

## New England Biolabs Certificate of Analysis

**Product Name:** SHuffle® T7 Express Competent *E.coli*  
**Catalog Number:** C3029J  
**Packaging Lot Number:** 10245975  
**Expiration Date:** 06/2025  
**Storage Temperature:** -80°C  
**Specification Version:** PS-C3029J v2.0

| SHuffle® T7 Express Competent E.coli Component List |                                      |            |                      |
|-----------------------------------------------------|--------------------------------------|------------|----------------------|
| NEB Part Number                                     | Component Description                | Lot Number | Individual QC Result |
| C3029JVIAL                                          | SHuffle® T7 Express Competent E.coli | 10207699   | Pass                 |

| Assay Name/Specification                                                                                                                                                                                                                        | Lot # 10245975 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| <b>Antibiotic Resistance (Nitrofurantoin)</b><br>15 µl of untransformed Shuffle® T7 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><br>15 µl of untransformed Shuffle® T7 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><br>15 µl of untransformed Shuffle® T7 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><br>15 µl of untransformed Shuffle® T7 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><br>15 µl of untransformed Shuffle® T7 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 # 10245975 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| <p>15 µl of untransformed SHuffle® T7 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><br/>15 µl of untransformed SHuffle® T7 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><br/>The nuclease NucA requires disulfide bonds for its stability. When expressed at 30°C in E. coli, NucA is toxic to cells only in its oxidized disulfide-bonded state. Transformation of SHuffle® T7 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 after 0.4 mM IPTG induction at 30°C.</p> | <b>Pass</b>    |
| <p><b>Phage Resistance (φ 80)</b><br/>15 µl of untransformed SHuffle® T7 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><br/>50 µl of SHuffle® T7 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.

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