240 County Road
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New England Biolabs
Certificate of Analysis

Product Name:	*Mismatch Endonuclease I*
Catalog Number:	*M0678S*
Concentration:	*80,000 U/ml*
Unit Definition:	*One unit is defined as the amount of enzyme required to cleave ≥50% of 0.2 pmol of a fluorescently labeled 60mer oligonucleotide duplex containing a single T-T mismatch in 30 minutes at 37°C in a total reaction volume of 20 µl in 1X NEBuffer r2.1.*
Packaging Lot Number:	*10266046*
Expiration Date:	*11/2026*
Storage Temperature:	*-20°C*
Storage Conditions:	*500 mM NaCl, 10 mM Tris-HCl, 1 mM DTT, 0.1 mM EDTA, 50 % Glycerol, (pH 7.4 @ 25°C)*
Specification Version:	*PS-M0678S v1.0*

Mismatch Endonuclease I Component List			
NEB Part Number	**Component Description**	**Lot Number**	**Individual QC Result**
M0678SVIAL	Mismatch Endonuclease I	10266011	**Pass**
B6002SVIAL	NEBuffer™ r2.1	10250211	**Pass**

Assay Name/Specification	**Lot # 10266046**
DNase Activity (Labeled Oligo, 3' extension) A 50 µl reaction in CutSmart® Buffer containing a 20 nM solution of a fluorescent labeled double-stranded oligonucleotide containing a 3' extension and a minimum of 5 µl of Mismatch Endonuclease I incubated for 16 hours at 37°C yields <5% degradation as determined by capillary electrophoresis.	**Pass**
Double Stranded DNase Activity (Labeled Oligo) A 50 µl reaction in CutSmart® Buffer containing a 20 nM solution of a fluorescent labeled double-stranded oligonucleotide containing a blunt end and a minimum of 5 µl of Mismatch Endonuclease I incubated for 16 hours at 37°C yields <5% degradation as determined by capillary electrophoresis.	**Pass**
Non-Specific DNase Activity (16 Hour) A 50 µl reaction in NEBuffer™ r2.1 containing 1 µg of Lambda-HindIII DNA and a minimum of 400 units of Mismatch Endonuclease I incubated for 16 hours at 37ºC results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.	**Pass**

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Assay Name/Specification	Lot # 10266046
Protein Purity Assay (SDS-PAGE) Mismatch Endonuclease I is ≥ 95% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.	**Pass**
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 80 units of Mismatch Endonuclease 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.	**Pass**
Single Stranded DNase Activity (FAM-Labeled Oligo) A 50 µl reaction in CutSmart® Buffer containing a 20 nM solution of a fluorescent internal labeled oligonucleotide and a minimum of 5 µl of Mismatch Endonuclease I incubated for 16 hours at 37°C yields <5% degradation as determined by capillary electrophoresis.	**Pass**
qPCR DNA Contamination (E. coli Genomic) A minimum of 80 units of Mismatch Endonuclease 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.	**Pass**

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

One or more products referenced in this document may be covered by a 3rd-party trademark. Please visit www.neb.com/trademarks for additional information.

Jamie Souza
Production Scientist
02 Dec 2024

Josh Hersey
Packaging Quality Control Inspector
04 Dec 2024