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# RNA keeper Stabilization Buffer

**Product Number: RNK1501**

## Shipping and Storage

Transparent liquid with a storage period of 12 months at room temperature (18-25 ℃). If precipitation or precipitation is found during use, it can be re dissolved by heating at 37 ℃ and used without affecting product quality.

## Description

Suitable for animal tissues (heart, liver, kidney, muscle, testes, brain, spleen, etc.), cultured cells, RNA viruses, fruit flies, bacteria, white blood cells, whole blood, some plant tissues, etc.

RNA keeper stabilization buffer is an aqueous, non-toxic tissue preservation liquid that can quickly penetrate into the cytoplasm of fresh tissue cells, stabilizing and protecting intracellular RNA in situ under non freezing conditions. After removing the tissue slice, immediately immerse it in the RNA keeper stabilization buffer for preservation without affecting the quality and quantity of future RNA extraction. The RNA keeper stabilization buffer eliminates the inconvenience of immediate processing or the need for liquid nitrogen storage of RNA samples. After immersion in the RNA keeper stabilization buffer, RNA in fresh tissue cells can be stored intact for one day at 37℃, one week at 25℃, one month at 4℃, and long-term at -20℃ or -80℃. RNA virus samples (such as HCV and HIV) can be stored at 37℃ for one month.

## Features

1. **Easy to operate:** Cut the tissue into appropriate sizes and immerse it in the RNA keeper stabilization buffer to prevent RNA degradation.
2. **No need for liquid nitrogen:** The storage of samples does not require liquid nitrogen, dry ice or -80 ℃ refrigerator, especially suitable for rapid and large-scale collection of clinical and field samples.
3. **Convenient transportation:** Processed samples can be stored at 25 ℃ for a week, making it easy and cost-effective for sample mailing and transportation, which is beneficial for academic cooperation and exchange.
4. **Multiple freeze-thaw cycles:** Samples treated with RNA keeper stabilization buffer can undergo multiple freeze-thaw cycles, during which various treatments can be performed on the samples without affecting the quality of the final extracted RNA.
5. **Strong comparability:** RNA keeper stabilization buffer can reduce errors in large-scale sample processing, increase comparability between experimental numbers, and is particularly useful for analyzing large-scale gene expression profiles.
6. **Wide compatibility:** Multiple total RNA extraction reagents can be used to extract samples stored in RNA keeper stabilization buffer. It can also be directly used for tissue sectioning, immunology, and flow cytometry analysis without affecting the quality of RNA extraction.

## How to use RNA keeper Stabilization Buffer

The RNA keeper stabilization buffer is only used for fresh tissues, and tissue freezing is prohibited before soaking in the RNA keeper stabilization buffer. Just quickly cut the fresh tissue and soak it in an RNA keeper stabilization buffer with a thickness of less than 0.5 centimeters on either side (as long as one side does not exceed 0.5 centimeters in thickness, the RNA keeper stabilization buffer can quickly penetrate, and the size of the other sides is not important). Soak fresh tissue in 5 times the volume of RNA keeper stabilization buffer and store at the appropriate temperature as instructed.

**1. Animal tissue**

The RNA keeper stabilization buffer does not damage or dissolve tissue structure, so tissues soaked in the RNA keeper stabilization buffer to achieve osmotic balance can be removed from the RNA keeper stabilization buffer, cut into smaller pieces, and then placed back in the RNA keeper stabilization buffer for further use. Small organs such as mouse liver, kidney, and spleen do not require cutting and can be stored intact in RNA keeper stabilization buffer.

**2. plant tissue**

Many plant tissues can be directly immersed in the RNA keeper stabilization buffer. Some plants have natural permeation barriers such as a wax protective layer, which needs to be destroyed first to facilitate the penetration of the RNA keeper stabilization buffer.

**3. Tissue cultured cells**

After blowing down the cells, collect them by centrifugation, discard the supernatant, and wash with PBS buffer in an ice bath to remove any residual culture medium. Suspend cells in a small amount of PBS buffer. Add five to ten times the volume of RNA keeper stabilization buffer and mix evenly.

