

DB RNase inhibitor bovine

DB-1260

General description

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

Bovine RNase inhibitor is a more thermally stable and oxidative resistant alternative to the human RNase inhibitor. It shows high sequence identity to the human RNase inhibitor (74%) and is nearly as efficient as the human inhibitor in inhibition of human RNases (and more efficient than the porcine inhibitor). It is also speculated that the bovine inhibitor has generally broader activity against different RNases as there are more different pancreatic RNases present in cows vs humans (10.1021/bi701521q). It also contains less cysteines than the human inhibitor and is thus more stable in comparison to the human inhibitor but also to inhibitors from other species (mouse, rat and porcine). These advantageous properties make bovine inhibitor widely useful inhibitor in many applications. Recombinant bovine RNase inhibitor is a novel and unique product first brought to the market by DIANA Biotechnologies.

The protein with the molecular weight of 49 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 bovine should be used in the amount of 1 unit per 1 μ L of reaction, even though lower concentration might be sufficient for some applications (e.g., one step RT-qPCR).

Use of DB RNase inhibitor bovine 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.

Concentration: 40 U/ μ L

Specific activity: approx. 65 000 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 | | |
| Bovine RNase inhibitor | RF09550 | 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-1260-2.5kU | 2 500 U |
| DB-1260-10kU | 10 000 U |

