

New England Biolabs Product Specification

<i>Product Name:</i>	<i>Mismatch Endonuclease I</i>
<i>Catalog #:</i>	<i>M0678S</i>
<i>Concentration:</i>	<i>80,000 units/ml</i>
<i>Unit Definition:</i>	<i>One unit is defined as the amount of enzyme required to cleave $\geq 50\%$ 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.</i>
<i>Shelf Life:</i>	<i>24 months</i>
<i>Storage Temp:</i>	<i>-20°C</i>
<i>Storage Conditions:</i>	<i>500 mM NaCl, 10 mM Tris-HCl, 1 mM DTT, 0.1 mM EDTA, 50 % Glycerol, (pH 7.4 @ 25°C)</i>
<i>Specification Version:</i>	<i>PS-M0678S v1.0</i>
<i>Effective Date:</i>	<i>02 Jul 2021</i>

Assay Name/Specification (minimum release criteria)

DNase Activity (Labeled Oligo, 3' extension) - A 50 μ l 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 μ l of Mismatch Endonuclease I incubated for 16 hours at 37°C yields <5% degradation as determined by capillary electrophoresis.

Double Stranded DNase Activity (Labeled Oligo) - A 50 μ l 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 μ l of Mismatch Endonuclease I incubated for 16 hours at 37°C yields <5% degradation as determined by capillary electrophoresis.

Non-Specific DNase Activity (16 Hour) - A 50 μ l reaction in NEBuffer™ r2.1 containing 1 μ g of Lambda-HindIII DNA and a minimum of 400 units of Mismatch Endonuclease I incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.

Protein Purity Assay (SDS-PAGE) - Mismatch Endonuclease I is $\geq 95\%$ pure as determined by SDS-PAGE analysis using Coomassie Blue detection.

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.



New England Biolabs Product Specification

Assay Name/Specification (minimum release criteria)

<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 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.</p>

<p>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.</p>

*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.*



Date 02 Jul 2021

Derek Robinson
Director, Quality Control

