

New England Biolabs Certificate of Analysis

Product Name: Bst 2.0 WarmStart® DNA Polymerase
Catalog Number: M0538M
Concentration: 120,000 U/ml
Unit Definition: One unit is defined as the amount of enzyme that will incorporate 25 nmol of dNTP into acid insoluble material in 30 minutes at 65°C.
Lot Number: 10038406
Expiration Date: 02/2021
Storage Temperature: -20°C
Storage Conditions: 10 mM Tris-HCl, 50 mM KCl, 1 mM DTT, 0.1 mM EDTA, 0.1 % Triton®X-100, 50 % Glycerol, (pH 7.1 @ 25°C)
Specification Version: PS-M0538M v1.0

Bst 2.0 WarmStart® DNA Polymerase Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
M0538MVIAL	Bst 2.0 WarmStart® DNA Polymerase	10034026	Pass
B1003SVIAL	Magnesium Sulfate (MgSO ₄) Solution	0021701	Pass
B0537SVIAL	Isothermal Amplification Buffer	10035085	Pass

Assay Name/Specification	Lot # 10038406
<p>Inhibition of Primer Extension (Hot Start) A 50 µl reaction in Isothermal Amplification Buffer containing 6 mM MgSO₄ and 1.4 mM dNTPs in the presence of 1.6 µM of a fluorescent internally labeled oligonucleotide and a minimum of 16 units of Bst 2.0 WarmStart® DNA Polymerase incubated for 2 hours at 25°C yields <5% extension as determined by capillary electrophoresis.</p>	Pass
<p>Non-Specific DNase Activity (16 Hour) A 50 µl reaction in NEBuffer 2 containing 1 µg of T3 DNA in addition to a reaction containing Lambda-HindIII DNA and a minimum of 120 units of Bst 2.0 WarmStart® DNA Polymerase incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.</p>	Pass
<p>Phosphatase Activity (pNPP) A 200 reaction in 1M Diethanolamine, pH 9.8, 0.5 mM MgCl₂ containing 2.5 mM p-Nitrophenyl Phosphate (pNPP) and a minimum of 100 units Bst 2.0 DNA Polymerase incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.</p>	Pass

Assay Name/Specification	Lot # 10038406
<p>qPCR DNA Contamination (E. coli Genomic) A minimum of 120 units of Bst 2.0 WarmStart® DNA Polymerase 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>Protein Purity Assay (SDS-PAGE) Bst 2.0 DNA Polymerase is $\geq 99\%$ pure as determined by SDS-PAGE analysis using Coomassie Blue detection.</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 Bst 2.0 WarmStart® DNA Polymerase 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.</p>	Pass
<p>Exonuclease Activity (Radioactivity Release) A 50 μl reaction in ThermoPol® Reaction Buffer containing 1 μg of a mixture of single and double-stranded [^3H] E. coli DNA and a minimum of 500 units of Bst 2.0 DNA Polymerase incubated for 4 hours at 65°C releases $<0.1\%$ of the total radioactivity.</p>	Pass
<p>Endonuclease Activity (Nicking) A 50 μl reaction in ThermoPol® Reaction Buffer containing 1 μg of supercoiled PhiX174 DNA and a minimum of 500 units of Bst 2.0 DNA Polymerase incubated for 4 hours at 65°C results in $<10\%$ conversion to the nicked form as determined by agarose gel electrophoresis.</p>	Pass

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



Katie Gebhardt
Production Scientist
22 Feb 2019



Michael Tonello
Packaging Quality Control Inspector
25 Mar 2019