

New England Biolabs Certificate of Analysis

Product Name: Q5[®] Reaction Buffer Pack
Catalog #: B9027S
Concentration: 5X Concentrate
Lot #: 0041710
Assay Date: 10/2017
Expiration Date: 10/2020
Storage Temp: -20°C
Composition (1X): Proprietary
Specification Version: PS-B9027S v1.0
Effective Date: 23 Oct 2017

Assay Name/Specification (minimum release criteria)	Lot #0041710
<p>Endonuclease Activity (Nicking, Buffer) - A 50 µl reaction in 2X Q5[®] Reaction Buffer containing 1 µg of supercoiled PhiX174 DNA incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.</p>	Pass
<p>Non-Specific DNase Activity (16 hour, Buffer) - A 50 µl reaction in 2X Q5[®] Reaction Buffer containing 1 µg of T3 DNA in addition to a reaction containing Lambda-HindIII DNA 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>PCR Amplification (20 kb Lambda DNA, Buffer) - A 50 µl reaction in Q5[®] Reaction Buffer in the presence of 200 µM dNTPs and 1 µM primers containing 10 ng Lambda DNA with 1 unit of Q5[®] High-Fidelity DNA Polymerase for 22 cycles of PCR amplification results in the expected 20 kb product.</p>	Pass
<p>PCR Amplification (7 kb Human Genomic DNA, Buffer) - A 50 µl reaction in Q5[®] Reaction Buffer in the presence of 200 µM dNTPs and 0.5 µM primers containing 20 ng Human Genomic DNA with 1 unit of Q5[®] High-Fidelity DNA Polymerase for 30 cycles of PCR amplification results in the expected 7 kb product.</p>	Pass
<p>Phosphatase Activity (pNPP, Buffer) - A 200 µl reaction in 1M Diethanolamine @ pH 9.8 and 0.5 mM MgCl₂ containing 2.5 mM <i>p</i>-Nitrophenyl Phosphate (pNPP) and a minimum of 80 µl Q5[®] Reaction Buffer incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.</p>	Pass



New England Biolabs Certificate of Analysis

Assay Name/Specification (minimum release criteria)	Lot #0041710
<p>qPCR DNA Contamination (<i>E. coli</i> Genomic, Buffer) - A minimum of 1 µl of Q5® Reaction Buffer is screened for the presence of <i>E. coli</i> genomic DNA using SYBR® Green qPCR with primers specific for the <i>E. coli</i> 16S rRNA locus. Results are quantified using a standard curve generated from purified <i>E. coli</i> genomic DNA. The measured level of <i>E. coli</i> genomic DNA contamination is ≤ 1 <i>E. coli</i> genome.</p>	Pass
<p>RNase Activity Assay (4 Hour 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 Q5® Reaction Buffer 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



Authorized by
Lynne Apone
23 Oct 2017



Inspected by
Tony Spear-Alfonso
02 Nov 2017

