Product information

QF 24 V4
V2 May 2022

Ribonuclease inhibitor

Catalog #: RB0478
Size: 1KU, 5KU
Storage: -30 ~ -15°C

Description:

Ribonuclease inhibitor is mouse-source recombinant protein expressed in E.coli. It can inhibit the activity of RNase A, B or C in a non-competitive way, protecting RNA from degradation. Murine RNase Inhibitor is a thermo-stable RNase inhibitor. It still has enzyme activity when using thermo-stable reverse transcriptase. It is compatible with various commercialized reverse transcriptase and DNA polymerase. Compared with human-source RNase inhibitor, mouse-source RNase inhibitor doesn't contain 2 oxidation-sensitive Cys. And therefore, it has a higher antioxidant activity and is more suitable for high-DTT-sensitive experiments (i.e. qPCR).

Storage:

Store at -30 ~ -15°C and transport at ≤0°C.

Application:

It can be used to protect RNA from degradation.
1. 1st strand cDNA synthesis in RT-PCR, PCR and qPCR.
2. In vitro reverse transcription/translation.
3. RNA isolation and purification.
4. RNase protection assay.

This product won't interfere with other enzymes during application.

Source:

It is purified from E.coli.

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 hydrolysis of Cyclic 2', 3'-CMP to 3'-CMP.

Notes:

1. The reaction temperature is 25 ~ 55°C. The RNase Inhibitor will be inactivated at temperature ≥65°C.
2. Ribonuclease inhibitor can inhibit RNase activity under a broad spectrum of pH (pH 5.0 - 9.0). The highest inhibitory activity is obtained at pH 7.0 - 8.0.
3. It can be inactivated by bubbling or stirring intensely (i.e. Vortexing).
4. No inhibitory activity for RNase H and RNase T1.

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

RNase-free ddH2O	to 20 µl
5 × HiScript Buffer	4 µl
Oligo (dT)18 (50 µM)	1 µl
dNTP Mix (10 mM each)	1 µl
Ribonuclease inhibitor (40 U/µl)	1 µl
HiScript ReverseTranscriptase (200 U/µl)	1 µl
Template RNA	10 pg - 2.5 µg

2. Incubate at 50°C for 45 minutes, then at 70°C for 15 min.
3. The products can be stored at -20°C .

Purpose:

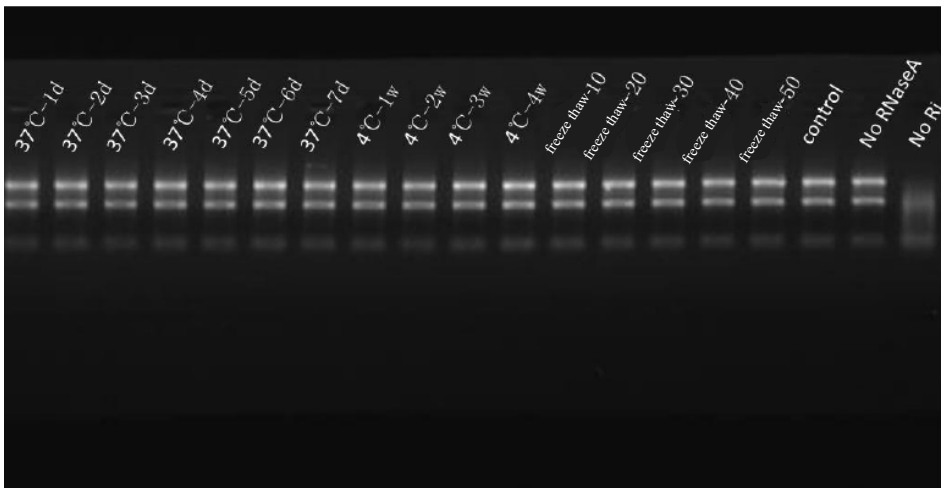
Ribonuclease inhibitor is treated with several conditions, freezing and thawing repeatedly. Then the integrity of RNA fragments is identified through agarose gel electrophoresis with the protection of RB0478.

Experiment Process:

2.1. Reagent Treatment Methods

a. Control reagent: Ribonuclease inhibitor stored at -20°C;
b. Time of reagent stored at 4°C: 1 week, 2 weeks, 3 weeks, 4 weeks;
c. Time of reagent stored at 37°C: 1 d, 3 d, 5 d, 7 d

3.1 The picture of agarose gel electrophoresis



37°C-1d: Ribonuclease inhibitor stored at 37°C for 1 day;
4°C-1w: Ribonuclease inhibitor stored at 4°C for 1 week;
Control: same batch of Ribonuclease inhibitor stored at -20°C;
No RNase A: Control product without RNase A and Ribonuclease inhibitor;
No Ri: Control product with RNase A and Ribonuclease inhibitor.

Conclusion:

According to the above experimental results, the following conclusions can be drawn: Ribonuclease inhibitor can remain active when stored at 37°C for 7 days, 4°C for 4 weeks and treated with 50 freeze-thaw cycles.

