

# ***RIBOPROTECT Hu***

RNase Inhibitor / Lyo-ready



1.2021

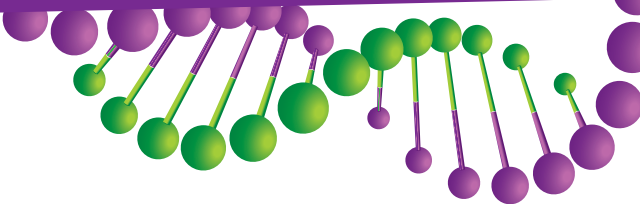
A decorative graphic of a DNA double helix, rendered in purple and green spheres connected by thin lines, spanning the right and bottom portions of the page.

**blirt**

# **RIBOPROTECT Hu**

## RNase Inhibitor / Lyo-ready

The **RIBOPROTECT Hu** RNase Inhibitor Lyo-ready is a 50 kDa recombinant human placental protein expressed in *Escherichia coli* in a special formulation (without glycerol). 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 RT-qPCR, RT-LAMP 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. Formulation of **RIBOPROTECT Hu** Lyo-ready enables its usage directly in the lyophilization process.



## Features and advantages

- Glycerol-free formulation ready for lyophilization
- Full stability at 37°C for at least 4 weeks and at 50°C for at least 6 hours.
- Completely inhibits RNase A, B and C activity
- No influence on the polymerase or reverse transcriptase activity
- Free of DNase and RNase activity
- Active in diverse reaction conditions and in various buffers
- Active over a broad pH (pH 5.5 – 9.0) and DTT ranges

## Applications

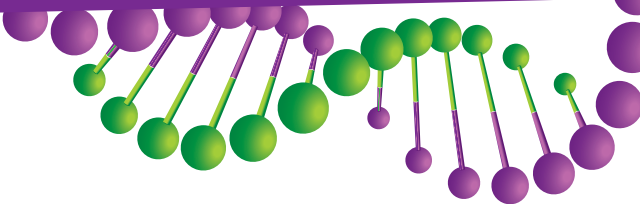
- cDNA synthesis, RT-PCR, RT-qPCR, RT-LAMP
- developing lyophilized diagnostic kits for optimal RNA protection
- RNA isolation and purification
- *in vitro* transcription and translation
- RNase-free monoclonal antibody preparation

# ***RIBOPROTECT Hu***

## RNase Inhibitor / Lyo-ready

### 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 40 U of the ***RIBOPROTECT Hu*** for the final sample volume of 20  $\mu$ L.
- For an optimal ***RIBOPROTECT Hu*** activity, the 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***

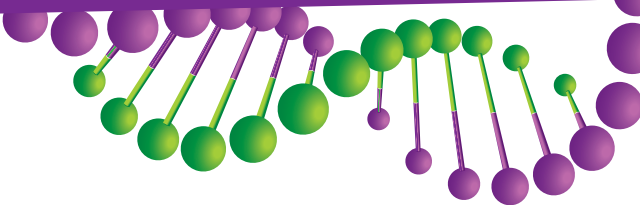
## RNase Inhibitor / Lyo-ready

### 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 RNase 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



## 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 / Lyo-ready

Component	RT35L-010 10 000 U	RT35L-B 1000 U
<i>RIBOPROTECT Hu</i> RNase Inhibitor Lyo-ready (40 U/ul)	250 µl	bulk volume upon request

## Storage & shipping

### Storage conditions

Store at 2–8°C for up to several weeks, for a long term storage -80°C is recommended, up to 3 freeze/thaw cycles is acceptable.

### Shipping conditions

Shipping on blue ice.

 For research use only

## Expiry

Information on the label.



BLIRT S.A.  
orders@blirt.eu | www.blirt.eu

Made in Poland