>®</sup> 10G SUPREME Electrocompetent Cells (SOLOs)	> 4 x 10 <sup>10</sup> cfu/ug	60081-1-LU	12 transformations (12 x 25 ul)
		60081-2-LU	24 transformations (24 x 25 ul)
<i>E. coli</i> <sup>®</sup> 10GF' Electrocompetent Cells (DUOs)	> 2 x 10 <sup>10</sup> cfu/ug	60061-1-LU	12 transformations (6 x 50 ul)
		60061-2-LU	24 transformations (12 x 50 ul)

## LARGE OR DIFFICULT FRAGMENT CLONING

### Endura<sup>™</sup> Competent Cells (replacing Stbl3 and SURE)

Maintain unstable clones and propagate plasmids. Cells of choice for lentiviral CRISPR/Cas9 genome editing.

Endura <sup>™</sup> Chemically Competent Cells (DUOs)	> 1 x 10 <sup>7</sup> cfu/ug	60240-1-LU	12 transformations (6 x 80 ul)
		60240-2-LU	24 transformations (12 x 80 ul)
Endura <sup>™</sup> Chemically Competent Cells (SOLOs)	> 1 x 10 <sup>7</sup> cfu/ug	60241-1-LU	12 transformations (12 x 40 ul)
		60241-2-LU	24 transformations (24 x 40 ul)
Endura <sup>™</sup> Electrocompetent Cells (DUOs)	> 1 x 10 <sup>10</sup> cfu/ug	60242-1-LU	12 transformations (6 x 50 ul)
		60242-2-LU	24 transformations (12 x 50 ul)

#### Please Note:

Competent Cells include Recovery Medium and Control DNA. Bulk quantities and/or custom packaging are available for all Lucigen Competent Cells.

#### Size Definitions

**SOLOs:** 1 transformation per tube  
**DUOs:** 2 transformations per tube  
**SixPacks:** 6 transformations per tube

#### Volume per Reaction

**Electrocompetent cells:** 25 ul per reaction  
**Chemically competent cells:** 40 ul per reaction

## PHAGE DISPLAY LIBRARY APPLICATIONS

### Phage Display Competent Cells

Create large phage display libraries. Speed up discovery.

Phage Display optimized TG1 Electrocompetent Cells (DUOs)	> 4 x 10 <sup>10</sup> cfu/ug	60502-1-LU	12 transformations (6 x 50 ul)
		60502-2-LU	24 transformations (12 x 50 ul)
		60502-2-5-LU	120 transformations (60 x 50 ul)
Phage Display optimized SS320 (MC1061F') Electrocompetent Cells (DUOs)	> 4 x 10 <sup>10</sup> cfu/ug	60512-1-LU	12 transformations (6 x 50 ul)
		60512-2-LU	24 transformations (12 x 50 ul)
		60512-2-5-LU	120 transformations (60 x 50 ul)
Phage Display optimized ER2738 Electrocompetent Cells (DUOs)	> 2 x 10 <sup>10</sup> cfu/ug	60522-1-LU	12 transformations (6 x 50 ul)
		60522-2-LU	24 transformations (12 x 50 ul)
		60522-2-5-LU	120 transformations (60 x 50 ul)

## PROTEIN EXPRESSION

### OverExpress™ C41(DE3) and C43(DE3) Competent Cells

Express difficult or toxic proteins using any *E. coli* T7 vector.

OverExpress™ C41 (DE3) Chemically Competent Cells (SOLOs)	> 1 x 10 <sup>6</sup> cfu/ug	60442-1-LU	12 transformations (12 x 50 ul)
		60442-2-LU	24 transformations (24 x 50 ul)
OverExpress™ C41 (DE3) pLysS Chemically Competent Cells (SOLOs)	> 1 x 10 <sup>6</sup> cfu/ug	60444-1-LU	12 transformations (12 x 50 ul)
		60444-2-LU	24 transformations (24 x 50 ul)
OverExpress™ C43 (DE3) Chemically Competent Cells (SOLOs)	> 1 x 10 <sup>6</sup> cfu/ug	60446-1-LU	12 transformations (12 x 50 ul)
		60446-2-LU	24 transformations (24 x 50 ul)
OverExpress™ C43 (DE3) pLysS Chemically Competent Cells (SOLOs)	> 1 x 10 <sup>6</sup> cfu/ug	60448-1-LU	12 transformations (12 x 50 ul)
		60448-2-LU	24 transformations (24 x 50 ul)
OverExpress™ ChemComboPack (3 rxns each, 4 strains: C41(DE3) C41(DE3)pLysS C43(DE3) C43(DE3) pLysS (SOLOs)	> 1 x 10 <sup>6</sup> cfu/ug	60452-1-LU	12 transformations (12 x 50 ul)
OverExpress™ C41 (DE3) Electrocompetent Cells (SOLOs)	> 1 x 10 <sup>9</sup> cfu/ug	60341-1-LU	12 transformations (12 x 25 ul)
		60341-2-LU	24 transformations (24 x 25 ul)
OverExpress™ C43 (DE3) Electrocompetent Cells (SOLOs)	> 1 x 10 <sup>9</sup> cfu/ug	60345-1-LU	12 transformations (12 x 25 ul)
		60345-2-LU	24 transformations (24 x 25 ul)

### *E. coli*® EXPRESS BL21(DE3) Competent Cells

For routine protein expression using any *E. coli* T7 expression vector.

