NGS DNA Selection Beads

Cat.No.: HYD511

Product Description

NGS DNA Selection Beads are prepared based on the SPRI (Solid Phase Reverse Immobilization) principle and is applicable for DNA purification and size selection during the preparation of next generation sequencing (NGS) libraries. NGS DNA Selection Beads is compatible with various of DNA and RNA library prep kits.

Components

Components	Size-1	Size-2	Size-3
NGS DNA Selection Beads	1 mL	5 mL	60 mL

Storage

Store at 2-8℃ for 18 months.

Instructions

1. Preparation

Equilibrate the selection beads at room temperature for at least 30 min before use, prepare 80% ethanol.

2. Size selection

The operation flow of size selection is shown in Figure 1 and the protocol is as follows.

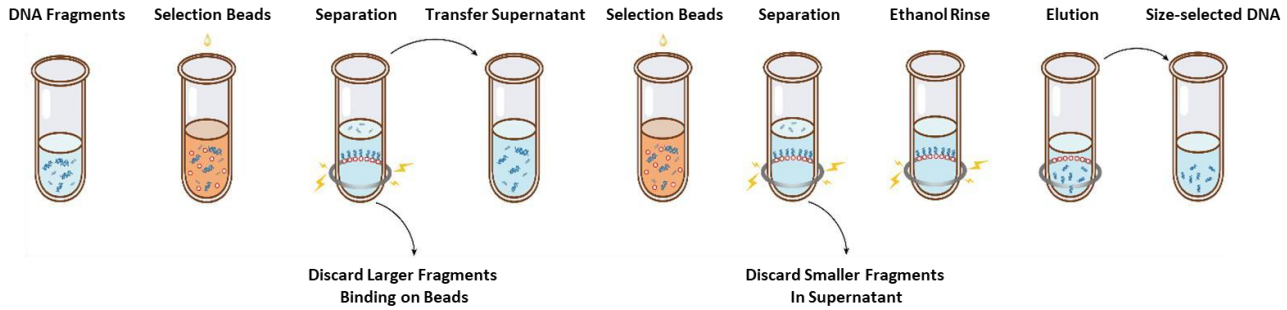


Figure 1. The Operation Flowchart of Size Selection

1) Mix the beads thoroughly by vortexing or pipetting up and down every time before using.
2) Add the first round of selection beads to the sample (refer to Table 1). Mix thoroughly by vortexing or pipetting up and down at least 10 times.
3) Incubate at room temperature for 5 min.
4) Spin down the tube briefly and place it on magnetic stand. When the solution is clear (about 5 min), transfer the supernatant to a new PCR tube.
5) Add the second round of selection beads to the sample from step 2.4 according to Table 1. Mix thoroughly by vortexing or pipetting up and down at least 10 times.
6) Incubate at room temperature for 5 min.
7) Spin down the tube briefly and place it on magnetic stand. When the solution is clear (about 5 min), aspirate the supernatant and discard.
8) Keep the tube in the magnetic stand and add 200 µL of freshly prepared 80% ethanol to without disturbing the beads, incubate at room temperature for 30 sec. Aspirate the ethanol and discard.
9) Repeat step 2.8 once for a total of two washes.
10) Remove residual ethanol with 10 µL pipette tips. Keep the tube in the magnetic stand, air dry the selection beads with the lid open until cracks just appear (about 5 min).

Note: Do not over-dry the selection beads. This may result in lower recovery DNA target.

11) Remove the tube from the magnetic stand. Add an appropriate amount of ddH_2O (≥20 µL) and mix thoroughly by vortexing or pipetting up and down at least 10 times.
12) Incubate at room temperature for 5 min.
13) Spin down the tube briefly and place it on the magnetic stand. When the solution is clear (about 5 minutes), transfer 20 µL of the supernatant to a new tube.

3. Recommended Conditions for DNA Size Selection

The calf thymus DNA was fragmented by sonication to prepare a fragment of 100-1000 bp, and two rounds of size selection were performed according to Table 1. The results were analyzed using Agilent 2100 Bioanalyzer (Figure 2).

Table 1. Recommended condition for DNA size selection

Length of DNA fragment	250-350 bp	320-420 bp	450-550 bp	550-700 bp	700-900 bp	800-1000 bp
Ratio of Beads: DNA for the 1st Round	0.80×	0.70×	0.60×	0.55×	0.50×	0.45×
Ratio of Beads: DNA for the 2nd Round	0.20×	0.20×	0.20×	0.15×	0.15×	0.15×

Note: "×" in the table indicates the volume of sample DNA. For example, if the insert length of the library is 250 bp and the sample DNA volume is 100 μL, the volume of magnetic beads used in the first round of sorting is 0.80×100 μL=80 μL; the volume of magnetic beads used in the second round of sorting is 0.20× 100 μL=20 μL.

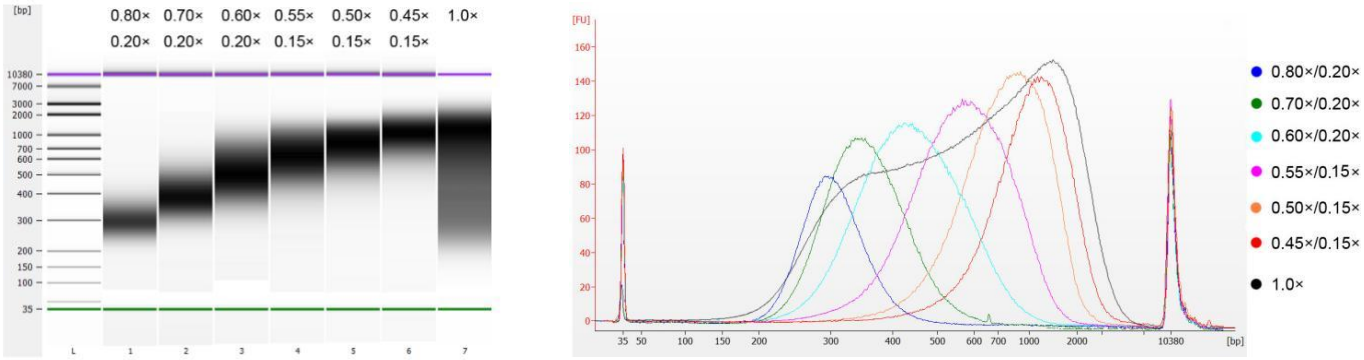


Figure 2. Agilent 2100 high sensitivity DNA chip electropherogram

Notes

1. For your safety and health, please wear lab coats and disposable gloves for operation.
2. This product is for research use only.