

New England Biolabs Certificate of Analysis

Product Name: HiFi Taq DNA Ligase
Catalog Number: M0647S
Unit Definition: N/A
Lot Number: 10041035
Expiration Date: 03/2021
Storage Temperature: -20°C
Storage Conditions: 10 mM Tris-HCl, 100 mM KCl, 1 mM DTT, 0.1 mM EDTA, 0.1 % Triton®X-100, 50 % Glycerol, (pH 7.4 @ 25°C)
Specification Version: PS-M0647S v3.0

| HiFi Taq DNA Ligase Component List | | | |
|------------------------------------|----------------------------|------------|----------------------|
| NEB Part Number | Component Description | Lot Number | Individual QC Result |
| M0647SVIAL | HiFi Taq DNA Ligase | 10040076 | Pass |
| B0647SVIAL | HiFi Taq DNA Ligase Buffer | 10023723 | Pass |

| Assay Name/Specification | Lot # 10041035 |
|---|----------------|
| Endonuclease Activity (Nicking) A 50 µl reaction in NEBuffer 4 containing 1 µg of supercoiled PhiX174 DNA and a minimum of 10 µl of HiFi Taq DNA Ligase incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis. | Pass |
| Exonuclease Activity (Radioactivity Release) A 50 µl reaction in HiFi Taq DNA Ligase Buffer containing 1 µg of a mixture of single and double-stranded [³ H] E. coli DNA and a minimum of 10 µl of HiFi Taq DNA Ligase incubated for 4 hours at 37°C releases <0.1% of the total radioactivity. | Pass |
| Functional Testing (HiFi Taq DNA Ligase, Fidelity) A 20 µl reaction in HiFi Taq DNA Ligase Buffer containing 0.1 µM of an equimolar mix of a FAM-labeled nicked dsDNA substrate and 44 pM HiFi Taq DNA Ligase incubated for 10 minutes at 65°C results in complete ligation of the matched product and <40% ligation of the mismatched products as determined by capillary electrophoresis. | Pass |
| Non-Specific DNase Activity (16 Hour) A 50 µl reaction in NEBuffer 4 containing 1 µg of Lambda-HindIII DNA and a minimum of 2 µl of HiFi Taq DNA Ligase incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis. | Pass |

| Assay Name/Specification | Lot # 10041035 |
|--|----------------|
| <p>qPCR DNA Contamination (E. coli Genomic) A minimum of 1 µl of HiFi Taq DNA Ligase is screened for the presence of E. coli genomic DNA using SYBR® Green qPCR with primers specific for the E. coli 16S rRNA locus. Results are quantified using a standard curve generated from purified E. coli genomic DNA. The measured level of E. coli genomic DNA contamination is ≤ 1 E. coli genome.</p> | Pass |
| <p>RNase Activity (Extended Digestion) A 10 µl reaction in NEBuffer 4 containing 40 ng of a 300 base single-stranded RNA and a minimum of 1 µl of HiFi Taq DNA Ligase is incubated at 37°C. After incubation for 4 hours, >90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescent detection.</p> | Pass |
| <p>Functional Testing (HiFi Taq DNA Ligase, Activity) A 20 µl reaction in HiFi Taq DNA Ligase Buffer containing 0.1 µM of a FAM-labeled nicked dsDNA substrate and 44 pM HiFi Taq DNA Ligase incubated for 10 minutes at 65°C results in 40%+/-20 ligation of the substrate as determined by capillary electrophoresis.</p> | Pass |

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



Mary Lorenzen
Production Scientist
05 Dec 2018



Josh Hersey
Packaging Quality Control Inspector
21 Mar 2019