

RNAstore Reagent

ODP408

Storage

RNAstore Reagent should be stored dry at room temperature (15–25°C) and are stable for at least 12 months under these conditions. Storage of RNAstore Reagent at lower temperatures may cause precipitation. Before using the reagent, redissolve the precipitate by heating to 37°C.

Introduction

RNAstore Reagent is a novel technology for immediate preservation of the gene expression pattern in animal tissues, enabling reliable gene expression analysis. After harvesting, tissues are immediately submerged in RNAstore Reagent, which rapidly permeates the tissues to stabilize and protect cellular RNA in situ. The reagent preserves RNA for up to 1 day at 37°C, 7 days at 15–25°C, or 4 weeks at 2–8°C, allowing transportation, storage, and shipping of samples without ice or dry ice. Alternatively, the samples can be archived at –20°C or –80°C. During storage or transport in RNAstore Reagent, even at elevated temperatures (e.g., room temperature or 37°C), the cellular RNA remains intact and undegraded. RNAstore technology allows large numbers of samples to be easily processed and replaces inconvenient, dangerous, and equipment-intensive methods, such as snap-freezing of samples in liquid nitrogen, storage at –80°C, cutting and weighing on dry ice, or immediate processing of harvested samples. RNAstore Reagent can be used for various animal tissues, including brain, heart, kidney, spleen, lung, liver, thymus, etc.

Recommended amount of RNAstore Reagent for different tissues (mouse):

Tissue	Weight (g)	RNAstore Reagent
Kidney	0.1 – 0.5	1 – 5mL
Spleen	0.1 – 0.3	1 – 3mL
Lung	0.1 – 0.3	1 – 3mL
Heart	0.1 – 0.17	1 – 1.7mL
Liver	0.1 – 1.0	1 – 10mL

Protocol

1. Determine the appropriate volume of RNASTORE Reagent for preserving the tissue. At least 10 volumes of the reagent (or approximately 1mL reagent per 100mg of tissue) is required. Pipette the correct amount of reagent into an appropriate collection vessel.
2. Cut the tissue sample from the animal and, if necessary, cut it into slices less than 0.5cm thick.

Note: For effective RNA stabilization, the tissue sample must be less than 0.5cm thick.

3. Completely submerge the tissue piece(s) in the collection vessel containing RNASTORE Reagent.

Note: The tissue sample must be immediately submerged in RNASTORE Reagent to protect the RNA.

4. Store the tissue submerged in RNASTORE Reagent for up to 4 weeks at 2–8°C, up to 7 days at 15–25°C, or up to 1 day at 37°C.

Note: Lower temperature is recommended for longer storage (e.g., 2–8°C for up to 4 weeks instead of 37°C or room temperature; –20°C or –80°C for longer storage).

Important Notes

1. RNASTORE stabilized tissues stored at –20°C or –80°C can be thawed at room temperature and frozen again for up to 20 freeze–thaw cycles without affecting RNA quality or yield.
2. If transporting tissue samples in RNASTORE Reagent, ensure that the tissues always remain submerged in the reagent.
3. Be sure to remove tissues from RNASTORE Reagent prior to the RNA purification procedure.
4. RNASTORE Reagent is only suitable for fresh animal tissues that have not been frozen.
5. After harvesting, the tissue should be immediately placed in at least 10 volumes of the RNASTORE Reagent.
6. To ensure rapid and reliable stabilization of RNA even in the inner parts of solid tissues, the sample must be cut into slices less than 0.5cm thick. If the slices are thicker than 0.5cm, the reagent will diffuse too slowly into the interior of the sample and RNA degradation will occur.