For research use only Version Number：2.0-1809

RNA*later* (For RNA Stabilization)

Kit composition	RL-01011	RL-01012	RL-01013
	50ml	100ml	100ml×4
Buffer RNAlater	1 piece	1 piece	1 piece
Instruction Manual	RL-01011	RL-01012	RL-01013

Introduction

Once the biological sample is collected, its RNA becomes quite unstable. Rapidly stabilizing RNA and maintaining RNA expression are the first conditions for obtaining accurate gene expression analysis data. In addition, it is also necessary to prevent the activation of increased or down-regulated gene expression caused by sample processing.

RNAlater is a liquid non-toxic animal tissue preservation reagent. It can quickly penetrate into tissue cells and protect non-frozen cellular RNA from degradation by effectively inhibiting RNase activity, so that after the tissue sample is obtained, it is not necessary to process the sample immediately, and it is not necessary to freeze the sample in liquid nitrogen,so it is more convenient for subsequent experimental operations. The use of tissue RNA protection solution can avoid the inconvenience of using liquid nitrogen or ultra-low temperature refrigerators, and storing different batches of tissue specimens in the protection solution can immediately stop and fix the sequence changes of RNA expression, which can reduce the error between experimental groups .

RNAlater can be widely used in a variety of vertebrate samples, including brain, heart, kidney, spleen, liver, and lung. After fresh non-frozen tissues are immersed in Buffer RNAlater at a ratio of 1:10, the samples can be stored at room temperature for 1 week, 37°C for 1 day, 4°C for at least 1 month; tissues can be immersed at 4°C at -20°C or store at -80℃ for a long time.

Storage and Stability

This kit can be stored stably for more than 1 year at room temperature (15-25℃).

Note: Precipitation or crystal precipitation may occur when stored at low temperatures. The precipitate must be completely dissolved at room temperature or 37°C before use.

Warnings and Precautions

- RNAlater is only suitable for fresh animal tissues, not for frozen tissues.
- The size of the tissue block must not exceed 0.5cm on any side. If the tissue is too large, it can be cut into small pieces and then immersed in 10 times the volume of Buffer RNAlater.
- The sample tissues stored in Buffer RNAlater can be stored at 4°C for at least 1 month, room temperature for 1 week and 37°C for 1 day. If long-term storage is required, it can be infiltrated overnight at 4°C, and then transferred to -20°C or -80°C for long-term storage. The sample can then be thawed and re-frozen at room temperature without affecting the quality of its RNA. (Note: It is recommended that tissue samples be stored at low temperature in Buffer RNAlater, at least 1 month at 4°C, long-term storage at -20°C or -80°C, and 37°C or room temperature storage is not recommended.)
- If the tissues stored in Buffer RNAlater need to be transported over long distances, ensure that the tissues are completely immersed in Buffer RNAlater during transportation.
- If the Buffer RNAlater has precipitates or crystals after storage at low temperature, it can be stored at room temperature or 37°C before use. After the precipitation or crystals are completely dissolved, mix and use.

Procedure

Before using, please confirm whether there is precipitation in the Buffer RNAlater solution.If there is precipitation, please dissolve and mix the reagents at room temperature or 37°C before use.

1. Estimate the volume (or weight) of the tissue to be used before cutting the tissue, and take out Buffer RNAlater at a ratio of 1:10 (tissue: Buffer RNAlater) for use (for example: 100 mg of tissue, 1ml of Buffer RNAlater is required, and the ratio is reduced for the experiment The results have no effect, and the tissues need to be cut into pieces for proportional magnification).
   Note: The amount of Buffer RNAlater is at least 10 times the volume (or weight) of the tissue.
2. After cutting the tissue, put it in Buffer RNAlater, pre-soak it for 15min-1h at room temperature, and then transfer it to cryogenic storage. If the tissue sample is too large, cut the tissue block whose side length is less than 0.5cm*0.5cm*0.5cm before saving. It should be noted that the tissue block must be completely immersed in the protective solution during storage.
3. The tissue soaked in Buffer RNAlater should be stored at room temperature for 1 week, 37°C for 1 day, and 4°C for at least 1 month. If the tissue needs to be stored at -20°C for a long time, first soak the soaked tissue at 4°C overnight, and then transfer it to -20°C for long-term storage; if the tissue needs to be stored at -80°C for a long time, first soak the soaked tissue at 4°C overnight , And then remove the tissue from Buffer RNAlater and transfer to -80°C for storage.

Note: The tissue immersed in Buffer RNAlater may not freeze at -20° C. Cryopreservation will allow the solution to be thawed at room temperature, and repeated freezing and thawing up to 20 cycles will not affect the quality or yield of RNA.

4. When necessary, remove the stored samples from the Buffer RNAlater and remove the residual Buffer RNAlater on the tissues, and then use the Foregene Animal Total RNA Isolation Kit to directly extract RNA.

Note: After the sample is stored for a period of time under certain conditions in Buffer RNAlater, the OD ratio of RNA extracted from 260/230 is between 1.9-2.1; the 260/280 of liver, spleen, lung, and kidney is between 1.8-2.1, heart, heart, and kidney. The 260/280 of the brain is between 1.7-2.0. The specific results are related to the RNA extraction kit use.