RNase Inhibitor (Glycerol free)

Cat.No.: HYA312

Product Description

RNase inhibitor is a recombinant mouse RNase inhibitor expressed and purified from Escherichia coli. It binds to RNase A, B or C in a 1:1 manner through non-covalent bonds, thereby inhibiting the activity of the three enzymes and protecting RNA from degradation. However, it is ineffective against ribonuclease 1, ribonuclease T1, S1 nuclease, ribonuclease H and Aspergillus-derived ribonucleases.RNase inhibitors have been tested by RT-PCR, RT-qPCR, and IVT-mRNA, and are compatible with various commercial reverse transcriptases, various DNA polymerases, and RNA polymerases.Compared with human RNase inhibitors, mouse RNase inhibitors do not contain two cysteines that are very sensitive to oxidation, so they have higher antioxidant properties, making them stable at low concentrations of DTT (less than 1 mM). This feature makes it suitable for reactions where high concentrations of DTT cannot be added (e.g., Real-time RT-PCR).

Components

Component	2 KU	20 KU	200 KU
80U/uL RNase inhibitor (Glycerol free)	25 uL	250 μL	2.5 mL

Storage

Store at -25°C~ -15°C,valid for 1 years.

Unit Definition

One activity unit (U) is defined as the amount of enzyme required to inhibit 50% of the activity of 5 ng RNase A.

Quality Control

1. **Exonuclease activity**: 40 U of this product and 1 μg λ-Hind III digest DNA reacted at 37℃ for 16 hours, and the electrophoretic band of DNA did not change;
2. **Endonuclease activity**: 40 U of this product and 1 μg λDNA reacted at 37℃ for 16 hours, and the electrophoretic band of DNA did not change;
3. **Nickase activity**: 40 U of this product and 1 μg pBR322 reacted at 37℃ for 16 hours, and the electrophoretic band of DNA did not change;

4. **RNase activity**: 40 U of this product and 1.6 μg MS2 RNA reacted at 37℃ for 4 hours, and the electrophoretic band did not change;
5. ***E. coli* DNA residue detection**: The nucleic acid remaining in 40 U of this product was detected by TaqMan qPCR specific for *E. coli* 16s rDNA. Detection, *E. coli* genome residue ≤ 0.1 pg/40 U.

Applications

This product can be widely used in any experiment where RNase interference may exist to avoid RNA degradation, such as:

1. cDNA first-strand synthesis, RT-PCR, RT-qPCR, etc.;
2. Protect RNA from degradation during in vitro transcription/translation (such as in vitro viral replication system);
3. Inhibit RNase activity during RNA separation and purification.

Notes

1. Violent shaking or stirring will cause enzyme inactivation;
2. The inhibitor's active temperature is 25-55ºC, and it will be inactivated at a temperature of ≥65ºC;
3. It does not inhibit the activity of RNase H, RNase 1, and RNase T1;
4. The pH range for inhibiting RNase activity is relatively wide (it is active at pH 5-9), and it exhibits maximum activity at pH 7-8.