

## New England Biolabs Certificate of Analysis

**Product Name:** SHuffle<sup>®</sup> T7 Express Competent *E. coli*  
**Catalog #:** C3029J  
**Lot #:** 0161801  
**Assay Date:** 01/2018  
**Expiration Date:** 01/2019  
**Storage Temp:** -80°C  
**Specification Version:** PS-C3029J v1.0  
**Effective Date:** 18 Sep 2017

Assay Name/Specification (minimum release criteria)	Lot #0161801
<b>Antibiotic Resistance (Nitrofurantoin)</b> - 15 µl of untransformed Shuffle <sup>®</sup> T7 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> T7 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> T7 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> T7 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> T7 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> T7 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> T7 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>

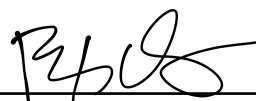


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<p><b>Functional Testing (Disulfide Bond Formation)</b> - The nuclease NucA requires disulfide bonds for its stability. When expressed at 37°C in <i>E. coli</i>, NucA is toxic to cells only in its oxidized disulfide-bonded state. Transformation of SHuffle<sup>®</sup> T7 Express Competent <i>E. coli</i> using 100 pg of plasmid that expresses a MBP-NucA fusion results in &lt; 1% of the colonies when compared to a control transformation of its wild type parent strain NEB 10-beta.</p>	<b>Pass</b>
<p><b>Phage Resistance (Φ 80)</b> - 15 µl of untransformed SHuffle<sup>®</sup> T7 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> T7 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 10e7 cfu/µg of DNA.</p>	<b>Pass</b>



Authorized by  
Derek Robinson  
18 Sep 2017



Inspected by  
Quiting Ren  
18 Jan 2018

