INTEGRATED DNA TECHNOLOGIES

certificate of analysis

Product: RNase H2 Enzyme, 50 Units, 2 U/µL (25 µL)

Product number: 11-03-02-02

Batch number: 0000487381

Expiration date: 2021-FEB-05

Test	Specification	Results
Physical purity assessment by electrophoresis separation analysis	Purity >90%	Pass
qPCR DNA contamination test for *E. coli* 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	2 ±25% U/µL	Pass

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

Verified by: Jacob Petrzelka
Quality release date: 2019-DEC-05

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: 2 U/µL

Recommended reaction conditions:

- 20 mM Tris-HCl, pH 8.4; 60 mM KCl; 0.01% Triton X-100; 3 mM $MgCl_2$; 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 $MgCl_2$; 10 µg/mL BSA).

S-rC 14-1-15:

5′ CTCGTGAGGTGATGrCAGGAGATGGGAGGCG 3′

3′ GAGCACTCCACTAC GTCCTCTACCCTCCGC 5′