**4. Blood and plasma**

White blood cells separated from red blood cells and serum can be preserved just like tissue cultured cells. RNA keeper Stability Buffer can also store anticoagulant whole blood, serum, and plasma. Add 3 times the volume of RNA keeper stabilization buffer to the whole blood and mix well.

**5. Yeast**

Centrifuge collection $3 \times 10^8$ cells (>12000g centrifuged for two minutes) were immediately resuspended in 0.5-1 ml of RNA keeper stabilization buffer. Yeast cells can be stored in RNA keeper stabilization buffer at 25℃ for 8 hours or 4℃ for a week. If yeast cells need to be stored for a longer period of time, they should be placed in an RNA keeper stabilization buffer for one hour, then centrifuged at>12000g for 5 minutes. The yeast cell clusters should be placed in liquid nitrogen for instantaneous freezing and stored at -80℃.

**6. Bacterium**

Bacteria cannot grow in RNA keeper stabilization buffer, but RNA keeper stabilization buffer does not destroy bacteria. E.coli can still produce complete RNA after being stored at 4℃ for one month.

## Sample storage in RNA keeper Stabilization Buffer

**1. Store at -80℃**

For long-term preservation of document samples. Place the sample in the RNA Keeper Stability Buffer overnight at 4℃, then remove the sample and try to remove the clean RNA Keeper Stability Buffer liquid as much as possible, then place it at -80℃ For tissue cultured cells, there is no need to remove the RNA keeper stabilization buffer, and they can be directly frozen at -80℃ without cell lysis. The sample can be melted at room temperature during use and can also be re frozen without affecting the integrity and yield of RNA.

**2. Store at -20℃**

Place the sample in the RNA keeper stabilization buffer overnight at 4℃ and transfer it to -20℃. The sample will not be frozen at -20℃, but it may form some crystals, which will not affect future RNA extraction. The sample can be melted at room temperature during use and can also be re frozen without affecting the integrity and yield of RNA.

**3. Store at 4℃**

The sample can be stored at 4℃ for one month.

**4. Store at 25℃**

The RNA stored in the sample at 25℃ remained intact for one week, while the RNA in the sample stored for two weeks showed slight degradation and could barely be used for northern analysis, but the quality was sufficient for nuclear protection assessment or RT-PCR analysis.

**5. Store at 37℃**

The RNA stored in the 37℃ sample remains intact for 24 hours and partially degrades after 3 days

## RNA extraction of RNA keeper Stabilization Buffer preserved samples

Remove the sample from the RNA keeper stabilization buffer, which can be directly poured into a water tank and rinsed with tap water without special treatment.

**1. Tissue**

Use clean tweezers to remove the sample from the RNA keeper stabilization buffer, and use absorbent paper to slightly remove

the remaining RNA keeper stabilization buffer. After that, extract RNA using the standard procedure of liquid nitrogen grinding and homogenization treatment, just like fresh tissue.

**2. Cell**

There are two options for cells stored in the RNA keeper stabilization buffer. One is to extract RNA after removing the RNA keeper stabilization buffer, and the other is to extract RNA directly from a mixture of cells and RNA keeper stabilization buffer.

2.1. Extract RNA after removing RNA keeper stabilization buffer

Cells stored in RNA keeper stabilization buffer become less fragile and can withstand higher centrifugation speeds without being lysed. We have experience in successfully collecting cells by centrifugation at 5000g. As the strength of each type of cell varies, we can first conduct a preliminary experiment with unimportant cells to ensure that centrifugation does not damage the cells at the appropriate speed. Another option is to dilute the mixture of RNA keeper stabilization buffer and cells with an equal volume of PBS before centrifugation to reduce the density of the solution and allow the cell solution to precipitate.

2.2. Extract RNA directly without removing RNA keeper stabilization buffer

You can also directly add 10 times the volume of a one-step extraction reagent (such as Trizoe, Trizoe Reagent) to a mixture of cells and RNA keeper stabilization buffer, and then follow the normal steps.