NEW ENGLAND BioLabs® Inc.

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New England Biolabs
Product Specification

Product Name:	*Msz Exonuclease I*
Catalog #:	*M0527S*
Concentration:	*10,000 units/ml*
Unit Definition:	*One unit is defined as the amount of enzyme that will catalyze the release of 10 nmol of acid-soluble nucleotide in a total reaction volume of 100 µl in 30 minutes at 37°C in 1X rCutSmart Buffer with 0.17 mg/ml single-stranded [³H]-DNA*
Shelf Life:	*24 months*
Storage Temp:	*-20°C*
Storage Conditions:	*10 mM Tris-HCl , 50 mM KCl , 1 mM DTT , 0.1 mM EDTA , 50 % Glycerol, (pH 7.4 @ 25°C)*
Specification Version:	*PS-M0527S v1.0*
Effective Date:	*03 Aug 2022*

Assay Name/Specification (minimum release criteria)
Endonuclease Activity (Circular Single Stranded DNA) - A 50 µl reaction in rCutSmart™ Buffer containing 1 µg of M13mp18 Single-stranded DNA and a minimum of 100 units of Msz Exonuclease I incubated for 16 hours at 37°C results in <10% conversion to linear DNA as determined by agarose gel electrophoresis.
Endonuclease Activity (Nicking) - A 50 µl reaction in rCutSmart™ Buffer containing 1 µg of supercoiled PhiX174 DNA and a minimum of 100 units of Msz Exonuclease I incubated for 16 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.
Protein Purity Assay (SDS-PAGE) - Msz Exonuclease I is ≥ 95% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.
qPCR DNA Contamination (*E. coli* Genomic) - A minimum of 10 units of Msz Exonuclease I 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.
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 Msz Exonuclease I 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.

Date 03 Aug 2022

Derek Robinson
Quality Approver