# VAHTS mRNA Capture Beads (Ultrapure Plate)

**RNB702**

Version 25.1

## Product Description

VAHTS mRNA Capture Beads (Ultrapure Plate) are Oligo (dT)-coupled 1 μm paramagnetic microspheres designed for isolating poly(A)$^+$ RNA from purified total RNA. This method enables intact mRNA recovery from small-volume samples without the need for precipitation. The optimized plate-based kit streamlines the workflow, allowing experiments to be completed within 1 h and enabling compatibility with automation platforms.

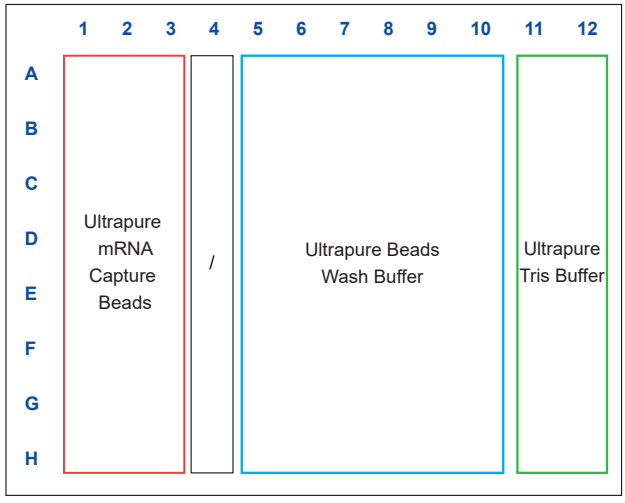
## Components

| Components | RNB702-01 | RNB702-02 |
|---|---|---|
| RNA Reagents (Prepackaged for RNB702) | 48 rxns | 96 rxns |

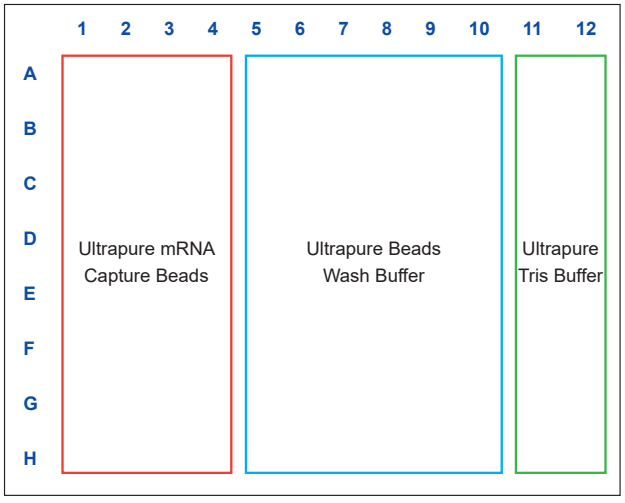
### Component Details

| Components | RNB702-01 (48 rxns) | RNB702-02 (96 rxns) |
|---|---|---|
| Ultrapure mRNA Capture Beads | 240 μl each | 360 μl each |
| Ultrapure Beads Wash Buffer | 410 μl each | 810 μl each |
| Ultrapure Tris Buffer | 171 μl each | 332 μl each |

**RNB702-01:**




**RNB702-02:**




## Storage

Store at 2 ~ 8°C and ship on ice pack.

## Applications

This product is designed for isolating poly(A)$^+$ RNA from 0.01 - 12.5 μg total RNA with high integrity (RIN ≥7). Incomplete or degraded total RNA templates may result in bias of the 3' end of the RNA.

## Self-prepared Materials

Low adsorption Nuclease-free PCR tube and tips, PCR instrument, and magnetic rack.

## Notes

1. Equilibrate magnetic beads to room temperature and mix well before use, or the recovery efficiency may be affected.
2. Mix the beads well by inversion before use and avoid vigorous vortexing.
3. Be sure to wear gloves during operation and use freshly prepared Nuclease-free dd$H_2O$ to avoid contamination.
4. Thoroughly discard the supernatant and avoid disturbing the beads to prevent reduced recovery efficiency.

