NEW ENGLAND BioLabs® Inc.

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New England Biolabs
Product Specification

Product Name:	*Thermostable RNase H*
Catalog #:	*M0523S*
Concentration:	*5,000 units/ml*
Unit Definition:	*One unit is defined as the amount of enzyme required to produce 1 nmol of ribonucleotides from 40 picomoles of a fluorescently labeled 25 base pair RNA-DNA hybrid in a total reaction volume of 50 µl in 20 minutes at 50°C.*
Shelf Life:	*24 months*
Storage Temp:	*-20°C*
Storage Conditions:	*50 mM Tris-HCl, 100 mM NaCl, 0.1 mM EDTA, 1 mM DTT, 0.1% Triton®X-100, 50% Glycerol (pH 7.5 @ 25° C)*
Specification Version:	*PS-M0523S v1.0*
Effective Date:	*29 Jan 2018*

Assay Name/Specification (minimum release criteria)
Endonuclease Activity (Nicking) - A 50 µl reaction in RNase H Reaction Buffer containing 1 µg of supercoiled PhiX174 DNA and a minimum of 25 units of Thermostable RNase H incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.
Exonuclease Activity (Radioactivity Release) - A 50 µl reaction in RNase H Reaction Buffer containing 1 µg of a mixture of single and double-stranded [^{3}H] *E. coli* DNA and a minimum of 25 units of Thermostable RNase H incubated for 4 hours at 37°C releases <0.1% of the total radioactivity.
Protein Purity Assay (SDS-PAGE) - Thermostable RNase H is ≥ 95% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.
qPCR DNA Contamination (E. coli Genomic) - A minimum of 5 units of Thermostable RNase H 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 5 units of Thermostable RNase H 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.

Date 29 Jan 2018

Derek Robinson
Director of Quality Control

ISO 9001 Registered Quality Management
ISO 14001 Registered Environmental Management
ISO 13485 Registered Medical Devices