

RNAfixer: RNA Stabilization Reagent

For stabilization and protection of RNA in samples without liquid nitrogen

For laboratory research use only

RP1301	50 ml
RP1302	100 ml

Description:

RNAfixer is a aqueous and nontoxic tissue-holding liquid, which can *in situ* stabilize and protect RNA under non-frozen situation by rapid infiltrating fresh tissues and not affect RNA yield and integrality. Hence, RNAfixer eliminates inconveniences to flash freeze samples in liquid nitrogen or take samples from different places. When fresh tissues immersed into RNAfixer, RNA can be stored up to a day at 37°C, a week at 25°C, a month at 4°C and a long term at -20°C or -80°C. RNA viruses (such as HCV and HIV) are stable up to a month at 37°C in RNAfixer.

2. Storage and Stability

RNAfixer is the transparent liquid and stable up to 12 months under RT (18-25°C). The reagent should be clear. Please incubate at 37°C for a moment until clear if necessary, then cool down to RT for use.

3. Applicability

Animal organs or tissues (heart, liver, kidney, muscles, testicle, brain and spleen etc), cultured cells, RNA virus, fruit-fly, bacteria, leukocyte, blood and some plant structures.

Features

Ready-to-use: just shear the tissues into appropriate volume and put into RNAfixer, then no RNA degradation.

No liquid nitrogen needed: Because samples storage dose not need liquid nitrogen, dry ice or -80°C refrigerator, RNAfixer is convenient for fast and large-scale samples collection.

Transportation facility: Because samples are stable up to one week at 25°C, samples can be mailed or transported in usual way, which is benefit for academic communication.

RNA stability: multiple freeze-thaws and diversified treatments do not affect RNA stability for samples stored in RNAfixer.

Data repetibility: RNAfixer can reduce the error produced in large-scale samples treatments and increase reliability of data produced in different tests, which is especially useful to large-scale gene expression profile.

Full compatibility: Samples in RNAfixer can not only be used for all total RNA extraction kits, but also can be employed for tissue slice, immunoassay and flow cytometry with no effect on extracting RNA.

Directions for using RNAfixer

RNAfixer is only used for fresh tissues. Please cut tissues into <5cm thick and dip it into RNAfixer, which volume is 5 times of tissue's size, under proper temperature. **Don't freeze tissues before dip it into RNAfixer.**

1. Animal tissues

RNAfixer does not destroy or dissolve tissue's structure. Please cut the tissues into even smaller (0.5cm thick) and immerge into RNAfixer. The small tissues, such as liver, kidney and spleen of rat, can be put into RNAfixer totally.

2. Plant tissues

A lot of plant tissues can be directly dipped into RNAfixer. But for some one with crude barrier (such as wax), the wax should be destroyed firstly before submerge.

3. Cultured cells

Collect suspend cells by pipetting and centrifugation, discard flow-through and then wash pellet with cold PBS once. Finally add 5 to 10 times volume of RNAfixer to suspend cells pellet and mix gently.

4. Blood and blood plasma

White blood cells, separated from red blood cells and blood serum, can be saved just like cultured cells. RNAfixer can also be used for saving anti-coagulated blood, serum and plasma. For blood should add 3 times volume of RNAfixer and mix gently.

5. Yeast cells

Centrifuge at 12,000g for 2 minutes to harvest cells (3×10^8) and add 0.5-1 ml RNAfixer to resuspend cells immediately. Yeast cells are stable in RNAfixer at 25°C for 8 hours or at 4°C for one week. For long-term storage, please submerge yeast cells in RNAfixer for one hour, centrifuge at 12,000g for 5 minutes, discard supernatant and then put into liquid nitrogen to freeze and keep at -80°C.

6. Bacteria

Although bacteria can't grow in RNAfixer, they are not destroyed by RNAfixer. Total RNA can still be extracted from *E. coli* after have been saved in RNAfixer for one month.

Sample Storage in RNAfixer

At -80°C

For Long-term storage, you have to take steps as follows: put tissues into RNAfixer and keep it one night at 4°C. Then take it out from RNAfixer, wipe off the leftover RNAfixer and place at -80°C. For cultured cells, do not need to wipe off the leftover RNAfixer and just directly put at -80°C. Multiple freeze-thaws do not affect RNA integrity and quantity for these tissues.

At -20°C

Put tissues into RNAfixer at 4°C overnight, transfer it to -20°C freezer. Tissues can't be frozen at -20°C, but may produce some rimes, which will not affect RNA quality. Multiple freeze-thaws do not affect RNA integrity and quantity for these tissues.

At 4°C

Tissues stored in RNAfixer are stable for one month at 4°C.

At 25°C

RNA in samples stored in RNAfixer is stable up to one week at 25°C. For two weeks, RNA will degrade slightly, which is reluctantly used for northern analysis and enough used for nuclease protection assay or RT-PCR analysis.

At 37°C

RNA in samples stored in RNAfixer is stable up to 24h at 37°C. For three days, RNA will degrade slightly.

Extraction RNA from tissues stored in RNAfixer

Take the tissues out from RNAfixer which can be washed by water straightly. Do not any treatment!

Tissues

Take the tissues out from RNAfixer by clean nipper, get rid of the leftover RNAfixer by drink paper, skive it with liquid nitrogen just like fresh tissues and extract RNA according to standard protocol.

Cells

There are two choice for cells stored in RNAfixer: one is to extract RNA after remove RNAfixer, and another is to directly extract RNA from mixture of cell and RNAfixer.

*** Extract RNA after remove RNAfixer**

Because of becoming less tender after saved in RNAfixer, centrifuge cells at high speed. The experience is that the cells were successfully harvest by centrifugation at 5000g. Another choice is to add equal volume of PBS to mixture of cells and RNAfixer for lessening solution density and make cell deposit easily.

*** Extract RNA from mixture of sample and RNAfixer**

Add 10 times volume of reagent (such as TRIpure, TRI reagent) to mixture of cells and RNAfixer and then operate according to standard protocol.