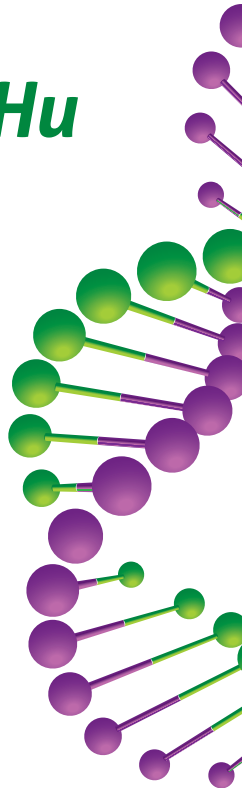
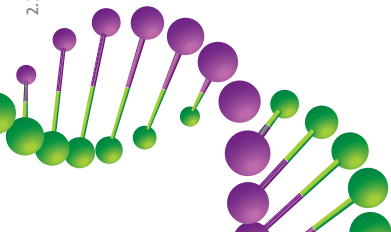


# ***RIBOPROTECT Hu***

RNase Inhibitor



2.2020

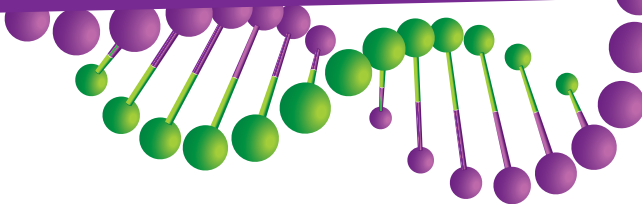


**blirt**

# **RIBOPROTECT *Hu***

## RNase Inhibitor

The **RIBOPROTECT *Hu*** RNase Inhibitor is a 50 kDa recombinant human placental protein expressed in *Escherichia coli*. It inhibits ribonuclease (RNase) activity of common eukaryotic enzymes such as RNase A, RNase B, RNase C by non-covalent binding in a 1:1 ratio. **RIBOPROTECT *Hu*** is intended for use in applications where the presence of RNases may cause a hazard to RNA quality and experiment results, e.g. in RNA isolation, cDNA synthesis, RT-PCR, *in vitro* transcription and translation, or RNase-free monoclonal antibody preparation. **RIBOPROTECT *Hu*** shows no activity towards RNase 1, RNase T1, RNase T2, S1 nuclease and RNase H. It is compatible with DNA Polymerases and AMV or M-MuLV Reverse Transcriptases.



## Features and advantages

- Completely inhibits RNase A, B and C activity
- No polymerase or reverse transcriptase activity
- Free of DNase and RNase activity
- Stable up to 58°C and at min. 0.5–1 mM DTT concentration ranges
- Active in diverse reaction conditions and in various buffers
- Active over a broad pH range (pH 5.5–9.0)
- Compatible with the **TRANSCRIPTME** Reverse Transcriptase (cat. no. RT32)
- Improved stability – stable up to 4 weeks at 37°C

## Applications

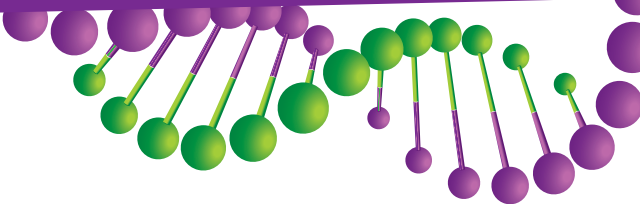
- RNA isolation and purification
- cDNA synthesis, RT-PCR, RT-qPCR
- *in vitro* transcription and translation
- RNase-free monoclonal antibody preparation

# ***RIBOPROTECT Hu***

## RNase Inhibitor

### Usage

- The optimal final concentration of the ***RIBOPROTECT Hu*** in a reaction depends on the level of RNase contamination, the incubation time and the compounds present in the reaction mixture. It falls within a range of 1–2 U/ $\mu$ L.
- For a standard reverse transcription reaction, use 1  $\mu$ L (40 U) of the ***RIBOPROTECT Hu*** for a final sample volume of 20  $\mu$ L.
- For the optimal ***RIBOPROTECT Hu*** activity, a final DTT (or other reducing agent) concentration of 0.5–1 mM is essential.
- During assembly of a reaction, ***RIBOPROTECT Hu*** should be added before other components that are possible sources of RNase contamination.
- Using ***RIBOPROTECT Hu*** does not exclude RNase H treatment after amplification of the first strand cDNA.



### Quality control

The absence of Endonuclease, Exonuclease, RNase and latent RNase activities has been confirmed using the relevant procedures. The purity is >90% as judged by SDS-polyacrylamide gels.

### Unit definition

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

# ***RIBOPROTECT Hu***

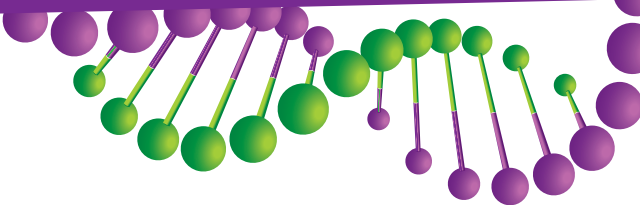
## RNase Inhibitor

### Additional information

- 0.5–1 mM DTT (or other reducing agent) presence is essential for optimal activity of the *RIBOPROTECT Hu* RNase Inhibitor.
- The storage buffer contains 8 mM reducing agent, however, if the ratio of the inhibitor to the final sample volume is less than 1:8, then the addition of DTT (or other reducing agent) to a final concentration of 0.5–1 mM is recommended.

### Storage buffer

20 mM HEPES-KOH (pH 7.6); 50 mM KCl; 8 mM reducing agent; 50% (v/v) glycerol



## Troubleshooting

Problem	Possible cause	Solution
No RNase Inhibitor activity	<i>RIBOPROTECT Hu</i> shows no activity towards the RNases present in the sample	Maintain aseptic working conditions. Use disposable gloves, changing them as frequently as required. Use RNase-free consumables. Only work in an area assigned for working with RNA and with equipment designated for that purpose. Use a different RNase inhibitor.
	DTT (or other reducing agent) concentration is too low	Add the required quantity of DTT (or other reducing agent) to a final concentration of 0.5–1 mM.
	No activity owing to denaturing conditions	Avoid conditions which compromise the <i>RIBOPROTECT Hu</i> activity. It is inhibited by denaturing agents, such as SDS, urea and oxidising substances.

# RIBOPROTECT Hu

## RNase Inhibitor

Component	RT35-020 2000 U	RT35-100 10 000 U	RT35-S 200 U
<i>RIBOPROTECT Hu</i> RNase Inhibitor (40 U/μl)	50 μl	250 μl	5 μl


### Storage & shipping

#### Storage conditions

Store at -20°C in a freezer without a defrost cycle.

#### Shipping conditions

Shipping on blue ice. In an exceptional cases shipping at RT is allowed unless it takes more than 7 days.

 For research use only

### Expiry

Information on the label