

# Z-Competent™ *E. coli*

## DNA Transformation in 20 Seconds...Without Heat Shock!

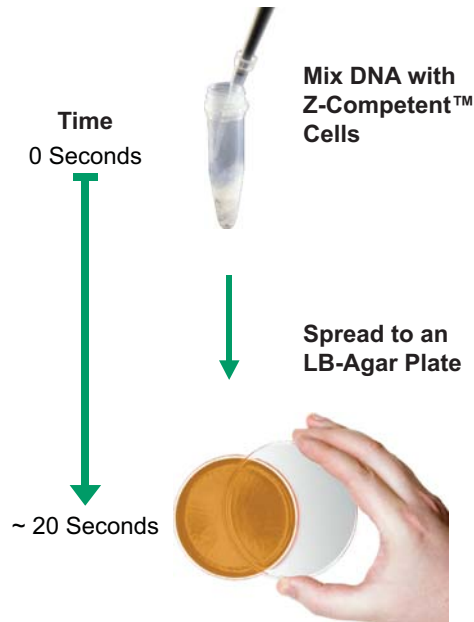
### Highlights

- Premade, chemically competent *E. coli* cells.
- Transformation efficiency:  $10^8$  -  $10^9$  transformants/ $\mu$ g pUC19.
- Mix & Go!
  - No Heat Shock
  - No Lengthy Incubations
  - No Outgrowth Procedures
  - No Wait



Z-Competent™ *E. coli* are premade, chemically competent strains made specifically for simple and highly efficient DNA transformation. Use of these cells eliminates the need for electroporation, heat shock, and long outgrowth incubations.

Premade Z-Competent™ cells are provided in packs of 10 tubes of 100  $\mu$ l aliquots or 96 well plates of 50  $\mu$ l aliquots in 12x8 strips.



