

## New England Biolabs Product Specification

*Product Name:* SHuffle<sup>®</sup> Express Competent *E. coli*  
*Catalog #:* C3028J  
*Shelf Life:* 12 months  
*Storage Temp:* -80°C  
*Specification Version:* PS-C3028J v1.0  
*Effective Date:* 17 Jan 2017

### Assay Name/Specification (minimum release criteria)

**Antibiotic Resistance (Nitrofurantoin)** - 15 µl of untransformed SHuffle<sup>®</sup> Express Competent *E. coli* streaked onto a LB or Rich Broth plate containing Nitrofurantoin will form colonies after incubation for 16 hours at 37°C.

**Antibiotic Resistance (Spectinomycin)** - 15 µl of untransformed SHuffle<sup>®</sup> Express Competent *E. coli* streaked onto a LB or Rich Broth plate containing Spectinomycin will form colonies after incubation for 16 hours at 37°C.

**Antibiotic Resistance (Streptomycin)** - 15 µl of untransformed SHuffle<sup>®</sup> Express Competent *E. coli* streaked onto a LB or Rich Broth plate containing Streptomycin will form colonies after incubation for 16 hours at 37°C.

**Antibiotic Sensitivity (Ampicillin)** - 15 µl of untransformed SHuffle<sup>®</sup> Express Competent *E. coli* streaked onto a LB or Rich Broth plate containing Ampicillin will not form colonies after incubation for 16 hours at 37°C.

**Antibiotic Sensitivity (Chloramphenicol)** - 15 µl of untransformed SHuffle<sup>®</sup> Express Competent *E. coli* streaked onto a LB or Rich Broth plate containing Chloramphenicol will not form colonies after incubation for 16 hours at 37°C.

**Antibiotic Sensitivity (Kanamycin)** - 15 µl of untransformed SHuffle<sup>®</sup> Express Competent *E. coli* streaked onto a LB or Rich Broth plate containing Kanamycin will not form colonies after incubation for 16 hours at 37°C.

**Antibiotic Sensitivity (Tetracycline)** - 15 µl of untransformed SHuffle<sup>®</sup> Express Competent *E. coli* streaked onto a LB or Rich Broth plate containing Tetracycline will not form colonies after incubation for 16 hours at 37°C.

**Functional Testing (Disulfide Bond Formation)** - The nuclease NucA requires disulfide bonds for its stability. When expressed at 37°C in *E. coli*, NucA is toxic to cells only in its oxidized disulfide-bonded state. Transformation of SHuffle<sup>®</sup> Express Competent *E. coli* using 100 pg of plasmid that expresses a MBP-NucA fusion results in < 1% of the colonies when compared to a control transformation of its wild type parent strain NEB 10-beta.

**Phage Resistance (Φ 80)** - 15 µl of untransformed SHuffle<sup>®</sup> Express Competent *E. coli* streaked onto a Rich Broth plate does not support plaque formation by phage Φ 80 after incubation for 16 hours at 37°C.



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Transformation Efficiency - 50 µl of SHuffle <sup>®</sup> Express Competent <i>E. coli</i> cells were transformed with 100 pg of pUC19 DNA using the transformation protocol provided. Incubation overnight on LB-Ampicillin plates at 37°C resulted in >1 x 10 <sup>7</sup> cfu/µg of DNA.
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Date 17 Jan 2017

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Director of Quality Control

