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INNOVATION BIOTECHNOLOGY

Product overview

RNase Inhibitor, a recombinant human protein produced in *E. coli*, is a potent inhibitor of neutral pancreatic ribonucleases, including RNases A, B, and C. The mode of inhibition is noncompetitive; the inhibitor tightly binds RNases in a 1:1 ratio. The enzyme has been shown to inactivate a variety of RNases that are present in many tissues and cell types. RNase Inhibitor does not inhibit RNase T1, RNase 1, RNase H, S1 Nuclease, or RNase from *Aspergillus*.

Source

Recombinant *E. coli* strain

Unit definition

One unit is the amount of protein required to inhibit the activity of 5 ng of RNase A by 50%.

Storage buffer (not included)

20 mM HEPES-KOH (pH 7.6). 50 mM KCl, 5 mM DTT and 50% (v/v) glycerol. If opened frequently during storage, we recommend adding DTT to maintain the optimal 5 mM level.

Using RNase Inhibitor

Addition of RNase Inhibitor has been shown to be useful whenever the integrity of RNA must be maintained, such as in the preparation of cDNA by reverse transcription, *in vitro* RNA transcription, and *in vitro* protein synthesis. RNase Inhibitor requires a minimum of 1 mM DTT to maintain activity and requires a pH of 5-8, with maximal activity between pH 7 and 8. Since the mode of inhibition is the formation of a 1:1 complex with RNases, avoid denaturation or oxidation of RNase Inhibitor, which would result in the release of active RNase. The half-life of RNase Inhibitor : RNase A binding is approximately 8 hr.

Guidelines for RNA transcription, protein translation, and cDNA synthesis

Add RNase Inhibitor to transcription, translation, and cDNA synthesis reactions at a final concentration of 1 U/ μ L. RNase Inhibitor requires a minimum of 1 mM DTT and is active over a broad pH range. Avoid denaturation of RNase Inhibitor by SDS, urea, etc., which could result in a release of active RNases.

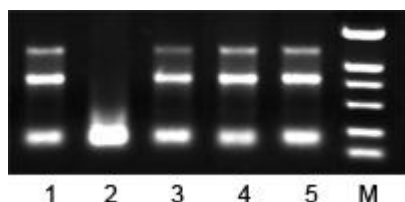


Fig. Human total RNA (1 μ g) with RNase A (200pg) 、 RNase Inhibitor (20U) at 37°C、 42°C & 55°C for 30min. Lane 1-5 :Human total RNA 37°C、 Human total RNA+RNase A 37°C、 Human total RNA+RNase A+RNase Inhibitor 37°C、 Human total RNA+RNase A+RNase Inhibitor 42°C、 Human total RNA+RNase A+RNase Inhibitor 55°C.

Store condition

Store at -20°C. Do not store in a frost-free freezer.

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