

Product: RNase H2 Enzyme, 500 Units, 20 U/μL (25 μL)

Product number: 11-03-02-03

Batch number: 0000421453

Expiration date: 2020-JUL-03

Test	Specification	Results
Physical purity assessment by electrophoresis separation analysis	Purity >90%	Pass
qPCR DNA contamination test for <i>E. coli</i> 16S rRNA subunit	<10 Copies/sample	Pass
Molecular weight determination by electrophoresis separation analysis	27.6 kDa ±15%	Pass
ESI mass spectral analysis of enzyme cleavage products	4335 ±0.05% Da 5132 ±0.05% Da	Pass
Enzyme activity concentration	20 ±25% U/μL	Pass

Storage: Store RNase H2 Enzyme in a sealed container at –20°C.

Verified by: Wade Beagle

Quality release date: 2019-JAN-07

IDT verifies that the information contained herein is true and correct to the best of our knowledge. This document was produced electronically and is valid without signature.

General information: RNase H2 (rnhB) belongs to a family of enzymes that cleaves RNA bases in a DNA-RNA duplex. RNase H2 can cleave a duplex embedded with as little as a single RNA base leaving a 3' OH and a 5' phosphate. The enzyme does not cleave single-stranded RNA or DNA.

Enzyme source: RNase H2 gene from *Pyrococcus abyssi*, codon optimized and expressed in *E. coli*.

Storage buffer: 20 mM Tris-HCl, pH 8.4; 0.1 mM EDTA; 100 mM KCl; 50% glycerol; 0.1% Triton X-100

Concentration: 20 U/μL

Recommended reaction conditions:

- 20 mM Tris-HCl, pH 8.4; 60 mM KCl; 0.01% Triton X-100; 3 mM MgCl₂; 1% glycerol
- Optimal RNase H2 cleavage activity occurs at 70°C, but the enzyme works well in the range of 60–75°C. Activity drops off rapidly below 60°C. For use in conjunction with PCR (polymerase chain reaction), the recommended cycling parameters are (95°C, 15 sec; 60°C, 1 min) x 45. If a hotstart DNA polymerase is employed, then use the manufacturer's recommended activation temperature and time.

Unit definition: One enzymatic unit is the amount of enzyme needed to cleave 1 nmol of DNA-RNA-DNA heteroduplex substrate (S-rC 14-1-15) per minute at 70°C in Magnesium Cleavage Buffer (10 mM Tris-HCl, pH 8.0; 50 mM NaCl; 4 mM MgCl₂; 10 μg/mL BSA).

S-rC 14-1-15:

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5'   CTCGTGAGGTGATGrCAGGAGATGGGAGGCG 3'
3'   GAGCACTCCACTAC  GTCCTCTACCCTCCGC 5'
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