

## New England Biolabs Certificate of Analysis

**Product Name:** SHuffle<sup>®</sup> Express Competent *E. coli*  
**Catalog #:** C3028J  
**Lot #:** 0071705  
**Assay Date:** 05/2017  
**Expiration Date:** 05/2018  
**Storage Temp:** -80°C  
**Specification Version:** PS-C3028J v1.0  
**Effective Date:** 12 Apr 2017

Assay Name/Specification (minimum release criteria)	Lot #0071705
<b>Antibiotic Resistance (Nitrofurantoin)</b> - 15 µl of untransformed SHuffle <sup>®</sup> Express Competent <i>E. coli</i> streaked onto a LB or Rich Broth plate containing Nitrofurantoin will form colonies after incubation for 16 hours at 37°C.	<b>Pass</b>
<b>Antibiotic Resistance (Spectinomycin)</b> - 15 µl of untransformed SHuffle <sup>®</sup> Express Competent <i>E. coli</i> streaked onto a LB or Rich Broth plate containing Spectinomycin will form colonies after incubation for 16 hours at 37°C.	<b>Pass</b>
<b>Antibiotic Resistance (Streptomycin)</b> - 15 µl of untransformed SHuffle <sup>®</sup> Express Competent <i>E. coli</i> streaked onto a LB or Rich Broth plate containing Streptomycin will form colonies after incubation for 16 hours at 37°C.	<b>Pass</b>
<b>Antibiotic Sensitivity (Ampicillin)</b> - 15 µl of untransformed SHuffle <sup>®</sup> Express Competent <i>E. coli</i> streaked onto a LB or Rich Broth plate containing Ampicillin will not form colonies after incubation for 16 hours at 37°C.	<b>Pass</b>
<b>Antibiotic Sensitivity (Chloramphenicol)</b> - 15 µl of untransformed SHuffle <sup>®</sup> Express Competent <i>E. coli</i> streaked onto a LB or Rich Broth plate containing Chloramphenicol will not form colonies after incubation for 16 hours at 37°C.	<b>Pass</b>
<b>Antibiotic Sensitivity (Kanamycin)</b> - 15 µl of untransformed SHuffle <sup>®</sup> Express Competent <i>E. coli</i> streaked onto a LB or Rich Broth plate containing Kanamycin will not form colonies after incubation for 16 hours at 37°C.	<b>Pass</b>
<b>Antibiotic Sensitivity (Tetracycline)</b> - 15 µl of untransformed SHuffle <sup>®</sup> Express Competent <i>E. coli</i> streaked onto a LB or Rich Broth plate containing Tetracycline will not form colonies after incubation for 16 hours at 37°C.	<b>Pass</b>
<b>Functional Testing (Disulfide Bond Formation)</b> - The nuclease NucA requires disulfide bonds for its stability. When expressed at 37°C in <i>E. coli</i> , NucA is toxic to cells only in its oxidized disulfide-bonded state. Transformation of SHuffle <sup>®</sup> Express Competent <i>E. coli</i> 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.	<b>Pass</b>



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<p><b>Phage Resistance (Φ 80)</b> - 15 µl of untransformed SHuffle<sup>®</sup> Express Competent <i>E. coli</i> streaked onto a Rich Broth plate does not support plaque formation by phage Φ 80 after incubation for 16 hours at 37°C.</p>	<b>Pass</b>
<p><b>Transformation Efficiency</b> - 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 &gt;1 x 10<sup>7</sup> cfu/µg of DNA.</p>	<b>Pass</b>



Authorized by  
Derek Robinson  
12 Apr 2017



Inspected by  
Quiting Ren  
31 May 2017