*Mix & Go!*



**ZYMO RESEARCH**

*The Beauty of Science is to Make Things Simple*

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Strain	Genotype	Description	Cat. No.	Size
XJa Autolysis™	<i>F</i> [traD36 proA <sup>+</sup> B <sup>-</sup> lac <sup>R</sup> Δ(lacZ)M15] Δ(lac-proAB) glnV44 e14 <sup>-</sup> (McrA <sup>-</sup> ) thi gyrA96 (Nal <sup>R</sup> ) endA1 hsdR17( <i>r<sub>K</sub></i> <sup>-</sup> <i>m<sub>K</sub></i> <sup>+</sup> ) relA1 supE44 recA1 ΔaraB::λR, cat (Cm <sup>R</sup> )	JM109 with chromosomally inserted, arabinose-inducible λ lysozyme gene (1 ml 500X L-Arabinose included).	T5021	1 glycerol stock
			T3021	10 x 100 $\mu$ l Z-Competent™ cells
XJa (DE3) Autolysis™	<i>F</i> [traD36 proA <sup>+</sup> B <sup>-</sup> lac <sup>R</sup> Δ(lacZ)M15] Δ(lac-proAB) glnV44 e14 <sup>-</sup> (McrA <sup>-</sup> ) thi gyrA96 (Nal <sup>R</sup> ) endA1 hsdR17( <i>r<sub>K</sub></i> <sup>-</sup> <i>m<sub>K</sub></i> <sup>+</sup> ) relA1 supE44 recA1 ΔaraB::λR, cat (Cm <sup>R</sup> ) λ(DE3)	XJa Autolysis™ with prophage carrying a T7 polymerase cassette (1 ml 500X L-Arabinose included).	T5031	1 glycerol stock
			T3031	10 x 100 $\mu$ l Z-Competent™ cells
XJb Autolysis™	<i>F</i> ompT hsdS <sub>B</sub> ( <i>r<sub>B</sub></i> <sup>-</sup> <i>m<sub>B</sub></i> <sup>-</sup> ) gal dcm ΔaraB::λR, cat (Cm <sup>R</sup> )	BL21 with chromosomally inserted, arabinose-inducible λ lysozyme gene; a protein expression strain (1 ml 500X L-Arabinose included).	T5041	1 glycerol stock
			T3041	10 x 100 $\mu$ l Z-Competent™ cells
XJb (DE3) Autolysis™	<i>F</i> ompT hsdS <sub>B</sub> ( <i>r<sub>B</sub></i> <sup>-</sup> <i>m<sub>B</sub></i> <sup>-</sup> ) gal dcm ΔaraB::λR, cat (Cm <sup>R</sup> ) λ(DE3)	XJb Autolysis™ with prophage carrying a T7 polymerase cassette (1 ml 500X L-Arabinose included).	T5051	1 glycerol stock
			T3031	10 x 100 $\mu$ l Z-Competent™ cells
JM109	<i>F</i> [traD36 proA <sup>+</sup> B <sup>-</sup> lac <sup>R</sup> Δ(lacZ)M15] Δ(lac-proAB) glnV44 e14 <sup>-</sup> (McrA <sup>-</sup> ) thi gyrA96 (Nal <sup>R</sup> ) endA1 hsdR17( <i>r<sub>K</sub></i> <sup>-</sup> <i>m<sub>K</sub></i> <sup>+</sup> ) relA1 supE44 recA1	General cloning, blue-white selection, plasmid isolation.	T3003	10 x 100 $\mu$ l aliquots (10 tubes)
			T3005	96 x 50 $\mu$ l aliquots (96-well plate)
DH5a	<i>F</i> -φ80dlacZΔM15 Δ(lacZYA-argF)U169 deoR recA1 endA1 hsdR17( <i>r<sub>K</sub></i> <sup>-</sup> <i>m<sub>K</sub></i> <sup>+</sup> ) phoA supE44 thi-1 gyrA96 relA1, λ-	General cloning, blue-white selection, plasmid isolation (slow growth, some plasmids not stable).	T3007	10 x 100 $\mu$ l aliquots (10 tubes)
			T3009	96 x 50 $\mu$ l aliquots (96-well plate)
HB101	<i>F</i> Δ(gpt-proA) leuB6 supE44 ara-14 galK2 lacY1 Δ(mcrC-mrr) xyl-5 mtl-1 recA13 rpsL20 (Sm <sup>R</sup> )	General cloning, plasmid isolation.	T3011	10 x 100 $\mu$ l aliquots (10 tubes)
			T3013	96 x 50 $\mu$ l aliquots (96-well plate)
C600	<i>F</i> [e14 <sup>-</sup> (McrA) or e14 <sup>+</sup> (McrA <sup>+</sup> )] thr-1 leuB6 thi-1 lacY1 supE44 rfbD1 fhuA21	General cloning, plasmid isolation.	T3015	10 x 100 $\mu$ l aliquots (10 tubes)
TG1	<i>F</i> [traD36 lac <sup>R</sup> Δ(lacZ) M15 proA <sup>+</sup> B <sup>-</sup> ] supE Δ(mcrB-hsdSM)5 ( <i>r<sub>K</sub></i> <sup>-</sup> <i>m<sub>K</sub></i> <sup>+</sup> ; McrB) thi Δ(lac-proAB)	General cloning, blue-white selection, plasmid isolation.	T3017	10 x 100 $\mu$ l aliquots (10 tubes)

# Z-Competent™ *E. coli* Transformation Kit

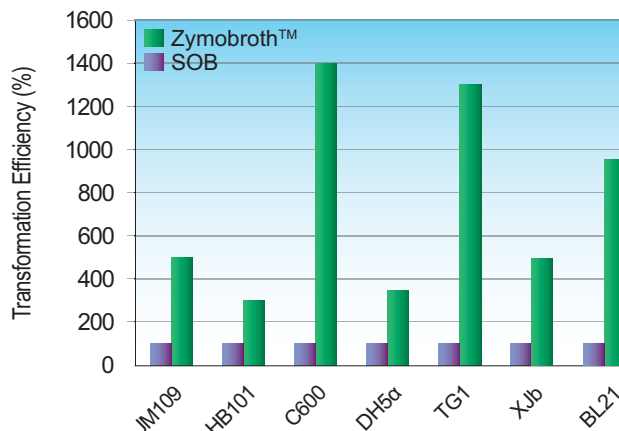
## Make Your Own Ultra-Competent *E. coli*