## Experiment Process

1. Equilibrate magnetic beads to room temperature before use.
2. Prepare RNA samples: Dilute 0.01 - 12.5 μg total RNA to a final volume of 50 μl with Nuclease-free dd$H_2O$ in a Nuclease-free PCR tube, and keep the tube on ice for later use.
3. Mix the Ultrapure mRNA Capture Beads well by inversion. Add 50 μl of beads to the total RNA sample, and mix well by pipetting.
4. Place the tube in the PCR instrument and perform the following program to allow mRNA to bind to the beads.

| Temperature | Time |
|---|---|
| 65°C | 5 min |
| 25°C | 5 min |
| 4°C | Hold |

5. Place the tube on the magnetic rack for 5 min to separate mRNA from total RNA, then carefully discard the supernatant.
6. Remove the tube from the magnetic rack, add 150 - 200 μl of Ultrapure Beads Wash Buffer, and mix well by pipetting. Place it on the magnetic rack for 5 min, then carefully discard the supernatant.
   ▲ Determine the final volume of Ultrapure Beads Wash Buffer used in the script based on the actual conditions of the automated workstation.
7. Remove the tube from the magnetic rack, add 52 μl of Ultrapure Tris Buffer to resuspend the magnetic beads, and mix well by pipetting.
8. Place the tube in the PCR instrument and perform the following program to elute the mRNA.

| Temperature | Time |
|---|---|
| 80°C | 2 min |
| 25°C | Hold |

9. Place the tube on the magnetic rack for 5 min, then carefully transfer 50 μl of the supernatant to a new Nuclease-free PCR tube.
10. Add 50 μl of Ultrapure mRNA Capture Beads to the supernatant, and mix well by pipetting.
11. Place the tube in the PCR instrument and perform the following program to allow mRNA to bind to the beads.

| Temperature | Time |
|---|---|
| 65°C | 5 min |
| 25°C | 5 min |
| 4°C | Hold |

12. Place the tube on the magnetic rack for 5 min to separate mRNA from total RNA, then carefully discard the supernatant.
13. Remove the tube from the magnetic rack, add 150 - 200 μl of Ultrapure Beads Wash Buffer, and mix well by pipetting. Place it on the magnetic rack for 5 min, then carefully discard the supernatant.
    ▲ Determine the final volume of Ultrapure Beads Wash Buffer used in the script based on the actual conditions of the automated workstation.
14. Choose an appropriate treatment method based on the subsequent procedure:

**Option A - Reverse transcription application:**

Remove the tube from the magnetic rack, add 10 μl of Nuclease-free dd$H_2O$, and mix well by pipetting. Incubate at 80°C for 2 min. Place the tube on the magnetic rack, and carefully transfer 8 μl of the supernatant to a new Nuclease-free PCR tube when the solution becomes clear (about 5 min).

**Option B - RNA library preparation application:**

Remove the tube from the magnetic rack, add 18 μl of Frag/Prime Buffer 2 from VAHTS Universal V10 RNA-seq Library Prep Kit (Plate) (Vazyme #NRB616), and mix well by pipetting. Then place the tube in the PCR instrument, incubate at 85°C for 6 min, and hold at 4°C to fragment the mRNA. Place the tube on the magnetic rack, and carefully transfer 16 μl of the supernatant to a new Nuclease-free PCR tube when the solution becomes clear (about 5 min), and immediately proceed to library preparation.

▲ The fragmentation condition (85°C for 6 min) is for reference only. Please choose the fragmentation condition according to Appendix I/Table 1 in Vazyme #NRB616 manual.

15. Samples can be placed on ice for NGS library preparation or other analytical applications (we recommend using the sample immediately for subsequent reactions), or stored at -85 ~ -65°C.
    ▲ Vazyme provides utility scripts and protocols compatible with automated liquid handling workstations for streamlined library preparation. For access to these resources, please contact Vazyme Technical Support.