

Hieff™ Blood RNA Kit

Product description

The Hieff™ Blood RNA Kit is suitable for the extraction of RNA from samples such as blood, plasma, serum, and lymph fluid. The silica-based material used in the centrifugal adsorption column is a unique new material developed by our company. It, combined with our unique lysis buffer formulation, allows for the maximum recovery of high-purity RNA. The extracted RNA has high purity, stable and reliable quality, and can be used for various downstream applications, such as RT-PCR, RT-qPCR, in vitro transcription, molecular cloning, etc.

Specifications

Cat.No.	19241ES50
Size	50 T

Components

Part	Components No.	Name	19241ES50
Part I	19241-A	Lysis Buffer / LB Buffer B3	50 mL
Part II	19241-B	Hieff™ RNA Column B3	50
	19241-C	2 mL Collection Tube B3	50
	19241-D	Deproteinized Solution* / PL Buffer B3*	16 mL
	19241-E	Wash Buffer*	12 mL
	19241-F	RNase-free H ₂ O	5 mL

Storage

This product should be transported at room temperature. Upon receipt:

Part I: Store at 2~8°C, protected from light.

Part II: Store at room temperature.

The product is valid for 2 years.

Notes

1. To prevent volatilization, oxidation, and pH changes due to prolonged exposure to air, ensure that the lid is tightly closed immediately after each use.
2. If precipitation or turbidity is observed in the solution (particularly under low-temperature conditions such as during winter), incubate at 37 °C in a water bath until fully dissolved and the solution becomes clear, to ensure optimal performance.
3. The Lysis Buffer LB and Deproteinized Solution PL contain irritating substances. Please wear lab coats and disposable gloves when handling these reagents to ensure personal safety.
4. This product is intended for research use only.

Instructions

Preparation Before Use

1. Required Materials and Equipment: Benchtop centrifuge, vortex mixer, water bath or metal bath, chloroform or chloroform substitute (19203ES), absolute ethanol, DNase I (14549ES), RNase-free centrifuge tubes, etc.
2. Unless otherwise specified, all centrifugation steps are performed at room temperature using a standard benchtop centrifuge capable of reaching 12,000 rpm.
3. Prior to first use, add absolute ethanol to **Protein Removal Buffer PL* (19241-D) at a ratio of 1.6:1 (e.g., add 10 mL of absolute ethanol to 16 mL of Protein Removal Buffer PL)**. Additionally, add **4 volumes of absolute ethanol to the Wash Buffer W* (19241-E) bottle, mix thoroughly before use, and label the bottle accordingly**. If the volume of Wash Buffer W* is significantly inaccurate due to improper shipping or storage, measure and adjust the volume using a graduated cylinder before adding 4 volumes of absolute ethanol. After each use, tightly close the cap to maintain the ethanol content in Wash Buffer W*.

Sample pretreatment

1. 250 µL blood (or serum, plasma, cerebrospinal fluid, etc.) was transferred to a 1.5 mL RNase-free centrifuge tube.
[Note] : When it is less than 250 µL, it should be supplemented with PBS or normal saline.
2. Add 750 µL cracking liquid LB, blow repeatedly, and violently shake and mix well.
3. Let stand at room temperature for 5 min.
4. Add 200 µL chloroform or chloroform substitute (user-supplied, 19203ES) and shake vigorously for 15 sec.
5. Let stand at room temperature for 2 min.
6. The samples were stratified by centrifugation at 12,000 rpm at 4°C for 10 min. The upper water phase was transferred to a 1.5 mL RNase-free centrifuge tube.

[Note] : The sample is divided into three layers, the lower organic phase, the middle layer, and the upper colorless water phase, where RNA is present.

[Note] : The upper layer capacity is about 70% of the total lysate LB added. If 750 µL lysate LB is added, the upper water phase is about 525 µL. It is recommended to absorb 500 µL to prevent the absorption of the middle layer and cause DNA contamination.

7. Add 0.5 times the volume of absolute ethanol (user-supplied) and mix upside down.

[Note] : Precipitation is normal.

RNA extraction

1. Put RNA adsorption column B3(19241-B) into 2 mL collection tube(19241-C) and set aside.
2. The pretreatment mixture was added to RNA adsorption column B3, centrifuged at 12,000 rpm for 1 min, and the waste liquid was discarded.
3. Add 500 µL of Protein Removal Buffer PL* (ensure absolute ethanol has been added), centrifuge at 12,000 rpm for 30 sec, and discard the flow-through.

[Note]: If gDNA removal is required, add 100 µL of DNase digestion solution to the center of the spin column and incubate at room temperature (20–30 °C) for 15 min. Then add 350 µL of Protein Removal Buffer PL (ensure absolute ethanol has been added), centrifuge at 12,000 rpm for 30 sec, and discard the flow-through.

4. Place the RNA Spin Column B3 back into the collection tube, add 500 µL of Wash Buffer W* (ensure absolute ethanol has been added), centrifuge at 12,000 rpm for 30 sec at room temperature, and discard the flow-through.

5. Repeat Step 4.
 6. Place the RNA Spin Column B3 back into the collection tube and centrifuge the empty column at 12,000 rpm for 2 min at room temperature to remove residual Wash Buffer W*.
 7. Transfer the RNA Spin Column B3 to a new 1.5 mL RNase-free centrifuge tube. Add 30–50 μL of RNase-free H_2O to the center of the membrane and incubate at room temperature for 2 min. Centrifuge at 12,000 rpm for 1 min. Collect the eluate, which contains the purified RNA.
- [Note]:** Recovery yield can be improved by: ① preheating RNase-free H_2O to 65 °C; ② reloading the RNA eluate onto the column, incubating at room temperature for 2 min, and eluting again.
8. The RNA solution can be stored at –80 °C for long-term preservation.

Appendix: Preparation of DNase Digestion Solution (Cat#14549ES):

Combine 10 μL of DNase I Reaction Buffer (10 $\times$) + 3 μL of Recombinant DNase I (RNase-free, Yeast) + 87 μL of DEPC-treated water. Mix gently by pipetting. The prepared digestion solution can be temporarily stored at 4 °C (no longer than 30 min).