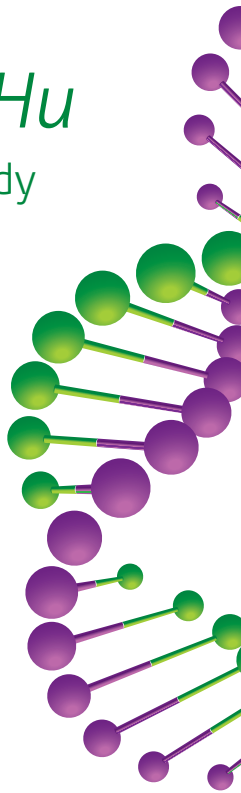
*RIBO*PROTECT Hu

RNase Inhibitor / Lyo-ready



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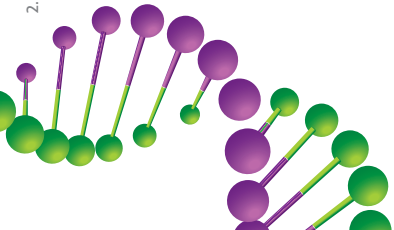

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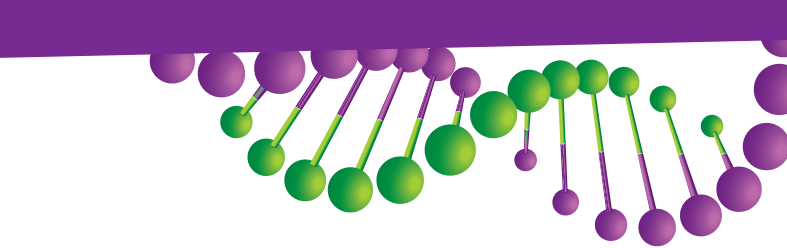
The ***RIBO****PROTECT Hu* RNase Inhibitor Lyo-ready is a 50 kDa recombinant human placental protein expressed in *Escherichia coli* in a special formulation (without glycerol*). It inhibits ribonuclease (RNase) activity of common eukaryotic enzymes such as RNase A, RNase B, RNase C by non-covalent binding in a 1:1 ratio. ***RIBO****PROTECT 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. ***RIBO****PROTECT 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 ***RIBO****PROTECT Hu* Lyo-ready enables its usage directly in the lyophilization process.

* Trace amounts of glycerol may be present



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

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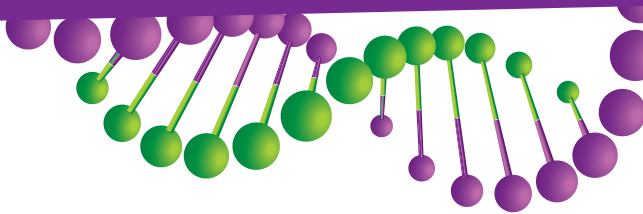
Usage

- The optimal final concentration of the ***RIBO****PROTECT 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/µl.
- For a standard reverse transcription reaction, use 40 U of the ***RIBO****PROTECT Hu* for the final sample volume of 20 µl.
- For an optimal ***RIBO****PROTECT Hu* activity, the final DTT (or other reducing agent) concentration of 0.5–1 mM is essential.
- During assembly of a reaction, ***RIBO****PROTECT Hu* should be added before other components that are possible sources of RNase contamination.
- Using ***RIBO****PROTECT 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%.

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Additional information

- → 0.5–1 mM DTT (or other reducing agent) presence is essential for optimal activity of the ***RIBO****PROTECT 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	***RIBO****PROTECT Hu* 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 denaturating conditions	Avoid conditions which compromise the ***RIBO****PROTECT Hu* activity. It is inhibited by denaturating agents, such as SDS, urea and oxidising substances.

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Component	RT35L-010 10 000 U	RT35L-B 1000 U
RIBOPROTECT Hu 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 4 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