MagVigen™ - Poly T mRNA Select Nanoparticles

Cat # 61004/K61004

Product Description

MagVigen™ mRNA Select nanoparticles are ideal for messenger RNA purification. MagVigen™ mRNA Select nanoparticles feature efficient recovery of poly(A) tailed messenger RNA from total RNA. The mRNA are captured by MagVigen™ mRNA Select nanoparticles following a short incubation. The generated nanoparticle-poly(A) mRNA complex can be separated from the rest of the sample using a magnet. The retained mRNA material can be cleaved from the nanoparticles for generating sequencing library.

MagVigen™ mRNA Select nanoparticles enable the purification of poly(A) mRNA from total RNA. They can be used for Reverse-transcription, RNA probe, and RNA library construction. The purified mRNA products can be further analyzed by gel electrophoresis, PCR quantification and sequencing.

Product Contents

- Cat# 61004: MagVigen™ mRNA Select nanoparticles
  3 ml at 1mg/ml, with binding capacity for up to 10-20 ug mRNA, or up to 300 pico mole of fluorophore labelled Poly A_{26} per ml.

Cat# K61004 further includes:

- Blocking Buffer
- Binding Buffer
- Wash Buffer
- Elution Buffer

All materials should be stored at 4°C. Shelf life: 6 months.

Protocols

Materials Needed

Deionized water.

Note:

The amount of nanoparticles needed for efficient mRNA capture depends on the poly(A) tailed mRNA concentration in the starting material.

In general, use 100µl of MagVigen™ mRNA Select nanoparticles per 100µg of total RNA.

Important: Always resuspend nanoparticles before use.

mRNA capture protocol

Bind mRNA

1. Remove MagVigen™ mRNA Select nanoparticles from storage and bring them to room temperature.
2. Vortex MagVigen™ DNA Select nanoparticles thoroughly for 10 seconds before use.
   Note: *Make sure the beads are fully resuspended and well dispersed.*
3. Remove 100µl of MagVigen™ mRNA Select nanoparticles and put into a clean 1.5ml micro-centrifuge tube.
4. Collect MagVigen™ mRNA Select nanoparticles using magnetic rack and discard the supernatant.
   Note: *A clear precipitate containing dark brown colored nanoparticles should become visible on the side of the micro-centrifuge tube.*
5. Resuspend the nanoparticles in 200µl Blocking Buffer and incubate for 10 minute at room temperature.
6. Collect MagVigen™ mRNA Select nanoparticles using magnetic rack and discard the supernatant.
7. Resuspend the nanoparticles in 200µl Binding Buffer.
8. Add RNA sample to the MagVigen™ mRNA Select nanoparticles.
9. Vortex or pipette the reaction solution to mix thoroughly.
   Note: *It is ideal not to introduce bubbles during the capture reaction.*
10. Incubate the MagVigen™ mRNA Select nanoparticles-RNA reaction at room temperature for 30 minutes.
11. After incubation, use the magnet rack to separate the mRNA-captured nanoparticles from the solution.
12. Carefully remove the supernatant with a pipette, make sure not to disturb the mRNA-captured nanoparticle pellet.

Wash mRNA

13. Resuspend the nanoparticles in 200µl Washing Buffer and sit in room temperature for 2 minutes.
14. Use the magnet rack to separate the mRNA-captured nanoparticles from the washing solution. Carefully remove and discard the supernatant. .
15. Repeat steps 13-14, performing a total of two washes.

Elute DNA

16. Elute the captured mRNA from the nanoparticles by adding 20ul of the Elution Buffer.
    Note: *The volume of the Elution Buffer can be adjusted as needed.*
17. Gently pipette to mix well and incubate for 5 minutes at room temperature.
    Note: *It is ideal not to introduce bubbles during the elution reaction.*
18. Spin down a few seconds to collect the solution.
19. Place tube on magnetic rack for 1 minute to separate the nanoparticles from the eluted mRNA.
20. Transfer the supernatant containing the mRNA products to a clean tube. Make sure not to disturb the pellet. The purified mRNA is now ready to use for subsequent evaluation.