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RNAclean RNA Clean Micro Kit

Product Number: RNK7201

Shipping and Storage

1. This reagent kit is transported and stored at room temperature.
2. To avoid the volatilization, oxidation, and pH changes of reagents exposed to air for a long time, the lid of each solution should be promptly closed after use.

Components

Component	RNK7201 50 Preps
Buffer RC	20mL
Buffer RW	10mL Add anhydrous ethanol as indicated on the bottle label before the first use
RNase-free H_2O	5mL
RNase free ultra micro adsorption column	50
Collection tube (2mL)	50

Note: This reagent kit can be stored at room temperature for 12 months without affecting its effectiveness.

Description

This reagent kit uses a centrifugal adsorption column with a specially designed silica matrix membrane. The difference in adsorption capacity between columns is minimal, and the reproducibility is good. Under high salt conditions, RNA efficiently and specifically binds to silica gel adsorption membranes, while maximizing the removal of proteins, inorganic salt ions, and many organic impurities. Under low salt conditions, RNA is eluted. This product adopts a specially designed ultra micro centrifuge column, which can recover trace and ultra micro samples. The general amount of RNA samples that can be processed is 0.1-10μg. This kit is used for purifying and recovering RNA from enzyme reaction solutions (such as DNase treatment, protease treatment, RNA labeling, etc.), and can also be used for purifying RNA extracted from other methods. The purified total RNA has no protein contamination, and the obtained RNA can be used for Northern blot, Dot blot, mRNA extraction, cDNA synthesis, primer extension, differential display, etc.

Application

Suitable for rapid extraction of plant microRNA or separate extraction of microRNA/total RNA.

Features

1. The special gasket free centrifugal column design ensures no liquid residue or contamination after centrifugation. Ensuring high purity of recovered RNA.
2. The special ultra micro centrifuge column design reduces the adsorption membrane area by several times, minimizing the loss of adhesion to the adsorption membrane during recovery. At the same time, it can elute with a minimum volume of 6μL, ensuring high concentration of RNA extraction.
3. The ultra micro centrifuge column is different from other manufacturers in that it adopts our unique hydrophobic and non nucleic acid adsorbing pad base and silicone membrane design. The added base can withstand high-speed centrifugation up to 20000 revolutions per minute without causing the silicone membrane to fall off during high-speed centrifugation. High speed centrifugation ensures the removal of impurities, salt ions, and ethanol, maximizing purity.

Protocol(Please read the precautions before the experiment)

Before the first use, please add anhydrous ethanol to the Buffer RW bottle according to the label instructions. After adding, please mark the added ethanol with a hook in a timely manner to avoid multiple additions!

All the following steps are performed at room temperature, but should be done quickly to reduce the chance of RNA degradation.

1. Add RNase free water to the ice RNA sample to make up to 100μL, add 350μL of binding solution RC, and mix well.
2. Add 250μL anhydrous ethanol, mix well without centrifugation.
3. The solution obtained in the previous step, along with any possible precipitate, is transferred to an ultra trace adsorption column (with the adsorption column placed in a collection tube) and centrifuged at 13000 rpm for 30 seconds at room temperature (all steps below are at room temperature). The waste liquid is discarded and the adsorption column is re placed in a recovery header.

   Note: To remove trace amounts of DNA residue, direct digestion on a DNA enzyme column can be performed after this step. For details, please refer to the appendix.
4. Add 500μL Buffer RW (please check if anhydrous ethanol has been added first!) Centrifuge at 13000 rpm for 15 seconds and discard the waste liquid.
5. Repeat step 4.
6. Return the ultra trace adsorption column to the empty collection tube, centrifuge at 13000 rpm for 2 minutes, and try to remove the rinse solution as much as possible to prevent residual ethanol in the rinse solution from inhibiting downstream reactions.
7. Transfer the ultra trace adsorption column to a new 1.5mL centrifuge tube, and add 6-15μL of RNase free ddH_2O (preheated at 90-100℃ before Buffer RW to increase the concentration of recovered RNA) to the center of the adsorption column membrane. Let it stand for 2 minutes and centrifuge at 13000 rpm for 1 minute.

   The recommended elution volume is not less than 5μL, as a small volume can affect the efficiency of nucleic acid recovery.

   Re adding the first eluent to the adsorption column for a second elution can increase the concentration by about 10%.

Appendix : DNase I column digestion

This kit can also perform DNA enzyme digestion on a centrifugal column to remove trace amounts of DNA contamination from RNA samples. If strict mRNA expression analysis such as fluorescence quantitative PCR is required, the DNase I column digestion kit can be purchased to directly digest DNA on the ultra micro adsorption column membrane, and then pure RNA can be eluted and used directly. Customers can purchase protein free liquid RW1 from our company as needed.

1. Preparation of DNase I working fluid:

   Take 20μL of DNase I buffer and 2μL of RNase free DNase I centrifuge tube and gently blow and mix them together to form the working solution (when processing multiple centrifuge columns, the working solution should be prepared by scaling up according to the proportion).

   Note: If there is too much residual DNA leading to incomplete digestion, the enzyme dosage can be increased proportionally to improve digestion efficiency (such as 50μL DNase I buffer and 5μL RNase free DNase I).
2. Follow the normal steps before, and after completing step 3, follow the steps below.
3. Add 350μL of protein removal solution RW1 to the ultra trace adsorption column, centrifuge at 12000 rpm for 30 seconds, discard the waste liquid, and place the adsorption column in the recovery manifold.
4. Add 22μL of DNase I working solution to the center of the ultra trace adsorption column membrane and let it stand at room temperature (20-30℃) for 15 minutes. Be careful to directly drop the working fluid onto the center of the membrane, and do not let the working fluid drop onto the O-ring or centrifuge column wall.
5. Add 350μL of protein removal solution RW1 to the ultra trace adsorption column, centrifuge at 12000 rpm for 30-60 seconds, discard the waste liquid, and place the adsorption column in the recovery manifold.
6. Follow up steps such as receiving bleaching solution RW. If it is a reagent kit from another company, then proceed with the last rinse solution and other subsequent steps.