VAHTS DNA Clean Beads

#Cat: NB-54-0060-01 Size: 5mL
#Cat: NB-54-0060-02 Size: 60mL
#Cat: NB-54-0060-03 Size: 450ml

Product Description

The Neo Biotech VAHTS DNA Clean Beads utilizes SPRI (Solid-Phase Reversible Immobilization) paramagnetic bead technology for high-throughput purification of PCR amplicons. VAHTS DNA Clean Beads is compatible with all DNA/RNA library construction protocols currently provided by manufacturers or published in academic journals. The usage of VAHTS DNA Clean Beads is the same as the AMPure XP Beads (Beckman, Cat.No. #A63881), which is widely used in NGS library preparation. The yield and size distribution of the libraries prepared with VAHTS DNA Clean Beads are highly consistent with those with AMPure XP Beads. The cost- effective VAHTS DNA Clean Beads serves as a seamless alternative for the AMPure XP Beads.

Components

Components	NB-54-0060-01	NB-54-0060-03	NB-54-0060-04
VAHTS DNA Clean Beads	5 ml	60 ml	450 ml

Storage

Store at 2 ~ 8℃, adjust the transportation mode according to different destinations.

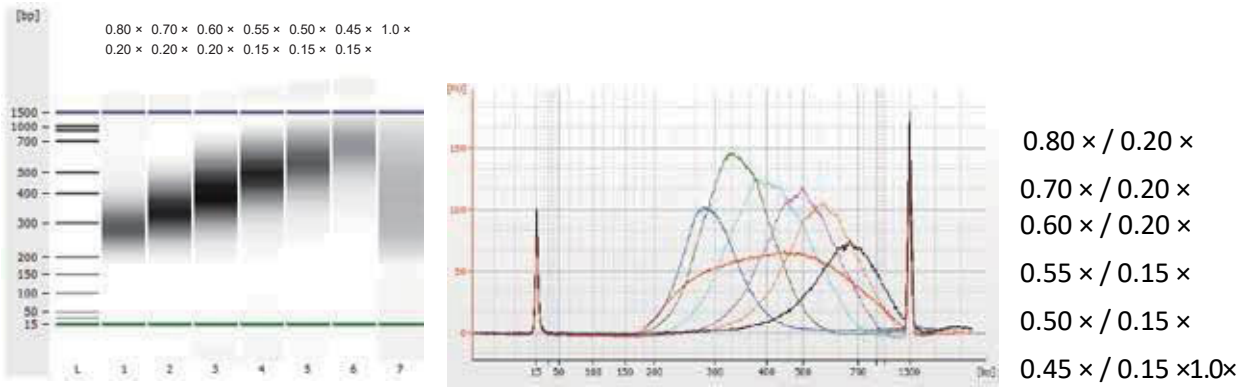
Applications

Special for DNA or RNA library preparation for NGS.

Notes

1. The magnetic beads must be balanced at room temperature for at least 30 min, please vortex oscillation or fully reverse before use to ensure uniform mixing.
2. When washing the sample with 80% ethanol, keep the sample tube on the magnetic frame and do not stir the magnetic beads. A dry time is optional to ensure all traces of ethanol are removed. do not over dry the bead ring (bead ring appears cracked if over dried) as this will significantly decrease elution efficiency.
3. As shown in the figure below, when using Agilent 2100 Bioanalyzer to analyze samples, there will be tailing in the high molecular weight, which is usually caused by the residue of trace

4. magnetic beads. It is recommended to use a magnetic frame with strong magnetic force in the operation and avoid stirring magnetic beads in the last step.



Experiment Process

DNA Sorting

1. Take out the magnetic bead solution from 2 ~ 8℃ 30 min in advance and balance to room temperature.
2. Vortex oscillation or reverse is used to fully mix the magnetic bead solution, suck a certain volume of magnetic bead solution (depending on the sample situation, refer to the reference conditions for DNA purification), add it to the DNA sample, and suck it repeatedly for 10 times with a pipette to fully mix it.
3. Incubate at room temperature for 10 min to bind DNA to magnetic beads.
4. Place the sample on a magnetic frame and carefully remove the supernatant after the solution is clarified (about 5 min).
5. Keep the sample always on the magnetic frame and add 200 µl rinse the magnetic beads with freshly prepared 80% ethanol, incubate

   at room temperature for 30 sec, and carefully remove the supernatant.
6. Repeat step 5 once and rinse twice in total.
7. Keep the sample on the magnetic frame all the time, open the cover and dry the magnetic beads at room temperature for about 5 - 10 min.
8. Take out the sample from the magnetic frame, add an appropriate amount of Nuclease-free ddH2O, vortex oscillation or blow with a pipette, and stand at room temperature for 2 min. Then place the reaction tube on the magnetic frame for 5 min to separate beads from the solution. Transfer supernatant to a new nuclease free centrifuge tube after sample is transparent.

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 X
≥400 bp	1.0 X
≥300 bp	1.2 X
≥200 bp	1.5 X
≥100 bp	2.2 X - 3.0 X

DNA Classification
Selection

1. Take out the magnetic bead solution from 2 ~ 8℃ 30 min in advance and balance to room temperature.
2. Reverse or vortex oscillation to fully mix the magnetic bead liquid. According to the sorting conditions of the library building kit, pipetan appropriate volume of magnetic bead liquid (the first round of sorting) and add it to the purified DNA treatment sample, gently suck and beat it for 10 times with a pipette and fully mix it.
3. Incubate at room temperature for 10 min to bind DNA to magnetic beads.
4. Place the sample on a magnetic frame, after the solution is clarified (about 5 min), carefully suck the supernatant into a new nuclease free centrifuge tube.
5. Pipet an appropriate amount of magnetic bead liquid (the 2nd round of sorting), smix thoroughly by pipetting for 10 times.
6. Incubate at room temperature for 10 min to bind DNA to magnetic beads.
7. Place the sample on a magnetic frame and carefully remove the supernatant after the solution is clarified (about 5 min).
8. Keep the sample always on the magnetic frame and add 200 µl of freshly prepared 80% ethanol to rinse the beads, incubate at room temperature for 30 sec, and carefully remove the supernatant.
9. Repeat step 8 once and rinse twice in total.
10. Keep the sample on the magnetic frame all the time, open the cover and dry the magnetic beads at room temperature for about 5 - 10 min.

11. Take out the sample from the magnetic frame, add an appropriate amount of Nuclease-free ddH2O, vortex oscillation or blow with a pipette, stand at room temperature for 2 min, and then place the reaction tube on the magnetic frame for 5 min. Transfer supernatant to a new nuclease free centrifuge tube after sample is transparent.

Table 2. Reference conditions for DNA fragment sorting

Average length range of sorted fragments (bp)	170 - 200	220 - 250	260 - 280	290 - 310	310 - 340	340 - 360	360 - 390
1st volume ratio (DNA Clean beads:DNA)	1	0.9	0.8	0.8	0.7	0.7	0.7
2nd 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 volume ratio (DNA Clean beads:DNA)	0.65	0.6	0.6	0.55	0.5	0.45
2nd volume ratio (DNA Clean beads:DNA)	0.1	0.15	0.1	0.1	0.15	0.15