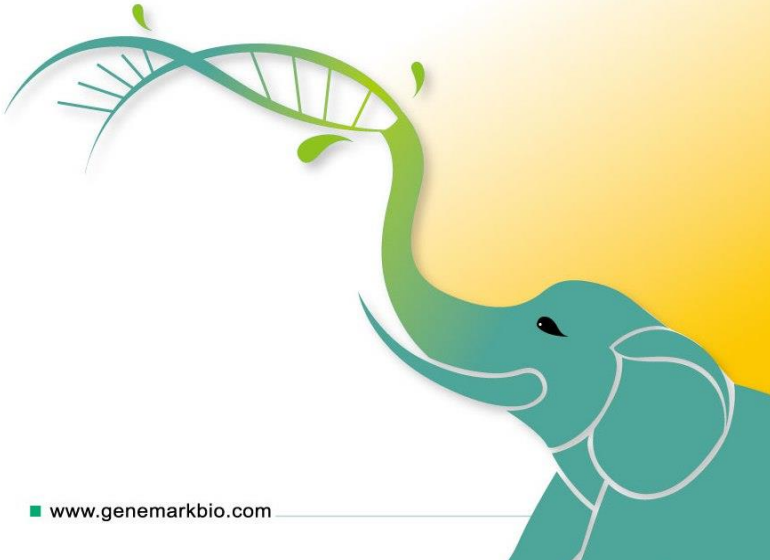
GeneMark

# High Efficiency XL-1 Blue Competent Cells

Cat. No.: XL01-20 / XL01-100
Size: 20 / 100 Reactions
Store at -80℃
For research use only



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# High Efficiency XL-1 Blue Competent Cells

**Description:**

The **High Efficiency XL-1 Blue Competent Cells** are designed as single-use aliquots of XL-1 Blue *E.coli* strain. The efficiency of the XL-1 Blue is up to $10^8$ cfu/μg.

**Components:**

- 21 vials (XL01-20),100 vials (XL01-100) of 100 μl competent cells **(Store at -80°C)**
- 1 vial of 5 μl positive control DNA (100 pg/μl) (Store at -20°C)
- 1 bottle of 7.5 ml SOC medium (XL01-20), 4 bottles of 7.5 ml SOC medium (XL01-100) (Store at 4°C or -20°C)

**Genotype:**

F' recA1 endA1 gyrA96 thi hsdR17(rk-, mk+) supE44 λ -△(lac) proAB $lacI^qZ\Delta M15$ Tn10 ($Tet^r$)

**Transformation Protocol:**

Before Starting:

**a.** Turn on the water bath and set to 42°C.

**b.** Warm the SOC medium to room temperature.

**c.** LB plates containing appropriate antibiotic, 0.1 mM IPTG and 40 μg/ml X-gal (or spreading 50 μl of 50 mg/ml X-gal and 100 μl of 100 mM IPTG onto LB/antibiotic plates, incubate at 37°C for at least 30 min before plating the cells)

Procedure:

**1.** Thaw one tube of competent cells on ice for each transformation.

**2.** Pipet 1 to 2 μl ligation mixture into the cells, mix by gently swirling the tip or by gently tapping the tube. **Do not mix by pipetting.**

**3.** Incubate the tube on ice for 10~30 min.

4. Heat-shock the cells at 42°C for 30 sec. **Do not mix or shake.**
5. Place the tube on ice for 2 min and add 250 µl SOC medium and incubate at 37°C with shaking 225 rpm for 45 min to 1 h.
6. Spread 50~200 µl of each transformation on a LB plate, you may store the remaining cells at 4°C for plating cells the next day.

**Calculation of transformation efficiency:**

If you do not obtain the expected number of colonies, it is recommended that you test the efficiency of competent cells with the positive control DNA (encodes ampicillin resistance gene).

1. Add 1 µl of positive control DNA (100 pg) into one tube of competent cells.
2. Follow the transformation protocol.
3. Before plating the transformation mix, take 3.5 µl of the mix with 50 µl SOC medium. Plate the diluted cells on LB plates with 100 µg/ml ampicillin. You should have efficiency > $10^8$ cfu/µg (around or above 100 colonies).

**Transformation efficiency formula:**

$$\text{cfu/µg} = \frac{\text{cfu}}{\text{µg transformed DNA}} \times \frac{\text{350 µl total transformation mixture}}{\text{3.5 µl cells plated}}$$

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