

DB RNase inhibitor human

DB-1259

General description

Recombinant version of human placental RNase inhibitor (expressed in *E. coli*).

DB RNase Inhibitor human inhibits a broad range of eukaryotic RNases including RNases A, B and C by high affinity binding to the active site forming non-covalent 1:1 complex. It is more efficient than the porcine, bovine, rat or mouse homologs in inhibiting human RNases in human samples such as blood, blood serum, blood plasma or saliva. It also shows good thermal and storage stability.

It does not inhibit RNases H, 1, T1, S1 Nuclease, SP6, T7 RNA Polymerase, T3 RNA Polymerase, AMV Reverse Transcriptase, M-MLV Reverse Transcriptase, or Taq Polymerase. The protein with the molecular weight of 50 kDa is active in a wide range of pH (5-8) and different buffer systems (Tris, HEPES, MOPS, PIPES). DTT (1 mM) is required in the buffer system for maintaining its activity.

We provide recombinant RNase inhibitors from multiple species with different properties. Please use the chart “RNase inhibitors” at <https://www.dianabiotech.com/proteins/> for selection of the optimal RNase inhibitor for your application.

Applications

DB RNase inhibitor human should be used in the amount of 1 unit per 1 µL of reaction, even though lower concentration might be sufficient for some applications (e.g., one step RT-qPCR).

Use of DB RNase inhibitor human is recommended in all applications where integrity of RNA needs to be protected against degradation by RNases contained either in the sample or from the environment:

- cDNA synthesis or one step RT-PCR including one step quantitative real-time RT-PCR,
- cDNA synthesis with thermostable reverse transcriptase at temperatures up to 50 °C,
- cDNA synthesis for subsequent cloning, especially of longer fragments,
- Expression profiling from single cells,
- In-vitro transcription and translation,
- RNA structural and functional studies,
- RNA purification.

DB RNase inhibitor human is active in common buffers used for reverse transcription, PCR, or *In vitro* translation.

Concentration: 40 U/µL

Specific activity: approx. 42 000 U/mg

Unit definition

One unit inhibits 5 ng of RNase A by 50 % using cytidine 2',3'-cyclic monophosphate (cCMP) as the substrate. Activity is measured in 100 mM Tris-acetate pH 6.5, 0.5 mM EDTA buffer, at 25 °C.



Kit Components

Kit component	REF code	Volume (µL)		Storage temperature	Cap colour
		2.5 kU	10 kU		
Human RNase inhibitor	RF05298	63	250	≤ -18 °C	

Storage buffer: 20 mM HEPES-KOH pH 7.5, 50 mM KCl, 8 mM DTT, 50 % v/v glycerol

Quality Control

For each lot, the activity of the protein is tested. The purity using SDS-PAGE is at least 90 %.

Each lot is assayed for the presence of DNase, RNase, latent RNase, and endonuclease activity.

Each lot is also assayed for *E. coli* genomic DNA.

Shelf life: 3 years

Shipment: Dry ice

Products

Catalogue No	Size
DB-1259-2.5kU	2 500 U
DB-1259-10kU	10 000 U

