CYRN71-CHANGYU EASYspin Plus Super Fast RNA Kit

Catalog number	Package
CYRN7101	50 preps

Storage and shipping: 15-25 °C. Stable for 12 months. Do not store at 4 °C or -20 °C, as precipitation affects performance. Keep all solutions tightly capped after use.

Kit components

Component	Storage	50 preps (CYRN7101)
Lysis Buffer UF	15-25 °C	30 ml
Deproteinization Buffer RW1	15-25 °C	35 ml
Wash Buffer RW	15-25 °C	10 ml (add ethanol before first use)
RNase-free H2O	15-25 °C	5 ml
DNA-clear/RNA-bind universal columns and collection tubes	15-25 °C	100 sets

Description

The dedicated DNA-clear/RNA-bind universal column and a new solution system avoid toxic phenol/chloroform and β-mercaptoethanol. The kit is suitable for efficient extraction of high-quality total RNA from ordinary animal tissues, cells, plants and bacteria, with the fastest protocol taking only 6 minutes. The RNA has high purity and low gDNA residue, is free of protein and other impurities, and is suitable for RT-PCR, RT-qPCR, RNA-seq library preparation, array analysis and other downstream applications.

Features

No toxic phenol/chloroform or β-mercaptoethanol and no ethanol precipitation step.

The DNA-clear/RNA-bind universal column removes gDNA in a 30-second filtration step without DNase digestion; the fastest protocol takes only 6 minutes, minimizing handling and RNA degradation.

Excellent RNA integrity: the typical 28S:18S ratio on agarose gels is greater than 2:1.

Highly pure RNA with typical A260/A280 of 2.1-2.2; generally no DNase digestion is needed, and the RNA is suitable for reverse transcription PCR, real-time PCR and high-throughput sequencing library preparation.

Broad compatibility: suitable for ordinary animal tissues, cells, bacteria and simple plant samples.

Notes before starting

Note: All centrifugation steps are carried out at room temperature at 13,000 rpm in a conventional benchtop centrifuge.

Note: Lysis Buffer UF and Deproteinization Buffer RW1 contain irritants. Wear gloves and avoid contact with skin, eyes and clothing. Rinse affected areas with plenty of water or saline.

Note: The kit removes most DNA residue and the purified RNA generally requires no DNase I treatment. If the downstream application is very sensitive to trace DNA, treat the RNA with DNase I or perform on-column DNase digestion during extraction (CYRN34).

❖ Procedure

Before first use, add the indicated amount of absolute ethanol to Wash Buffer RW, mix well and tick the box to avoid adding ethanol twice.

1. Sample processing

A. Adherent cells: no trypsinization is needed. Remove the medium, add 500 µl of Lysis Buffer UF directly to the dish and pipette repeatedly to aid lysis. For vessels that cannot be lysed directly, scrape the cells or trypsinize, collect by centrifugation, remove the supernatant and add 500 µl of UF (fewer than 8×10^6 cells), vortexing or pipetting until no cell clumps remain.

B. Suspension cells: collect by centrifugation at 13,000 rpm for 10 seconds, remove the supernatant and add 500 µl of Buffer UF (fewer than 8×10^6 cells), vortexing or pipetting until no cell clumps remain.

C. Animal tissue: take about 10-20 mg (less than 30 mg) of fresh tissue, add 500 µl of Lysis Buffer UF and homogenize with a glass or electric homogenizer. For liquid nitrogen grinding, grind tissue to a powder, transfer 10-20 mg (less than 30 mg) of powder to a 1.5 ml centrifuge tube pre-filled with 500 µl of Buffer UF and vortex or pipette until no clumps remain.

D. Plants: grind plant or fungal tissue in liquid nitrogen to a fine powder, transfer 50-100 mg of powder to a 1.5 ml centrifuge tube pre-filled with 600 µl of Buffer UF and vortex vigorously for 30 seconds. Centrifuge at 13,000 rpm for 5 minutes and take the supernatant for the next step. This kit is intended for simple plant samples; for complex plant samples that perform poorly, use a dedicated plant RNA kit (for example CYRN69).

2. RNA extraction

1. Load the homogenate onto a DNA-clear/RNA-bind universal column placed in a collection tube and centrifuge at 13,000 rpm for 30 seconds. Discard the column and keep the filtrate, which contains the RNA.

2. Add 0.5 volume of absolute ethanol (about 250 µl) to the filtrate and mix by pipetting. Cloudiness or flocculation is normal; mix immediately and do not centrifuge.

3. Load the mixture onto a new universal column placed in a collection tube and centrifuge at 13,000 rpm for 30 seconds. Discard the flow-through and return the column to the collection tube. The column capacity is 750 µl; if the mixture exceeds this volume, load it in several portions.

4. Add 700 µl of Deproteinization Buffer RW1 and centrifuge at 13,000 rpm for 15 seconds. Discard the flow-through.

5. Add 500 µl of Wash Buffer RW (check that ethanol has been added) and centrifuge at 13,000 rpm for 15 seconds. Discard the flow-through.

6. Add another 500 µl of Wash Buffer RW and centrifuge at 13,000 rpm for 2 minutes. Carefully remove the column from the collection tube so that the bottom of the column does not touch the filtrate. Optional: if the column bottom touches the filtrate, discard the filtrate, return the column to the collection tube and centrifuge empty at 13,000 rpm for 1 minute to prevent ethanol carryover.

7. Transfer the column to a new 1.5 ml centrifuge tube. Apply 30-50 µl of RNase-free ddH2O to the centre of the membrane, leave for 1 minute and centrifuge at 13,000 rpm for 1 minute.

Use an elution volume of at least 30 µl; smaller volumes reduce recovery. To increase RNA concentration, prewarm the RNase-free ddH2O to 90-100 °C before elution, leave it on the membrane for 2-3 minutes, or reload the first eluate onto the column for a second elution.

8. The extracted RNA can be used directly in downstream applications or stored at -85 to -65 °C.

This product is furnished for LABORATORY RESEARCH USE ONLY. Not for diagnostic or therapeutic use.