RNase Inhibitor (Murine)

For research use only

Components

Component	R4001 (20,000 U)
RNase Inhibitor (Murine) (40 U/μl)	500 μl

Storage

This reagent should be kept at -20°C.

Description

RNase Inhibitor (Murine) is a recombinant murine source RNase inhibitor expressed in the soluble form in *E. coli*. It can inhibit a wide range of RNases (RNase A, B, C). It has been tested by RT-PCR, RT-qPCR and is compatible with various reverse transcriptase and DNA polymerases. Compared with human source RNase inhibitors, murine source RNase inhibitors do not contain two of the very oxidation-sensitive cysteines of human proteins, so they have higher antioxidant activity and are more suitable for experiments with high DTT sensitivity, such as qPCR.

Unit Definition

The amount of enzyme required to inhibit 50% of 5 ng RNase A activity was defined as 1 unit of activity (U). The activity of RNase A is quantitatively obtained by hydrolyzing 2 ', 3' -CMP to generate 3 '-CMP.

Quality Control

Exonuclease residue detection: 200 U of this product and 0.6 μg of λ-Hind III were incubated at 37°C for 16 h, and the DNA bands did not change after electrophoresis.

Detection of endonuclease residue: 200 U of this product and 0.6 μg of Supercoiled pBR322 DNA were incubated at 37°C for 4 h, and the DNA bands did not change after electrophoresis.

E.coli DNA residue detection: the nucleic acid residue in 200 U of this product was detected by *E. coli* gDNA-specific TaqMan qPCR, and the residue of *E. coli* genome was less than 10 copies.

Application

1. Synthesis of the first strand of cDNA
2. Polysome isolation
3. *In vitro* transcription
4. No cell translation system *in vitro*

Matters Needing Attention

1. RNase activity was inhibited by a wide range of pH values, with the maximum activity at pH 7 ~ 8.
2. Foaming or vigorous stirring (Vortex, etc.) can cause inactivation.
3. RNase H activity will not be inhibited.

Examples of Application

1. Prepare the following mixture in RNase-free centrifugal tube:

Component	Amount
5 × Gold Buffer	4 μl

Oligo $(dT)_{18}$ (50 μM)	1 μl
dNTP Mix (10 mM each)	1 μl
RNase inhibitor (Murine) (40 U/μl)	1 μl
Gold Reverse Transcriptase (200 U/μl)	1 μl
Template RNA	10 pg - 2.5 μg
RNase-free ddH_2O	to 20 μl

2. Blow gently with a pipette and mix well.

3. Conduct the first cDNA synthesis reaction according to the following conditions:

Temperature	**Time**
50°C	45 min
70°C	15 min

4. Store the product at -20°C.