

GenTegraRNA™ Active Chemical Protection™

Better than shipping on dry ice. Safer than shipping on dry ice.

RNA is precious and labile, and GenTegraRNA is the only product that provides immediate protection against RNase attack, when the RNA solution is eluted directly into GenTegraRNA. Protection against high temperatures when shipping RNA samples to the central analysis lab for RNAseq. Your samples arrive as higher quality RNA when shipped dry and protected by GenTegraRNA. A recent independent publication¹ reports GenTegraRNA delivered a better quality RNA with 17% more scaffolds than shipping frozen on dry ice. Your RNA samples are stabilized in both the liquid form for safer handling in the laboratory, and



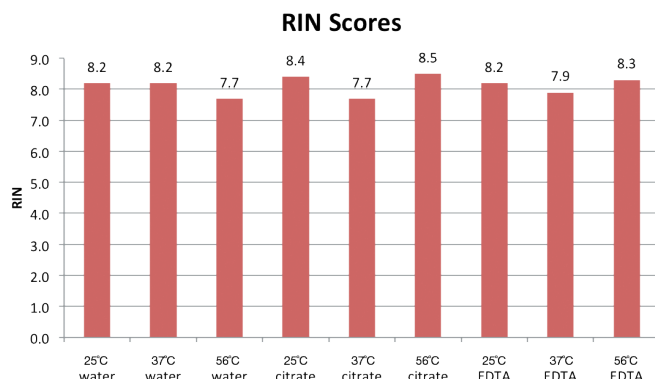
after drying, for shipping or long term storage. GenTegraRNA is insurance against high temperatures and delays when shipping RNA samples. Delays of a few days or even weeks will not harm your precious RNA samples, which does happen if the delay exhausts the dry ice. The cost of shipping a sample on dry ice can be 25 times the cost of a tube of GenTegraRNA.

Recovering your sample after shipping is fast and easy. Simply add molecular biology grade water to recover 100% of your sample, and it is immediately ready for all downstream applications. No preliminary cleanup step is required when using GenTegraRNA, the samples go directly into the analysis or NGS protocol.

But wait a minute, you say, isn't frozen the only safe way to protect and store RNA? The answer is no and another recent publication² reports that RNA frozen at -80°C showed degradation after only 8-months of storage. Our data for RNA stored for 4-years and temperature stressed to simulate >9 years shows the RNA to be very well protected³.

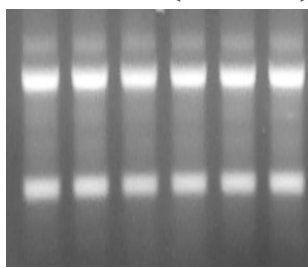
Better than Protected, Protected BETTER!

GenTegraRNA is the only dry storage product available that protects against both RNase contamination and against the high temperature experienced when shipping samples by express carriers. Your GenTegraRNA protected sample can be used safely at room temperature for up to 100 hours before it should be dried for long term storage or for shipping. GenTegraRNA can also be used with all the common buffers TE, EDTA, H2O etc. without affecting its protection. And no special requirements for desiccation are necessary when shipping or storing RNA samples protected on GenTegraRNA. Just drop the tube in a shipping envelope and send it on its way, knowing its better protected than if it were in several pounds of dry ice.



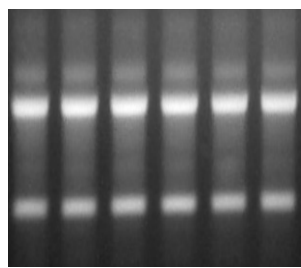
Agilent Bioanalyzer (RIN) scores for purified HeLa RNA samples after 3.5 years of mixed temperature, dry state preservation on GenTegraRNA.

Frozen ctrl (RIN = 10)



