

# RNase H



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M0297S 006160318031

## M0297S



250 units 5,000 U/ml Lot: 0061603

RECOMBINANT Store at -20°C Exp: 3/18

**Description:** Ribonuclease H (RNase) H is an endoribonuclease which specifically hydrolyzes the phosphodiester bonds of RNA which is hybridized to DNA. This enzyme does not digest single or double-stranded DNA.

**Source:** An *E. coli* strain that carries the cloned RNase H gene (rnh) from *Escherichia coli*

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### Applications:

- Removal of poly(A) tails of mRNA hybridized to poly(dT)
- Removal of mRNA during second strand cDNA synthesis

Supplied in: 50 mM KCl, 10 mM Tris-HCl (pH 7.4 @ 25°C), 0.1 mM EDTA, 1 mM dithiothreitol, 200 µg/ml BSA and 50% glycerol.

### Reagents Supplied with Enzyme:

10X RNase H Reaction Buffer.

**Reaction Conditions:** 1X RNase H Reaction Buffer. Incubate at 37°C.

### 1X RNase H Reaction Buffer:

75 mM KCl  
50 mM Tris-HCl  
3 mM MgCl<sub>2</sub>  
10 mM dithiothreitol  
pH 8.3 @ 25°C

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**Unit Definition:** One unit is defined as the amount of enzyme required to produce 1 nmol of ribonucleotides from 20 picomoles of a fluorescently labelled 50 base pair RNA-DNA hybrid in a total reaction volume of 50 µl in 20 minutes at 37°C.

### Quality Control Assays

**RNase Assay:** Incubation of a 10 µl reaction containing 50 units of RNase H with 40 ng of RNA transcripts for 1 hour at 37°C results in no detectable degradation of the RNA as determined by gel electrophoresis.

**SS DNA Exonuclease Activity:** Incubation of 50 units of enzyme with 1 µg of sonicated and denatured [<sup>3</sup>H]-DNA (10<sup>5</sup> cpm/ug) for 30 minutes at 37°C in 50 µl reaction buffer released < 0.1% radioactivity.

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**Endonuclease Activity:** Incubation of a 50 µl reaction containing 50 units of RNase H with 1 µg of ϕX174 RF I DNA for 4 hours at 37°C resulted in < 10% conversion to RFI as determined by agarose gel electrophoresis.

**Heat Inactivation:** 65°C for 20 minutes.

### References:

1. Gubler, U. and Hoffman, B.J. (1983) *Gene* 25, 263–269.
2. Davis, R. et al. (1988) *Cell Biol.* 8, 4745–4755.
3. Donnis-Keller, H. (1979) *Nucleic Acid Res.* 7, 179.
4. Goodwin, E. C. and Rottman, F.M. (1992) *Nucleic Acids Res.* 20, 916.



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CERTIFICATE OF ANALYSIS

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