NEW ENGLAND BioLabs Inc.
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# New England Biolabs
# Certificate of Analysis

| | |
|---|---|
| *Product Name:* | *dGTP Solution* |
| *Catalog Number:* | *N0442S* |
| *Concentration:* | *100 mM* |
| *Unit Definition:* | *N/A* |
| *Packaging Lot Number:* | *10145821* |
| *Expiration Date:* | *12/2023* |
| *Storage Temperature:* | *-20°C* |
| *Storage Conditions:* | *Supplied in Ultrapure water as a sodium salt (pH 7.5)* |
| *Specification Version:* | *PS-N0442S v2.0* |

| **dGTP Solution Component List** | | | |
|---|---|---|---|
| **NEB Part Number** | **Component Description** | **Lot Number** | **Individual QC Result** |
| N0442SVIAL | dGTP | 10132189 | **Pass** |

| **Assay Name/Specification** | **Lot # 10145821** |
|---|---|
| **Physical Purity (HPLC)**<br>dGTP Solution is ≥ 99% pure as determined by HPLC analysis. | **Pass** |
| **PCR Amplification (2.0 kb Lambda, dNTPs)**<br>A 50 µl reaction in ThermoPol® Reaction Buffer in the presence of 200 µM dATP, dTTP, dCTP, and dGTP and 0.2 µM primers containing 1 ng Lambda DNA with 1.25 units of Taq DNA Polymerase for 25 cycles of PCR amplification results in the expected 2.0 kb product. | **Pass** |
| **Phosphatase Activity (pNPP)**<br>A 200 µl reaction in 1M Diethanolamine, pH 9.8, 0.5 mM MgCl2 containing 2.5 mM p-Nitrophenyl Phosphate (pNPP) and a minimum of 16 µl of dGTP Solution incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis. | **Pass** |
| **PCR Amplification (5.0 kb Lambda, dNTPs)**<br>A 50 µl reaction in ThermoPol® Reaction Buffer in the presence of 200 µM dATP, dTTP, dCTP, and dGTP and 0.2 µM primers containing 1 ng Lambda DNA with 1.25 units of Taq DNA Polymerase for 25 cycles of PCR amplification results in the expected 5.0 kb product. | **Pass** |
| **PCR Amplification (0.5 kb Lambda, dNTPs)** | **Pass** |

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| Assay Name/Specification | Lot # 10145821 |
|---|---|
| A 50 µl reaction in ThermoPol® Reaction Buffer in the presence of 200 µM dATP, dTTP, dCTP, and dGTP and 0.2 µM primers containing 1 ng Lambda DNA with 1.25 units of Taq DNA Polymerase for 25 cycles of PCR amplification results in the expected 0.5 kb product. | |
| **Non-Specific DNase Activity (16 Hour)**<br>A 50 µl reaction in NEBuffer 2 containing 1 µg of T3 or T7 DNA in addition to a reaction containing Lambda-HindIII DNA and a minimum of 4 µl of dGTP Solution incubated for 16 hours at 37ºC results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis. | **Pass** |
| **RNase Activity (Extended Digestion)**<br>A 10 µl reaction in NEBuffer 4 containing 40 ng of a 300 base single-stranded RNA and a minimum of 1 µl of dGTP Solution is incubated at 37°C. After incubation for 16 hours, >90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescent detection. | **Pass** |
| **qPCR DNA Contamination (E. coli Genomic)**<br>A minimum of 1 µl of dGTP Solution 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. | **Pass** |
| **Endonuclease Activity (Nicking)**<br>A 50 µl reaction in NEBuffer 2 containing 1 µg of supercoiled PhiX174 DNA and a minimum of 1 µl of dGTP Solution incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis. | **Pass** |

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

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18 Mar 2022

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