

# Murine RNase Inhibitor



R301

Version 22.1

## Product Description

Murine RNase Inhibitor is a recombinant mouse-derived RNase inhibitor expressed and purified in *E. coli*. It can bind to RNase A, B or C in a non-competitive manner 1:1, thereby inhibiting the activities of the three enzymes and protecting RNA from degradation. Murine RNase Inhibitor is a thermostable-based RNase inhibitor that exhibits inhibitory activity even with thermostable reverse transcriptases such as HiScript Reverse Transcriptase and HiScript II Reverse Transcriptase. It is compatible with various commercial Reverse Transcriptases and DNA Polymerases. Compared with human RNase inhibitor, murine RNase inhibitor does not contain two cysteines that are very sensitive to oxidation in human protein, so it has higher antioxidant activity and is more suitable for experiments sensitive to high DTT (such as qPCR).

## Components

Components	R301-01 2,000 U	R301-02 10,000 U	R301-03 20,000 U
Murine RNase Inhibitor (40 U/ $\mu$ l)	50 $\mu$ l	250 $\mu$ l	500 $\mu$ l

## Storage

Store at -30 ~ -15°C and transport at  $\leq$ 0°C.

## Applications

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

1. cDNA first-strand synthesis, RT-PCR (both PCR and qPCR systems can be used).
2. Protection of RNA in in vitro transcription/translation (e.g. virus in vitro replication system).
3. Inhibit RNase activity during RNA isolation and purification.
4. RNase protection assay.

This product does not interfere with other commonly used enzymes in RNA preparation or analytical applications.

## Source

A recombinant *E. coli* strain carrying the RNase inhibitor gene cloned from mice.

## Unit definition

One unit (U) is defined as the enzyme needed for inhibiting 50% activity of 5 ng RNase A.

The activity of RNase A is detected by quantifying the inhibition of hydrolysis from Cyclic 2', 3'-CMP to 3'-CMP.

## Notes

For research use only. Not for use in diagnostic procedures.

1. Active temperature is 25 ~ 55°C, inactivated at 65°C and above.
2. The pH range of inhibiting RNase activity is 5.0 - 9.0, and 7.0 - 8.0 performs best.
3. Foaming or Vortex can cause inactivation.
4. It does not inhibit RNase H and RNase T1 activity.

## Experiment Process

1. Mix the following components in a RNase-free centrifuge tube:

RNase-free ddH <sub>2</sub> O	to 20 $\mu$ l
5 × HiScript Buffer	4 $\mu$ l
Oligo (dT) <sub>18</sub> (50 $\mu$ M)	1 $\mu$ l
dNTP Mix (10 mM each)	1 $\mu$ l
Murine RNase Inhibitor (40 U/ $\mu$ l)	1 $\mu$ l
HiScript Reverse Transcriptase (200 U/ $\mu$ l)	1 $\mu$ l
Template RNA	10 pg - 2.5 $\mu$ g

2. Mix gently.
3. 50°C 45 min, 70°C 15 min.
4. Store the product at -20°C.

