MagVigen™ DNA Select Kit

Cat # k61001-1000 bp

Product Description

MagVigen™ DNA Select nanoparticles are ideal for DNA purification. MagVigen™ DNA Select nanoparticles feature efficient recovery of double-stranded and single-stranded DNA. DNA products are captured by MagVigen™ DNA Select nanoparticles following a short incubation. The generated nanoparticle-oligo complex can be separated from the rest of the sample by a magnet. The retained genomic material can be eluted from the nanoparticles using an elution buffer.

MagVigen™ DNA Select nanoparticles enable the purification of DNA products from salts and other contaminants from assay samples, e.g. cell lysate. The purified DNA products can be further analyzed by gel electrophoresis, PCR quantification and sequencing.

Product Contents:

- MagVigen™ DNA Select Nanoparticle Solution.

  All materials should be stored at 4°C for up to 6 months.

  Scale up accordingly if DNA sample volume increases.

Materials Needed

- 75% ethanol
- Magnetic rack, NVIGEN Cat# A20006
- Elution solution : Tris or TE (PH 8)

DNA Capture

1. Remove MagVigen™ DNA Select nanoparticle solution from storage and bring them to room temperature.

2. Vortex MagVigen™ DNA Select nanoparticles for 10 seconds before use.

3. For every 20 ul of DNA sample containing no more than 1,000 ng DNA, add 40~14 ul of beads from MagVigen™ DNA Select 1000 bp Solution for the desired long bp DNA sizing application.

   Note: A volume ratio of (A)2.0:1 to (B)0.7:1 for MagVigen Nanoparticles : DNA Sample can be used to separate DNA ≥ (A)500bp to (B)3000 bp. For size cutoff of 750 bp DNA size selection, use volume ratio of about 0.9; For size cutoff of 1000 bp DNA size selection, use volume ratio of about 0.8. One should test different volume ratios to optimize DNA size selection performance.

4. Vortex or pipette the reaction solution to mix thoroughly.
   It is ideal not to introduce bubbles during the capture reaction.

5. Incubate the MagVigen™ DNA Select nanoparticles-DNA reaction at room temperature for **15 minutes**.

6. After incubation, use a magnet to separate the DNA-captured nanoparticles from the solution.

7. Carefully remove the supernatant with a pipette, taking care not to disturb the DNA-captured nanoparticle pellet.

8. Keeping the magnet in place, wash the DNA-captured nanoparticle pellet by adding 100ul freshly prepared 75% ethanol. Let it stand for 30 seconds.

   Note: Adjust the volume of ethanol as needed to sufficiently cover the DNA-captured nanoparticle pellet.

9. Remove and discard the ethanol solution.

10. Repeat steps 8~9, performing a total of two washes.

11. Air dry the beads for 2 min.

12. Elute the captured DNA from the nanoparticles by adding 20ul of the Elution Buffer. The volume of the Elution Buffer can be adjusted as needed.

13. Gently pipette to mix well and incubate for 10 minute at room temperature. It is ideal not to introduce bubbles during the elution reaction.

14. Separate the nanoparticles from the eluted DNA with magnet.

15. Transfer the supernatant containing the DNA products to a clean tube. The purified DNA is ready to use for downstream applications.

Table 1. General guidance for the ratio of MagVigen™ solution Vs. DNA sample solution to achieve desired DNA size cut off (500 bp~1000 bp). One can titrate different ratios to identify the best condition.

DNA size cutoff	500 bp	750 bp	1000 bp	>1000 bp
ratio	1.2	0.9	0.8	0.7~0.775

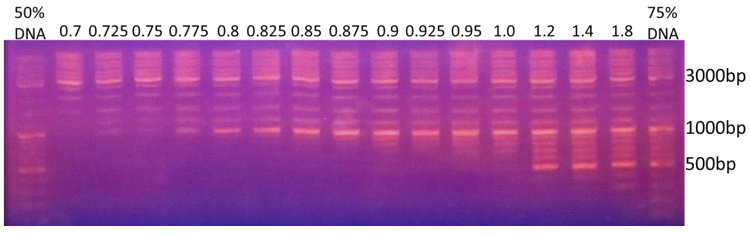

Figure 1. shows the sizing results by adjusting the ratios of MagVigen™ nanoparticle volume vs. DNA sample volume. Themo Scientific GeneRuler 100-10,000 bp DNA ladder and 1.5% agarose gel were used.