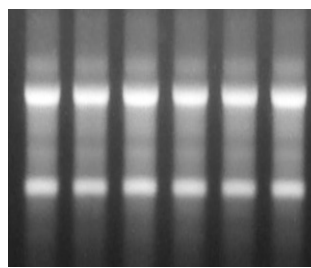
water citrate EDTA
RIN Score

25 °C



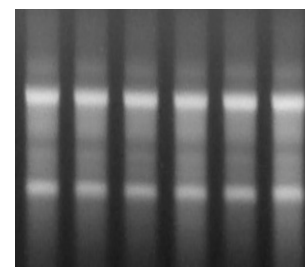
water citrate EDTA
10 10 10

37 °C



water citrate EDTA
9.6 9.3 9.7

56 °C



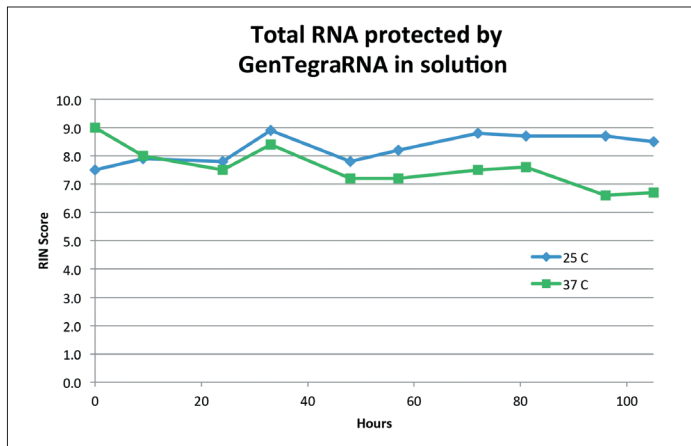
water citrate EDTA
8 8.1 8.5

2% agarose gels of purified HeLa RNA samples in water, citrate, and EDTA solutions stored frozen (controls) or applied to GenTegraRNA, then air-dried and stored at 25 °C, 37 °C, and 56 °C for six months. High Agilent Bioanalyzer (RIN) scores reveal the high quality of samples preserved on GenTegraRNA.

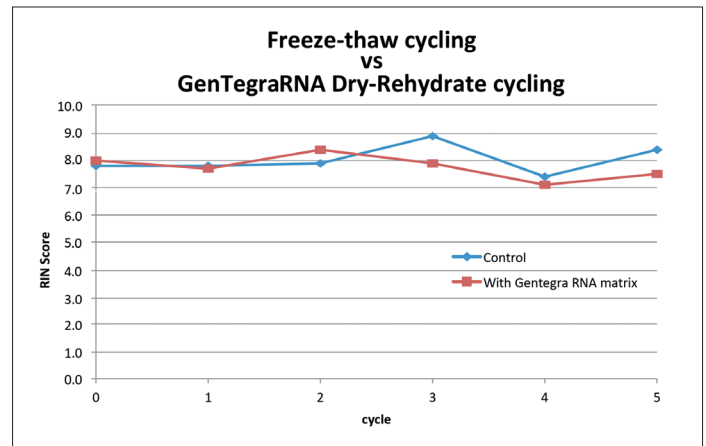
Protect in solution and dry state

GenTegraRNA protects your samples in three ways. In liquid form, it preserves sample integrity for up to 100 hours at 25 °C. When dried, it stabilizes samples for indefinite periods of storage at am-

bient temperature. And, it provides quantitative integrity of samples through several cycles of drying and rehydration.



GenTegraRNA stabilizes Total RNA samples at 25 °C and 37 °C in solution for 100 hours.



GenTegraRNA protects RNA samples through several cycles of drying and rehydration. Control was frozen and thawed for each cycle.

Stabilize with GenTegraRNA



Dry sample and ship at ambient temperature



Recovery, add water, and use in RNAseq

Product Specification	Product Claims
Format	0.5 mL screw cap tubes 0.3 mL 96-tube racks 96-well microtiter plate* Dry bulk
Total RNA application amount	≤ 20 µg
Sample Application Volume	20-50 µl Volumes between 1-20uL require special handling, see user guide.
Recovery volume	Equals application volume (20 – 50 µL of molecular biology water)
Stability for transport	Tolerance for extreme temperatures and extreme temperature shifts (-80 °C to 76 °C) Exceeds Military specifications (-60 °C to 71 °C) Exceeds Federal Express® specifications (-51 °C to 60 °C)
Shelf life	3 years (prior to use)
Drying	FastDryer™: Overnight SpeedVac®: 2 – 3 hours, depending on volume/type of SpeedVac Under Biosafety Hood: 14 hours
Recover	>99%

*barcode optional

¹ Johnson, Marc T. J., et al. Evaluating Methods for Isolating Total RNA and Predicting the Success of Sequencing Phylogenetically Diverse Plant Transcriptomes. PLOS ONE, 2012; 7, (11) e50226: 1-12.

² Olivieri, Eloisa H. R., et al. Biobanking Practice: RNA Storage at Low Concentration Affects Integrity. BIOPRESERVATION AND BIOBANKING, 2014;12, (1): 46-52

³ Data available upon request.