

## New England Biolabs Certificate of Analysis

Product Name: SHuffle® Express Competent *E.coli*  
 Catalog Number: C3028J  
 Packaging Lot Number: 10063273  
 Expiration Date: 12/2020  
 Storage Temperature: -80°C  
 Specification Version: PS-C3028J v1.0

SHuffle® Express Competent E.coli Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
C3028JVIAL	SHuffle® Express Competent E.coli	10009043	Pass

Assay Name/Specification	Lot # 10063273
<b>Antibiotic Resistance (Nitrofurantoin)</b> 15 µl of untransformed SHuffle® 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.	Pass
<b>Antibiotic Resistance (Spectinomycin)</b> 15 µl of untransformed SHuffle® 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.	Pass
<b>Antibiotic Resistance (Streptomycin)</b> 15 µl of untransformed SHuffle® 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.	Pass
<b>Antibiotic Sensitivity (Ampicillin)</b> 15 µl of untransformed SHuffle® 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.	Pass
<b>Antibiotic Sensitivity (Chloramphenicol)</b> 15 µl of untransformed SHuffle® 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.	Pass
<b>Antibiotic Sensitivity (Kanamycin)</b>	Pass

Assay Name/Specification	Lot # 10063273
<p>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.</p>	
<p><b>Antibiotic Sensitivity (Tetracycline)</b> 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.</p>	<b>Pass</b>
<p><b>Functional Testing (Disulfide Bond Formation)</b> 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 &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> 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.</p>	<b>Pass</b>
<p><b>Transformation Efficiency</b> 50 µl of SHuffle<sup>®</sup> Express Competent E. coli 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>

This product has been tested and shown to be in compliance with all specifications.



Quieting Ren  
Production Scientist  
23 Dec 2019



Corey Rabeau  
Packaging Quality Control Inspector  
23 Dec 2019