GENAXXON bioscience

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RNase Inhibitor

from human placenta

Product	Cat#	Package size
RNase Inhibitor for reversible inhibition of RNase	M3034.0500	500 units
RNase Inhibitor for reversible inhibition of RNase	M3034.2500	2500 units
RNase Inhibitor for reversible inhibition of RNase	M3034.1010	10000 units

Description:
The Genaxxon RNase Inhibitor is a recombinant human placental protein which inhibits ribonucleases (RNases) A, B and C. It does not inhibit RNase 1, RNase H, RNase T1, S1 Nuclease, or RNAse from Aspergillus. Native RNase-Inhibitor from human placenta exerts its inhibitory effect by binding non-covalently to RNases in a 1:1 ratio with an association constant of 1014.

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 8, with a maximum activity at pH7 – pH8.

Concentration: 20 units/µL up to 40 units/µL (for exact details see product label).

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.

Storage buffer: 20mM HEPES/KOH (pH7.6), 50mM KCl, 8mM DTT, 50% glycerol.

Storage: Storage at –20°C is recommended.

Quality Control:
Endonuclease: Contains no detectable endonuclease activity. Incubation of 200 units of the enzyme with supercoiled plasmid produced no nicked molecules after a 2-hour incubation at 37°C as determined by ethidium bromide stained DNA in an agarose gel.
Ribonuclease: No ribonuclease activity is observed after 1µg of RNA is incubated with 200 units of the enzyme for 60 minutes at 37°C. The RNA is electrophoresed on an agarose gel and stained with ethidium bromide. No latent ribonuclease activity is observed after 1µg RNA is incubated with 200 units of pre-heated enzyme for 60 minutes at 37°C. The RNA is electrophoresed on an agarose gel and stained with ethidium bromide.
DNase: 50ng of radiolabelled DNA is incubated with 200 units of enzyme for 60 minutes at 37°C, and the release of radiolabelled nucleotides is monitored by scintillation counting of TCA-soluble material. Minimum passing specifications <3% release of input radioactivity into TCA-soluble material.

Assay conditions: 20mM Tris/HCl (pH8.0 at 25°C), 2mM MnCl2, 100mM KCl, 1mM DTT, 0.6mM poly(rA), 0.1mM poly(dT) 10-20, 0.5mM dTTP(3H), 0.5-5 units of enzyme.

Note:
- Ribonuclease Inhibitor requires at least 1mM DTT to be active.
- Avoid temperatures above 50°C and high concentrations of urea or other denaturing agents.
- We recommend using 1 unit per reaction unit.

Application:
Any application where eukaryotic RNase contamination is a potential problem.
Protection of mRNA in cDNA synthesis reactions.
In vitro transcription/translation.
Improvement of in vitro virus detection.
Improvement of RNA translation in homologous systems.
Preparations of RNase-free antibodies.

Reference: Blackburn, P. (1979) J. Biol. Chem. 254, 12484

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