

Room Temperature Storage & Shipping of Purified RNA

As generating expression profiles with next-generation sequencing becomes more popular, the need for a reliable method to transport RNA is paramount. It is increasingly common for collaboration among multiple sites where RNA is purified at one location and analyzed at another. Current methods include overnight shipments on dry ice or drying samples into a gel matrix.

Transporting purified RNA offers unique challenges as the sample can degrade during shipment, in preparation for shipment, in transit, or during the receiving process. During transit, samples can also degrade due to carrier delays, samples becoming displaced from the dry ice, or dry ice evaporation. With these conditions in mind, Omega Bio-tek has developed RNA Transport to eliminate dry ice shipments, allowing for samples to be shipped via ground transportation at significant cost savings while maintaining RNA quality.

Effects of Room Temperature Storage with RNA Transport

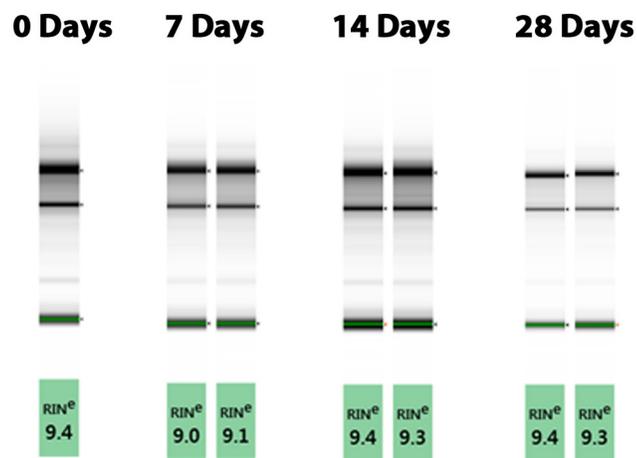


Figure 1. Total RNA was purified from cultured cells using the E.Z.N.A.[®] Total RNA Kit I. 4 µg of sample was aliquoted to individual tubes containing RNA Transport stored at room temperature for the indicated days. RNA was re-purified using RNA Transport's purification method which takes less than 5 minutes per sample set. RNA quality was analyzed on Agilent's TapeStation[®] 2200.

To stabilize purified RNA, samples simply need to be mixed with RNA Transport. No long, tedious lyophilization steps or creating a gel matrix; in less than 10 seconds, your RNA sample is protected. Once received, RNA samples can be left at room temperature until the receiving site is ready to process them, thus eliminating the need for -80°C storage.

When ready for downstream applications, a simple 7 minutes utilizing recovery columns removes RNA Transport and elutes the sample in nuclease free water.

Flexibility

RNA Transport allows customers to ship samples any day of the week instead of limiting shipments to Monday through Wednesday. Even in extreme temperatures during winter and summer months, RNA Transport is able to protect samples for use in downstream applications.

International customers have the added security that if samples are delayed in customs, the RNA will still be intact and safe.

Variable Temperatures

Sample	RIN ^e Value
Original sample	9.4
2x freeze thaw A	9.1
2x freeze thaw B	9.0
37°C for 7 days A	8.4
37°C for 7 days B	8.5

Figure 2. Total RNA was purified from cultured cells using the E.Z.N.A.[®] Total RNA Kit I. 4 µg of RNA was aliquoted to individual tubes containing RNA Transport then stored at -20°C for 24 hours, thawed at room temperature or the indicated days. RNA was re-purified using the RNA Transport purification method, which takes less than 5 minutes per sample set. RNA quality was analyzed via Agilent's TapeStation[®] 2200.

Automation

For core facilities and sequencing centers, a common problem is receiving samples in various plasticware which is not compatible with automation or does not match existing labware definitions. Having customers who use RNA Transport allows for your procedures to be standardized and sample transfer to be automated with liquid handling instruments with individual probes, such as Hamilton Microlab[®] STAR[™]/STARlet[™], Tecan Evo[®], and Beckman Coulter Biomek[®] FX/NX.

Save on Shipping Costs

RNA Transport eliminates the need for costly bulk boxes, dry ice, styrofoam containers, and overnight shipping. The bulky packaging requirements for dry ice increases shipping charges and usually requires an overnight service or, with international shipments, that dry ice can be replenished. RNA Transport is supplied in a 12 mm screw cap, 2.0 mL vials for ease of use and reduction of shipping costs.

Cost of Shipping RNA Samples

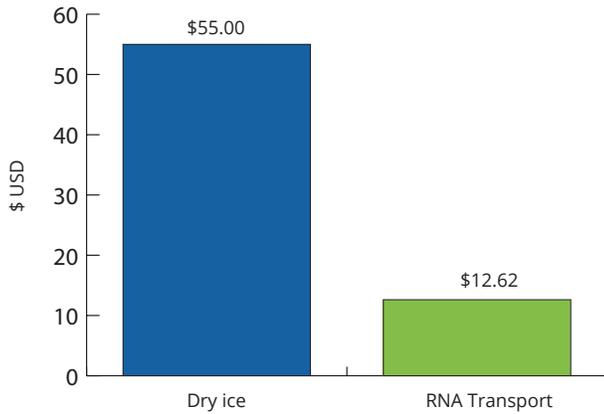


Figure 3. Cost analysis of shipping dry ice packages overnight versus shipping in smaller packages via ground shipments.

Product Information

Description	Product No.	Preps
RNA Transport	R0527-00	5
	R0527-01	50
E.Z.N.A. [®] Total RNA Kit I	R6834-01	50
	R6834-02	200
HiBind [®] RNA mini columns	RNACOL-01	50
	RNACOL-02	100