MagVigen™ DNA Select Kit

Cat # k61001-700

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 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.

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

DNA Select nanoparticles for capture. Scale up accordingly if DNA quantity or sample volume increases.

Materials Needed

- 75% ethanol
- Magnetic rack, 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 **20ul DNA sample containing no more than 1,000ng DNA**, add **40~9 ul volume of beads from Easy DNA Select** *Note: e.g. using 20 ul of 50ng dna with a volume ratio of 1.0 or 20 ul bead solution K61001-700 to having dna sizing Cut off 100 bp~600 bp , and select 700 bp and higher dna.*
4. Vortex or pipette the reaction solution to mix thoroughly.

   Note: It is ideal not to introduce bubbles during the capture reaction.
5. Incubate the MagVigen™ DNA Select nanoparticles-DNA reaction at room temperature for **5~15 minutes**.
6. After incubation, use the 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 3 minutes.

   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 2~5 min.
12. Elute the captured DNA from the nanoparticles by adding 20ul of the Elution Buffer.

    Note: The volume of the Elution Buffer can be adjusted as needed.
13. Gently pipette to mix well and incubate for 5 minute at room temperature.

    Note: 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 (400~700 bp, with ratio 1 +/- 0.05 to have 700 bp size selection). One can titrate different ratio to identify the best condition.

ratio	1.1~1.2	1.0	0.85
r	400~500bp	700bp	>700bp

Figure 1. below shows the sizing results by adjusting the ratios of beads volume vs. DNA sample volume. Themo Scientific GeneRuler 100 bp DNA ladder and 2% agarose gel were used.