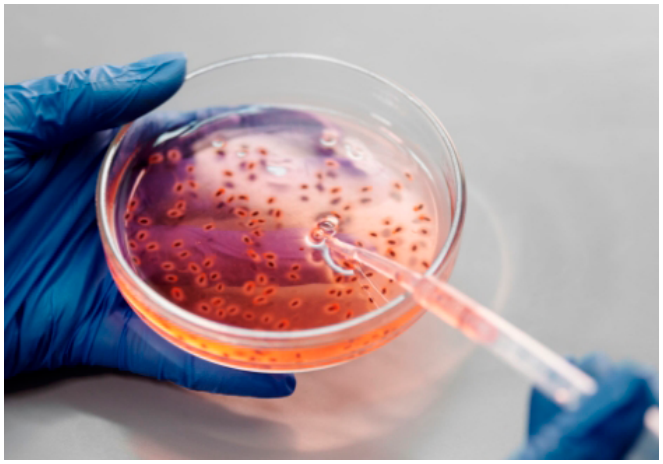
The best way to protect your RNA

In contrary to DNA, RNA is inherently more unstable and prone to heat degradation. Additionally, enzymes that degrade RNA, ribonucleases (RNases), are ubiquitous and hard to remove. For these reasons, obtaining high-quality RNA is very challenging, and an RNase-free environment is essential when handling RNA samples. There are numerous sources of RNases such as skin, dust, reagents, and biological samples. Due to the RNase omnipresence, it is crucial to maintain an RNase-free environment by wearing gloves, using sterile plasticware, DEPC-treated water, high-quality reagents guaranteed to be RNase-free, adequate decontamination techniques, proper RNA storage, and last but not least, an RNase inhibitor. Material degradation can be an obstacle in methods requiring a higher yield of intact RNA, such as RT-PCR, cDNA synthesis, RNA-sequencing, in vitro transcription/translation, and RNase-free monoclonal antibody preparation. RNA expression profiles are also frequently used in disease diagnostics, highlighting the need for its proper preservation and stabilization.



Make RNA extraction easy

High-performance RNA extraction can be challenging due to its structure and omnipresent endo- and exonucleases. Overcoming those issues requires additional procedures, special treatment, and optimization of isolation techniques. However, all these problems can be solved using pre-designed kits that facilitate successful RNA isolation from specific biological samples. Choosing a fitting extraction kit increases the chances of obtaining high quantities of pure RNA for further applications. Moreover, the quality of RNA samples isolated with commercial kits is always comparable, which significantly increases the reproducibility of downstream analyses.

Prevent RNA degradation

Although RNases play crucial roles in the maturation of all RNA molecules, their presence can significantly decrease the quantity and quality of extracted samples. Inhibition of RNase A, B, and C activity by RNase inhibitors, can successfully prevent RNA decline. Such effects are achieved via non-covalent 1:1 binding, a high-affinity protein-protein interaction resulting in forming one of the tightest known biomolecular complexes. Thus, the addition of an RNase inhibitor is crucial in RNA preservation, significantly increasing the sensitivity and reliability of diagnostic tests.

RNase inhibitor tailored to your application

What other features should characterize an effective RNase inhibitor? A real game-changer in molecular diagnostics is lyophilization-compatible RNase inhibitor. The production of a Lyo-Ready product variant is challenging due to the lack of glycerol, the stabilization factor that impedes lyophilization. Thus, sourcing an RNase inhibitor that retains the product's characteristics after lyophilization and reconstitution is crucial. Additionally, this factor is critical in the process of co-lyophilization with reaction additives used in specific diagnostic tests. Yet another valuable feature is the stability of the RNase inhibitor at elevated temperatures, which guarantees its continued activity without re-addition, significantly improving the cost-efficiency of the product.

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At BLIRT, we offer the *RIBO*PROTECT Hu RNase Inhibitor in two versions, standard and Lyo-Ready. Our product does not inhibit reverse transcriptase and polymerase activity, which proves its high reagent cross-compatibility. Our customers successfully use *RIBO*PROTECT Hu to develop their innovative applications [1-6] and molecular diagnostic tests, including RT-PCR and RT-LAMP methods. If you are searching for the highest levels of RNA protection, consistency, and reproducibility, ask us for a sample of *RIBO*PROTECT Hu.

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