Rev.0

RNase Inhibitor, Murine
(rmRnh1)
Catalog #MB9048
20,000 units

Description

RNase Inhibitor, Murine (rmRnh1) is a 50 kDa recombinant protein of mouse origin. This RNase inhibitor specifically inactivates a wide spectrum of RNases, including RNase A, RNase B and C. For example, rmRnh1 (20 U/ 20 µl reaction) inhibits up to 1 ng RNase A (Figure 1). It is not effective against RNase T1, S1 Nuclease, RNase H or RNase from Aspergillus. It can be used in applications where RNases could be a potential problem, for example, RT-PCR, cDNA synthesis, *in vitro* transcription, and enzymatic RNA labeling reaction. The inhibitor does not interfere with enzymes commonly used to prepare or analyze RNA, such as, Taq DNA Polymerase, Phage RNA Polymerases, or M-MuLV reverse transcriptase.

Specifications

Source	*Escherichia coli*
Molecular Weight	50 kDa
Biological Activity	One unit of RNase inhibitor is defined as the amount of enzyme needed to inhibit the activity of 5 ng of RNase A by 50%.
Concentration	40 U/µl
Heat Inactivation	65°C for 10 minutes

Quality control

DNase or RNase activity was NOT detected by incubating rmRnh1 with single-stranded DNA, supercoiled plasmid DNA and human total RNA samples at 37°C for 4 hours.

Product Use

rmRnh1 is for research use only. It is not approved for human or animal use, or for application in clinical or *in vitro* diagnostic procedures.

Shipping and Storage

Dry ice. Upon receipt, store rmRnh1 at -20°C in a manual defrost freezer. rmRnh1 is supplied in buffer which consists of 50 mM KCl, 20 mM HEPES-KOH (pH 7.6), 14 mM 2-mercaptoethanol and 50% glycerol.

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Suggested working concentration for certain applications:

- >0.3 U/µl in one-step RT-PCR
- >1.5 U/µl in first-strand cDNA synthesis
- >1 U/µl for *in vitro* transcription

You may use higher concentrations of RNase Inhibitor in your application if you suspect that RNase contamination causes certain samples to degrade. An example of using rmRnh1 in a one-step RT-PCR reaction is provided, however, it will may to be optimized by the end user.

1. Prepare the one-step RT-PCR reaction with ScienCell's One-Step TaqProbe RT-qPCR Master Mix, 4x, MB802 (NOT included) as shown in Table 1.

Component	Volume	Final concentration
One-Step TaqProbe RT-qPCR Master Mix, 4x	5 µl	1x
Forward and reverse primers	variable	100-900 nM each
Fluorogenic probe(s)	variable	150-250 nM each
RNase Inhibitor	**0.3 µl**	**0.6 U/µl**
Template RNA	variable	1 pg – 1 µg
Nuclease-free water	variable	-
Total volume per reaction	20 µl	-

2. Refer to ScienCell's One-Step TaqProbe RT-qPCR Master Mix, 4x (Cat #MB802) instructions to perform the one-step RT-PCR reaction.

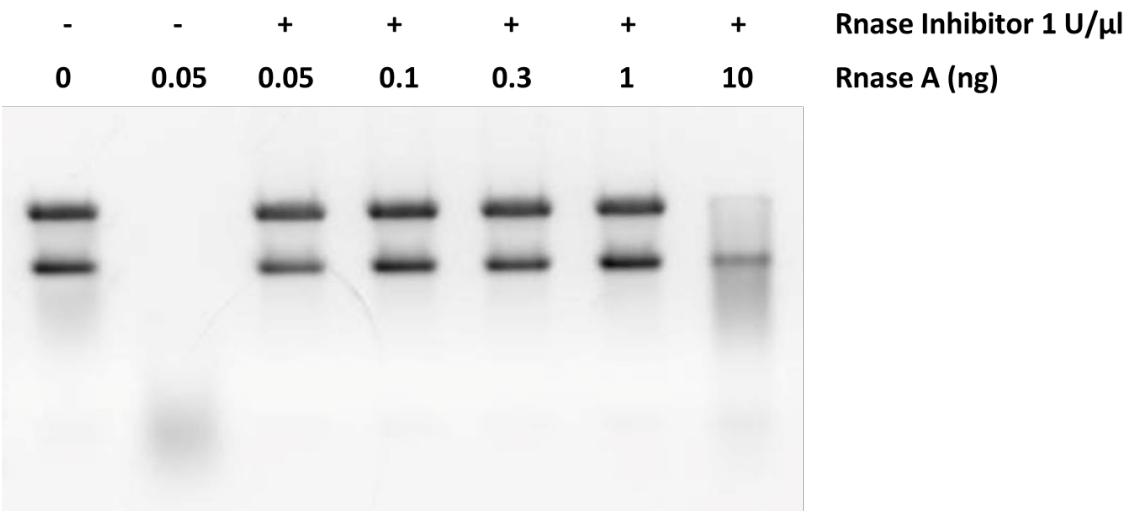

Figure 1. Protection of RNA from degradation by RNase A with RNase Inhibitor, Murine.
Human total RNA (2 µg) was incubated in a reaction volume of 20 µl in the absence or presence of RNase Inhibitor, Murine at 1 U/µl and various amounts of RNase A. Subsequent gel electrophoresis revealed that RNase Inhibitor, Murine inhibited RNase A at levels as high as 1 ng/20 µl.