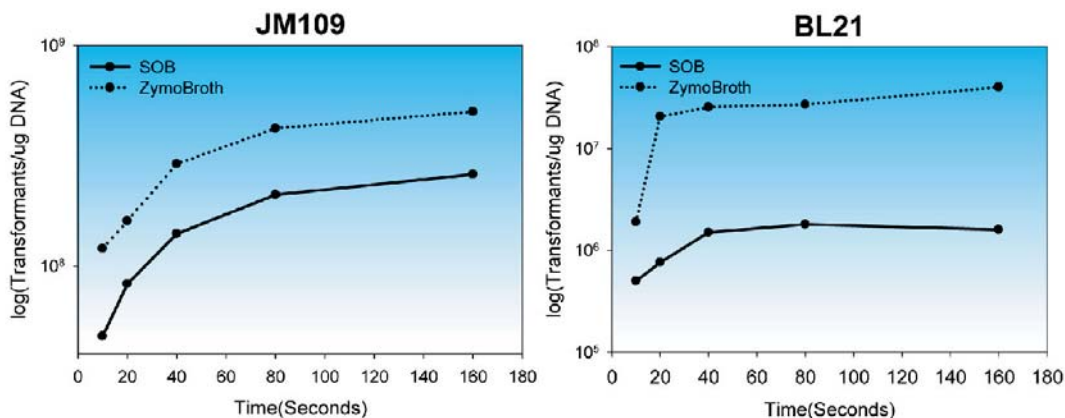
You can make your own Z-Competent™ *E. coli* strains using the **Z-Competent *E. coli* Transformation Kit™** or the **Z-Competent™ *E. coli* Transformation Buffer Set**. Simply grow the *E. coli* strain of your choice in **ZymoBroth™** medium (or SOB), wash, and then resuspend the cells in the provided uniquely formulated buffers. The cells are now ready for transformation! The Z-Competent™ *E. coli* Transformation Kit includes all buffers for making up to 20 ml Z-Competent™ *E. coli* from your favorite lab strains. ZymoBroth™ growth medium is included. The Z-Competent™ *E. coli* Transformation Buffer Set includes all buffers for making up to 60 ml Z-Competent™ *E. coli* from your favorite lab strains, but ZymoBroth™ growth medium is not included (see Ordering Information below).

### Preparation of Ultra-Competent *E. coli* using the Z-Competent™ *E. coli* Transformation Kit: Short Protocol

1. Inoculate **ZymoBroth™** with starter culture and grow at appropriate temperature with shaking until O.D.<sub>600</sub> = 0.4-0.6.
2. Incubate culture on ice 10 minutes.
3. Centrifuge culture at 4°C to pellet cells.
4. Resuspend cell pellet in 5 ml of 1X **Wash Buffer**; centrifuge at 4°C again to pellet cells.
5. Resuspend cell pellet in 5 ml 1X **Competent Buffer**. Aliquot cells into 100 µl fractions. Chemically competent cells are ready for transformation or for storage at -70°C.



**ZymoBroth™ dramatically increases the transformation efficiencies of a broad range of *E. coli* strains.** The figure above shows the relative transformation efficiencies for strains generated using SOB or ZymoBroth™. Generally, **ZymoBroth™** enhances transformation efficiencies better for difficult-to-transform strains.



**Z-Competent™ *E. coli* cells prepared with ZymoBroth™ display fast transformation kinetics and high transformation efficiencies.** The figures on left show the transformation kinetics for strains JM109 and BL21 made Z-Competent™ with ZymoBroth™ or SOB media.

### Ordering Information

Product Description	Catalog No.	Size
<b>Z-Competent <i>E. coli</i> Transformation Kit™</b> (supplied with <b>ZymoBroth™</b> )	T3001	Makes 20 ml
<b>Z-Competent <i>E. coli</i> Transformation Buffer Set</b> ( <b>ZymoBroth™</b> is not supplied)	T3002	Makes 60 ml
<b>ZymoBroth™</b> (specially formulated growth medium used for preparation of highly competent <i>E. coli</i> )	M3015-100	100 ml
	M3015-500	500 ml
<b>SOB Solution</b>	T3001-1-100	100 ml
<b>Rattler™ Plating Beads</b> (sterile, reusable, glass beads)	S1001	1 bottle (230g)
	S1001-5	5 bottles

Note - ™ Trademarks of Zymo Research Corporation. This product is for research use only and should only be used by trained professionals. Some reagents included with this kit are irritants. Wear protective gloves and eye protection. Follow the safety guidelines and rules enacted by your research institution or facility.