

New England Biolabs Certificate of Analysis


Product Name: Klenow Fragment (3'-5' exo-)
Catalog Number: M0212S
Concentration: 5,000 U/ml
Unit Definition: One unit is defined as the amount of enzyme that will incorporate 10 nmol of dNTP into acid insoluble material in 30 minutes at 37°C.
Lot Number: 10045792
Expiration Date: 04/2021
Storage Temperature: -20°C
Storage Conditions: 25 mM Tris-HCl , 1 mM DTT , 0.1 mM EDTA , 50 % Glycerol, (pH 7.4 @ 25°C)
Specification Version: PS-M0212S/L v1.0

Klenow Fragment (3'-5' exo-) Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
M0212SVIAL	Klenow Fragment (3'-5' exo-)	10043894	Pass
B7002SVIAL	NEBuffer™ 2	10042968	Pass

Assay Name/Specification	Lot # 10045792
<p>Exonuclease Activity (Radioactivity Release) A 50 µl reaction in NEBuffer 2 containing 1 µg of a mixture of single and double-stranded [³H] E. coli DNA and a minimum of 200 units of Klenow Fragment (3'–5' exo-) incubated for 4 hours at 37°C releases <0.1% of the total radioactivity.</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 50 units of Klenow Fragment (3'–5' exo-) 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 µl 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 Klenow Fragment (3'–5' exo-) incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.</p>	Pass
<p>Protein Purity Assay (SDS-PAGE)</p>	Pass

Assay Name/Specification	Lot # 10045792
<p>Klenow Fragment (3'–5' exo-) is ≥ 99% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.</p>	
<p>Endonuclease Activity (Nicking) A 50 µl reaction in NEBuffer 2 containing 1 µg of supercoiled PhiX174 DNA and a minimum of 50 units of Klenow Fragment (3'–5' exo-) incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.</p>	Pass
<p>qPCR DNA Contamination (E. coli Genomic) A minimum of 50 units of Klenow Fragment (3'–5' exo-) 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 Klenow Fragment (3'–5' exo-) is incubated at 37°C. After incubation for 16 hours, >90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescence detection.</p>	Pass
<p>Single Stranded DNase Activity (FAM-Labeled Oligo) A 50 µl reaction in NEBuffer 2 containing a 10 nM solution of a fluorescent internal labeled oligonucleotide and a minimum of 50 units of Klenow Fragment (3'–5' exo-) incubated for 30 minutes at 37°C yields <10% degradation as determined by fluorescent detection.</p>	Pass

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



Green Duquette
Production Scientist
24 Apr 2019



Jay Minichiello
Packaging Quality Control Inspector
04 Jun 2019