DNA Clean GenoMagBeads

C26001

Product Description

The new DNA clean GenoMagBeads uses SPRI (Solid-Phase Reversible Immobilization) paramagnetic bead technology, and applies to DNA purification and size selection in the preparation of NGS (Next Generation Sequencing) library. DNA clean GenoMagBeads is compatible with all DNA/RNA library construction protocols currently provided by manufacturers or published in academic journals. The usage of DNA clean GenoMagBeads is the same as the same products of other suppliers, which is widely used in NGS library preparation. The yield and size distribution of the libraries prepared with DNA clean GenoMagBeads are highly consistent with those with same products of other suppliers.

Components

Components	C26001-005	C26001-060	C26001-450
DNA clean GenoMagBeads	5 ml	60 ml	450 ml

Storage

Store at 2 ~ 8℃. Adjust the shipping method according to the destination.

Applications

It is applicable for DNA or RNA library preparation.

Self-prepared Materials

Ethanol (100%)

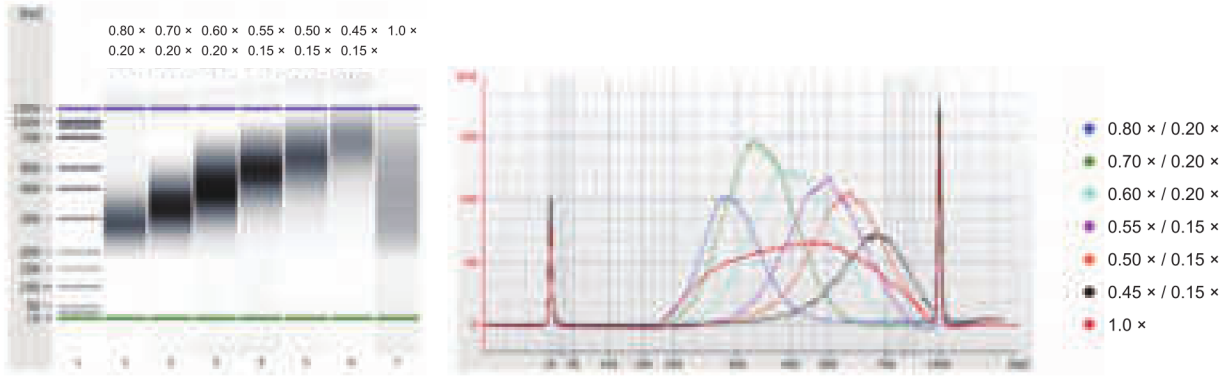
Nuclease-free ddH_2O and tubes

Magnetic stand

Notes

For research use only. Not for use in diagnostic procedures.

1. Keep the magnetic beads at room temperature at least 30 min and shake the reagent well before use, otherwise the recovery efficiency of the sample should be affected.
2. When washing the sample with 80% ethanol, keep the tube on the magnetic stand and without disturbing the magnetic beads. The drying time should be controlled to ensure there is no residual ethanol and avoid excessive drying (Excessive drying may cause cracking on the surface of beads and thereby reduce the final yield).
3. As shown in the figure below, when using devices based on the electrophoretic separation principle such as Agilent 2100 bioanalyzer to analyze samples, the high molecular weight tailing is usually caused by the residue of trace magnetic beads. It is recommended to use a magnetic stand with strong magnetic force in the operation and avoid disturbing magnetic beads in the last step.



Experiment Process

DNA Purification

1. Take out the DNA clean GenoMagBeads from 2 ~ 8℃ and keep the reagent at room temperature at least 30 min before use.
2. Mix the DNA clean GenoMagBeads thoroughly by vortex or turning upside down. Add DNA clean GenoMagBeads according to the reaction volume in Table 1. Mix the DNA clean GenoMagBeads and sample thoroughly by pipette mixing 10 times.
3. Incubate the tube at room temperature for 10 min to bind DNA to magnetic beads.
4. Place the tube onto the magnetic stand for about 5 min. After the solution is clarified, carefully aspirate the supernatant and discard.
5. Keep the tube on magnetic stand. Dispense 200 µl of freshly prepared 80% ethanol into the tube and incubate for 30 sec at room temperature. DO NOT re-suspend the beads! Aspirate out the ethanol and discard.
6. Repeat step 5.
7. Keep the tube on the magnetic stand and uncap the tube to air-dry the magnetic beads for 5 - 10 min.
8. Take out the tube from magnetic stand. Add an appropriate amount of Nuclease-free ddH_2O to the tube and manually resuspend the beads by pipetting up and down 10 times. After incubated 2 min at room temperature, place the tube onto magnetic stand for about 5 min to separate beads from the solution, and carefully aspirate out the supernatant to a new Nuclease-free tube.

Table 1. Reference conditions for DNA purification

Fragment size range after purification	Reference purified magnetic bead dosage (magnetic bead volume dosage: sample volume)
≥1 kb	0.5 ×
≥400 bp	1.0 ×
≥300 bp	1.2 ×
≥200 bp	1.5 ×
≥100 bp	2.2 × - 3.0 ×

DNA size selection

1. Take out the DNA clean GenoMagBeads from 2 ~ 8℃ and keep the reagent at room temperature at least 30 min before use.
2. Mix the DNA clean GenoMagBeads thoroughly by vortex or turning upside down. Add DNA clean GenoMagBeads according to the 1st round of reaction volume in Table 2. Mix the DNA clean GenoMagBeads and sample thoroughly by pipette mixing 10 times.
3. Incubate the tube at room temperature for 10 min.
4. Place the tube onto the magnetic stand for about 5 min. After the solution is clarified, carefully transfer the supernatant to a new Nuclease-free tube.
5. Add DNA clean GenoMagBeads according to the 2nd round of reaction volume in Table 2 in the new tube, and mix the GenoMagBeads and sample thoroughly by pipette mixing 10 times.
6. Incubate the tube at room temperature for 10 min.
7. Place the tube onto the magnetic stand for about 5 min. After the solution is clarified, carefully aspirate the supernatant and discard.
8. Keep the tube on magnetic stand. Dispense 200 µl of freshly prepared 80% ethanol into the tube and incubate for 30 sec at room temperature. DO NOT re-suspend the beads! Aspirate out the ethanol and discard.
9. Repeat step 8 .
10. Keep the tube on the magnetic stand and uncap the tube to air-dry the magnetic beads for 5 - 10 min.
11. Take out the tube from magnetic stand. Add an appropriate amount of Nuclease-free ddH_2O to the tube and manually resuspend the beads by pipetting up and down 10 times. After incubated 2 min at room temperature, place the tube onto magnetic stand for about 5 min to separate beads from the solution, and carefully aspirate out the supernatant to a new Nuclease-free tube.

Table 2. Reference conditions for DNA size selection

Average length range of sorted fragments (bp)	170 - 200	220 - 250	260 - 280	290 - 310	310 - 340	340 - 360	360 - 390
1st round volume ratio (DNA Clean beads:DNA)	1	0.9	0.8	0.8	0.7	0.7	0.7
2nd round volume ratio (DNA Clean beads:DNA)	0.3	0.2	0.2	0.15	0.2	0.15	0.1

Average length range of sorted fragments (bp)	390 - 420	410 - 440	410 - 450	530 - 570	570 - 600	660 - 700
1st round volume ratio (DNA Clean beads:DNA)	0.65	0.6	0.6	0.55	0.5	0.45
2nd round volume ratio (DNA Clean beads:DNA)	0.1	0.15	0.1	0.1	0.15	0.15