Watchmaker RNase H (5 U/µL)

Product Description

Watchmaker Genomics RNase H (Ribonuclease H) is a non-specific endonuclease derived from *E. coli*. RNase H is an enzyme that specifically degrades RNA by cleaving RNA in an RNA:DNA hybrid, hydrolyzing the RNA phosphodiester bonds while leaving the DNA strand intact.

Relevant Applications

- Cleavage of RNA for second-strand cDNA synthesis
- Applications that require RNA cleavage with an RNA:DNA substrate[1]

Unit Definition and Buffer Composition

- Unit definition: One unit of RNase H hydrolyzes 16 pmol of ribonucleotides from a RNA:DNA probe in 10 minutes at 30°C
- Enzyme storage buffer: 20 mM Tris-HCl, pH 7.4, 100 mM KCl, 0.1 mM EDTA, 1 mM DTT, 50% Glycerol, 0.01% Tween 20
- Standard 10X reaction buffer (not supplied with kit): 500 mM Tris-HCl, pH 8.3, 750 mM KCl, 30 mM $MgCl_2$, 100 mM DTT

Storage and Handling

RNase H is shipped on ice packs. Upon receipt, store at -25°C to -15°C. Keep reaction mixes on ice or a cooled reagent block during routine use. Take care to mix solutions thoroughly before use and during reaction setup. When stored and handled as indicated, the product will retain full performance until the expiry date printed on the kit box.

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Kit Contents

Kit code	Description	Component volume
7K0131-100UL	RNase H (5 U/µL)	100 µL

For larger volumes, higher concentrations, and custom formats, contact the **Sales Team** at sales@watchmakergenomics.com.

DTT Recommendations

DTT is required for optimal activity of RNase H, with 10 mM DTT recommended in the 1X reaction buffer. Depending on the application, it is not recommended to use reaction buffers older than 4 months and/or reaction buffers that have undergone multiple freeze/thaw cycles due to DTT instability.

Heat Inactivation

Inactivate by heating at 65°C for 20 minutes.

Recommended Reaction Setup

1. Depending on the application, add RNase H at 0.05 U/µL* in 1X reaction buffer (not provided with kit).
2. Incubate at 37°C for 20 minutes.
3. The reaction can be stopped by heat inactivation or with the addition of 0.5 M EDTA.

*To determine optimal activity for your application, we recommend performing a titration within the range of 0.0001 U/µL to 0.1 U/µL of the enzyme with the intended substrate.

References

1. Miller HI, Riggs AD & Gill GN. Ribonuclease H (Hybrid) in *Escherichia coli*: Identification and characterization. *J. Biol. Chem.* 1973; 148:2621–2624. doi.org/10.1016/S0021-9258(19)44152-5.

Revision History

Version	Description	Date
1.0	First protocol release	5/2025

WATCHMAKER GENOMICS

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