

RNAstable Procedure

RNAstable offers a way to store the RNA sample for long term without degradation, and ship dried RNA samples at ambient temperature in a moisture-barrier sealed bag. It is important that the starting RNA sample is **completely dry, free from any RNases, and very pure**. Our procedure is directly from Biomatrix's online procedure and referenced here. An online hand book is available at:

http://www.biomatrix.com/downloads/FINAL_RNAstable_Handbook.pdf

RNAstable preserves RNA samples at room temperature up to 100 μ l [\leq 100 μ g]. Each tube contains RNAstable provided as a coating at the bottom of the tube or well, which protects picogram to microgram amounts of RNA.

RNAstable is formulated so that upon application of liquid samples, the medium dissolves and forms a protective coating around the RNA. The sample must then be completely dried for maximum protection and stability for storage at ambient temperatures.

Supplies:

(Please note JGI does not support plate format for RNA samples at this time)

Supplies can be purchased from <http://www.biomatrix.com/rnastable.php>

RNAstable tube kit: [93221-001](#)

Moisture barrier foil bags: [14001-007](#)

Protocol: Sample Drying and Storage:

Note: We recommended that you test your sample first using RNA Stable on a small aliquot of your sample.

1. Determine the amount of purified RNA (μ g/ml) in the sample and calculate the amount to be applied into RNAstable tubes, (please take into account that when your sample arrives at the JGI, it will be rehydrated in 25 μ L of DEPC- treated (nuclease-free) water).

RNA should be resuspended in DEPC- treated water (nuclease-free) water prior to application on RNAstable.

2. Open cap on the tube. Gently add up to 100 μ l [\leq 100 μ g] of the sample directly into the center of each tube containing RNAstable.

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For optimal sample protection and recovery, the final volume of the sample applied to each well should be $\leq 20\mu\text{l}$. Do not exceed applying $100\mu\text{l}$ water per tube.

- Mix the sample thoroughly with gentle pipetting (avoid forming air bubbles).
- Leave the tube open to dry overnight in laminar flow hood.

For volumes $\geq 20\mu\text{l}$, or for accelerated drying, please use a vacuum with no heat to ensure complete sample drying (e.g. SpeedVac).

- Drying should occur at ambient laboratory temperatures (20°C – 25°C) with relative humidity below 50%.

Recommended Drying Times:

Sample Volume	Drying times with SpeedVac (no heat)
$10\mu\text{l}$ - $20\mu\text{l}$ *	30 minutes
$>2\mu\text{l}$ - $30\mu\text{l}$	1 hour
$>30\mu\text{l}$ - $100\mu\text{l}$	1.5 hours

**RNAstable is designed for optimal protection and recovery for sample volumes of $\leq 20\mu\text{l}$.*

- Tightly recap sample tubes after drying and store at room temperature in a sealed moisture barrier foil bag. RNAstable is sensitive to humidity. It is therefore critical to maintain stored samples in an environment with relative humidity below 50%. Store all samples in sealed moisture barrier foil bags at room temperature.

Shipping:

After approval from the JGI Project Management office, ship dried sample in a moisture barrier foil sealed bag with desiccant in a secondary container. Ensure that the box for RNAstable is checked on the "JGI Shipping Checklist" indicating the number of treated tubes. Ship sample/s with a copy of both the JGI shipping email and Shipping Checklist.