Murine RNase Inhibitor

Catalog No.: A0007

Description

*EZ*Bioscience® Murine RNase Inhibitor is a recombinant protein purified from an *E. coli* strain that carries the Ribonuclease Inhibitor gene from mouse. The inhibitor specifically inhibits RNases A, B and C. It inhibits RNases by binding noncovalently in a 1:1 ratio with high affinity. It is tested that no inhibition of polymerase activity is observed when RNase Inhibitor is used with *Taq* DNA Polymerase, AMV or M-MLV Reverse Transcriptases, or Phage RNA Polymerases (SP6, T7, or T3). Recombinant murine RNase inhibitor does not contain the pair of cysteines identified in the human version that is very sensitive to oxidation, which causes inactivation of the inhibitor. As a result, *EZ*Bioscience® Murine RNase Inhibitor has significantly improved resistance to oxidation compared to the human/porcine RNase inhibitors, and is stable at low DTT concentrations (< 1 mM). This makes it ideal for reactions where high concentration DTT is adverse to the reaction (eg. Real-time RT-PCR).

Components

Component	A0007	A0007-L
Murine RNase Inhibitor (40 U/μl)	110 μl	550 μl

Applications:

1. RT-PCR
2. cDNA synthesis
3. *In vitro* transcription/translation
4. Polysome isolation
5. Enzymatic RNA labeling reaction

Storage

Store at -20 °C.

Unit Definition

One unit is defined as the amount of Murine RNase Inhibitor required to inhibit the activity of 5ng of RNase A by 50%. Activity is measured by the inhibition of hydrolysis of cytidine 2, 3'-cyclic monophosphate by RNase A.

Quality Control Assays

Endonuclease Activity: Incubation of a reaction containing 200 U of Murine RNase Inhibitor with 600 ng supercoiled pBR322 plasmid for 4 hours at 37 °C made no change as determined by gel electrophoresis.

Exonuclease Assay: Incubation of a reaction containing 200 U of Murine RNase Inhibitor with 0.6 μg of *Hind* III digested λ DNA made no change as determined by gel electrophoresis.

***E. coli* DNA Residue Assay:** Less than ten copies of *E. coli* genome DNA were detected from 200 U of Murine RNase Inhibitor by specific amplifying *E. coli* 16S rRNA.

Notes on Use

Since ribonucleases typically retain activity under denaturing conditions, care must be taken to avoid denaturing RNase Inhibitor molecules which have complexed with a ribonuclease. To prevent the release of active ribonuclease, temperatures greater than 50 °C and high concentrations of urea or other denaturing agents should be avoided. It is not effective against RNase H.

The recommended concentration of RNase Inhibitor in a reaction is 2 U/μl. During assembly of a reaction, RNase Inhibitor should be added before other components that are a possible source of RNase contamination (i.e. enzymes, plasmid from a mini prep).