<i>E. coli</i> ® EXPRESS BL21(DE3) Chemically Competent Cells (DUOs)	> 1 x 10 <sup>7</sup> cfu/ug	60401-1-LU	12 transformations (6 x 80 ul)
		60401-2-LU	24 transformations (12 x 80 ul)
		60401-3-LU	48 transformations (24 x 80 ul)
<i>E. coli</i> ® EXPRESS BL21(DE3) Electrocompetent Cells (DUOs)	> 5 x 10 <sup>9</sup> cfu/ug	60300-1-LU	12 transformations (6 x 50 ul)
		60300-2-LU	24 transformations (12 x 50 ul)

### ClearColi® Electrocompetent Cells

Genetically modified LPS enables virtually endotoxin-free protein expression.

ClearColi® BL21(DE3) Electrocompetent Cells (DUOs)	> 1 x 10 <sup>9</sup> cfu/ug	60810-1-LU	12 transformations (6 x 50 ul)
		60810-2-LU	24 transformations (12 x 50 ul)

## LUCIGEN COMPETENT CELLS

## STRAINS REPLACED BY LUCIGEN COMPETENT CELLS

<b><i>E. coli</i><sup>®</sup> 10G SUPREME Electrocompetent</b>	MegaX DH10B™ Electrocompetent	ElectroTen-Blue® Electrocompetent
<b><i>E. coli</i><sup>®</sup> 10G ELITE Electrocompetent</b>	ElectroMAX™ DH10B™ Electrocompetent	XL1-Blue Electrocompetent
<b><i>E. coli</i><sup>®</sup> 10G CLASSIC Electrocompetent</b>	TOP10 Electrocompetent	No equivalent.
<b><i>E. coli</i><sup>®</sup> 10G Chemically Competent</b>	One Shot® TOP10 Chemically Competent Max Efficiency® DH10B™ Chemically Competent	XL10-Gold® Ultracompetent XL1-Blue Supercompetent
<b><i>E. coli</i><sup>®</sup> 10G Chemically Competent (Subcloning Grade)</b>	Subcloning Efficiency™ DH5α™ Chemically Competent	XL1-Blue Chemically Competent (Subcloning-Grade)
<b>Endura™ Chemically Competent</b>	OneShot® Stbl3™ Chemically Competent	SURE® Chemically Competent SURE® 2 Supercompetent
<b>Endura™ Electrocompetent</b>	ElectroMax™ Stbl4™ Electrocompetent	SURE® Electrocompetent
<b>TG1 Electrocompetent</b>	No equivalent.	TG1 Electrocompetent
<b>SS320 (MC1061F') Electrocompetent</b>	No equivalent.	No equivalent.
<b>MC1061 F- Electrocompetent</b>		
<b>ER2738 Electrocompetent</b>		
<b><i>E. coli</i><sup>®</sup> EXPRESS BL21(DE3) Electrocompetent</b>		
<b><i>E. coli</i><sup>®</sup> EXPRESS BL21(DE3) Chemically Competent</b>	One Shot® BL21(DE3) Chemically Competent	BL21-Gold (DE3) Chemically Competent BL21(DE3) Chemically Competent
<b>OverExpress™ C41(DE3) Electrocompetent</b>	No equivalent.	No equivalent.
<b>OverExpress™ C43(DE3) Electrocompetent</b>		
<b>OverExpress™ C41(DE3) Chemically Competent</b>		
<b>OverExpress™ C43(DE3) Chemically Competent</b>		
<b>ClearColi® BL21(DE3) Electrocompetent</b>		
<b>ClearColi® K-12 Electrocompetent</b>		

## Features of Lucigen Competent Cells

### *E. coli*<sup>®</sup> 10G and 10GF' Cells

- Your most cost-effective source for competent cells
- Transformation efficiencies up to  $> 4 \times 10^{10}$  cfu/ug
- Broad line of strains for all your cloning needs
- Direct replacement of TOP10, DH5α, DH10B, JM109, XL1-Blue strains

### Endura™ Cells

- Clone unstable sequences with reliable results
- Cells of choice for lentiviral cloning and CRISPR/Cas9 genome editing
- Direct replacement for Stbl3 and SURE strains
- High efficiency:  $> 1 \times 10^8$  cfu/ug (chem) or  $1 \times 10^{10}$  cfu/ug (electro)

### Phage Display Cells

- TG1, SS320 and E2738 strains
- Perfect for antibody or peptide phage display libraries
- Highest transformation efficiencies available anywhere
- Amber suppressor and non-amber suppressor lines for maximum flexibility

### OverExpress™ Cells

- OverExpress™ C41(DE3), C43(DE3), C41(DE3)pLysS and C43(DE3)pLysS strains
- Effective in expressing toxic and membrane proteins from any organism
- Cited in over 350 publications
- Combo pack containing all four strains available

### ClearColi® Cells

- ClearColi® BL21(DE3) and K-12 strains
- *E. coli* plasmid and protein production strains lacking endotoxic LPS
- Ideal for mammalian cell transfection, immunogenicity and toxicity assays
- Reduce false positives in cytokine assays, improve transfection results

[www.biocat.com/lucigen-competent-cells](http://www.biocat.com/lucigen-competent-cells)

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