EDITGENE RNase Inhibitor Instruction Manual

► Product Information

Product Name	Catalog Number	Specification	Storage Conditions
RNase Inhibitor (40 U/μL)	EDHZ051-1	5 KU	- 20℃，2 years
RNase Inhibitor (40 U/μL)	EDHZ051-2	10 KU	- 20℃，2 years
RNase Inhibitor (40 U/μL)	EDHZ051-3	50 KU	- 20℃，2 years

► Product Description

RNase Inhibitor is a ~50 kDa protein that binds RNases through non-covalent interactions, effectively rendering them inactive.

EDITGENE's RNase Inhibitor is a recombinant human RNase inhibitor expressed in an E. coli system. It binds RNase A, B, and C specifically through non-competitive interactions, thereby inhibiting their enzymatic activity. However, when denaturants such as urea or thiol-based reagents are introduced, the inhibitor becomes inactive, and RNase A, B, and C refold and regain activity.

This product does **not** inhibit RNase I, T1, T2, H, U1, U2, CL3, fungal RNases (e.g., from *Aspergillus* species), S1 nuclease, Taq DNA polymerase, M-MLV reverse transcriptase, or phage RNA polymerases (SP6, T7, or T3).

RNase Inhibitor retains its RNAse-inhibiting activity within a pH range of 5-8, with optimal activity observed at pH 7-8.

Applications:

This product is primarily used for cDNA synthesis, RT-PCR, in vitro transcription, in vitro translation, enzymatic RNA labeling reactions, and protecting RNA from degradation during processes such as mRNA-protein complex separation and purification.

Activity Definition:

One activity unit (U) is defined as the amount of RNase Inhibitor required to inhibit 50% of the activity of 5 ng RNase A. RNase A activity is determined by its ability to hydrolyze cyclic 2',3'-CMP into 3'-CMP.

Inactivation:

Complete inactivation occurs after heating at 75° C for 10 minutes.

Heating at 70°C for 10 minutes may leave trace residual activity.

Inhibitors:

RNase Inhibitor's binding to RNase is strongly disrupted by common denaturants (e.g., SDS, urea) and all oxidizing agents (e.g., chlorodinitrobenzene, dissolved oxygen, or high-valence ions).

► Usage Instructions

For common reaction systems, such as cDNA synthesis, in vitro transcription, or in vitro translation, where RNA needs protection from RNase degradation, the recommended final concentration of RNase Inhibitor is 1-2 U/μL.

► Precautions

1. During use, keep the product on an ice box or ice bath. After use, return it to -20°C storage.
2. This product is for research use only by trained professionals. It is not intended for clinical diagnosis, treatment, or use in food or drugs.
3. For your safety and health, wear a lab coat and disposable gloves during operation.