GENAXXON bioscience

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RNase Inhibitor, Murine

Glycerol free – rec. from mouse placenta

Product	Cat#	Package size
Glycerol free RNase Inhibitor, murine for reversible inhibition of RNases (200 units/µL)	M3169.2000	2000 units
Glycerol free RNase Inhibitor murine for reversible inhibition of RNases (200 units/µL)	M3169.1010	10000 units

Description:
The Genaxxon glycerol free RNase Inhibitor is a recombinant (*E.coli*) murine protein which inhibits ribonucleases (RNases) A, B and C. It does not inhibit RNase 1, RNase H, RNase T1, S1 Nuclease. Native RNase-Inhibitor from murine placenta exerts its inhibitory effect by binding non-covalently to RNases in a 1:1 ratio with high affinity.

There is no inhibition of polymerase activity when this RNase Inhibitor is used with AMV Reverse Transcriptase, M-MuLV Reverse Transcriptase, *Taq* DNA Polymerase or Phage RNA Polymerase (SP6, T7, or T3).

The enzyme is active over a broad pH range between 5 and 9, with a maximum activity at pH7 – pH8.

The inhibition of RNases is a reversible process. Reagents as urea or thiol reagents will lead to the dissociation of the Inhibitor-RNase-complex, resulting in re-natured and functional RNase and irreversibly deactivated RNase inhibitor.

Applications:

- RT-PCR
- cDNA synthesis
- *In vitro* transcription/translation
- Enzymatic RNA labelling reactions
- *In vitro* virus detection.
- Improvement of RNA translation in homologous systems.
- Preparations of RNase-free antibodies.
- Any application where eukaryotic RNase contamination is a potential problem.

Advantages:
The recombinant murine RNase inhibitor does not contain the cysteine pair that was identified to cause the high sensitivity against oxidation resulting in the inactivation of the human RNase inhibitor (1). As a result, the murine RNase inhibitor has significantly improved oxidation resistance compared to the human and porcine RNase inhibitors. In addition, murine RNase inhibitor is much more stable at low DTT concentrations (less than 1 mM), what makes it ideal for reactions where high DTT concentrations interfere with the reaction (e.g. real-time RT-PCR).

Product does not contain glycerol => lyo-ready product (ready for preparations of freeze-dried products).

Recommendations:

Since the RNase inhibitor protein is sensitive to denaturing agents and conditions, whereas RNases are not, care must be taken to avoid high concentrations of urea or other denaturing agents and temperatures above 50-55°C.

The recommended concentration of the RNase inhibitor is 1 unit/µL.

During set-up of a reaction, RNase inhibitor should be added before other components are added (enzymes, plasmids from mini preps, etc.).

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Source:	rec. from *E.coli* carrying the Ribonuclease inhibitor gene from mouse.
Concentration:	200 units/µL
Unit Definition:	One unit is defined as the amount of RNase Inhibitor to inhibit 5ng of RNase A by 50% at 25°C using Cytidine 2',3'-cyclic monophosphate (cCMP) as a substrate (generating 3'-CMP).
Storage buffer:	does not contain glycerol => lyo-ready product (ready for preparations of freeze-dried products).
Storage:	Storage at –20°C is recommended.

Quality control

After multiple column purification steps, SDS-PAGE gel showeds only a clear and single band at about 50 kDa. qPCR analysis detects no residual *E. coli* DNA and no contamination of nucleic acid endonucleases.

References:

1. Kim, B.M. et al. *Protein Science*. 8, 430-434.
2.

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