

SEQQX® DNA Selection Beads

Cat. no. LM801002

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Product Information

Item	Details
Product name	SEQQX® DNA Selection Beads
Cat. No.	LM801002
Size	1 mL / 5 mL / 10 mL / 60 mL / 450 mL
Storage and shipping	Store at 2–8 °C for 18 months.

Product Description

SEQQX® DNA Selection Beads are based on the SPRI (Solid Phase Reverse Immobilization) principle and are combined with a carefully optimized buffer system for DNA fragment size selection and purification during next-generation sequencing (NGS) library preparation. This product is compatible with DNA and RNA library preparation kits from various manufacturers and follows the same usage protocol as the widely adopted AMPure XP Beads. Its fragment recovery efficiency and library size distribution closely match those of AMPure XP Beads.

Instructions for Use

3.1. Preparation

Remove the beads from the refrigerator and allow them to equilibrate at room temperature for at least 30 minutes. Prepare 80% ethanol.

3.2. Size Selection (Two-step Method)

The workflow is shown in Figure 1. The detailed procedure follows below.

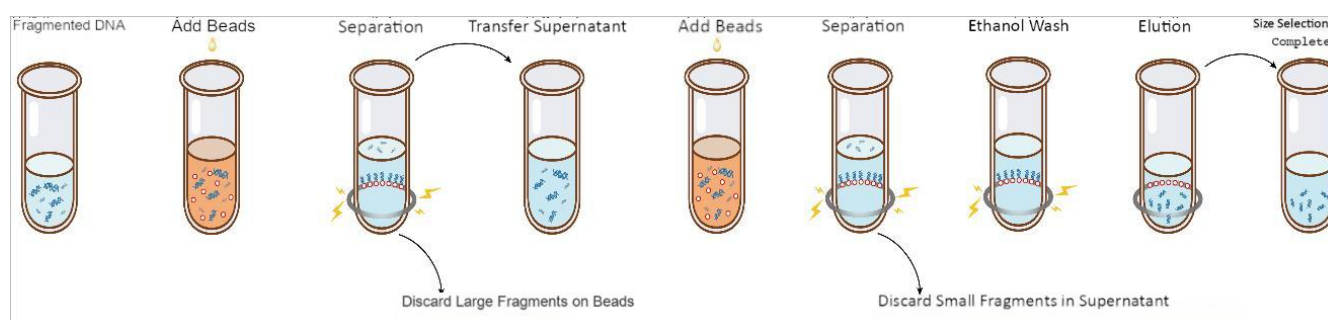


Figure 1. Two-step Size Selection Workflow

3.2. Detailed procedure

1. Vortex or thoroughly invert the beads to ensure complete mixing.
2. According to requirements and referring to Table 1, add the first-round selection beads to the DNA solution. Vortex to mix or pipette up and down 10 times to ensure thorough mixing.
3. Incubate at room temperature for 5 minutes.
4. Briefly centrifuge the tube and place it on a magnetic stand. Once the solution becomes clear (approximately 5 minutes), carefully transfer the supernatant to a clean microcentrifuge tube. Note: leave approximately 2 µL of liquid at the bottom of the tube when transferring — do not remove all of

the supernatant, as this may disturb the beads and affect selection performance. Example: for an initial volume of 100 μL using a 0.8 $\times$ ratio, add 80 μL of beads; it is recommended to transfer 178 μL of supernatant.

5. According to Table 1, add the second-round selection beads to the supernatant.
6. Vortex to mix or pipette up and down 10 times. Incubate at room temperature for 5 minutes.
7. Briefly centrifuge the tube and place it on a magnetic stand. Once the solution becomes clear (approximately 5 minutes), carefully remove the supernatant.
8. Keeping the tube on the magnetic stand, add 200 μL of freshly prepared 80% ethanol to wash the beads. Incubate at room temperature for 30 seconds, then carefully remove the supernatant.
9. Repeat step 8.
10. Keep the tube on the magnetic stand with the cap open and air-dry the beads until slight cracking appears (approximately 5 minutes). Note: do not over-dry the beads — excessive drying will negatively affect purification performance.
11. Remove the tube from the magnetic stand, add an appropriate volume of ddH₂O (≥ 20 μL), vortex or gently pipette to mix thoroughly, and incubate at room temperature for 5 minutes.
12. Briefly centrifuge the tube and place it back on the magnetic stand. Once the solution becomes clear (approximately 5 min), carefully transfer the supernatant to a clean tube. This completes the size selection process.

3.3. Reference Conditions for DNA Fragment Size Selection

Calf thymus DNA was fragmented by ultrasonication to generate smear fragments ranging from 100–1000 bp. Two-step size selection was performed according to Table 1. The results were analyzed using the Agilent 2100 Bioanalyzer (Figure 2).

Table 1. Two-step size selection ratios

DNA fragment size	First-round ratio (Beads:DNA)	Second-round ratio (Beads:DNA)
250–350 bp	0.80 $\times$	0.20 $\times$
320–420 bp	0.70 $\times$	0.20 $\times$
450–550 bp	0.60 $\times$	0.20 $\times$
550–700 bp	0.55 $\times$	0.15 $\times$
700–900 bp	0.50 $\times$	0.15 $\times$
800–1000 bp	0.45 $\times$	0.15 $\times$

Note: in the table, “ $\times$ ” represents the volume ratio to the DNA sample. For example, if the desired insert size is 250 bp and the DNA sample volume is 100 μL , the first-round bead volume is $0.80 \times 100 \mu\text{L} = 80 \mu\text{L}$, and the second-round bead volume is $0.20 \times 100 \mu\text{L} = 20 \mu\text{L}$.

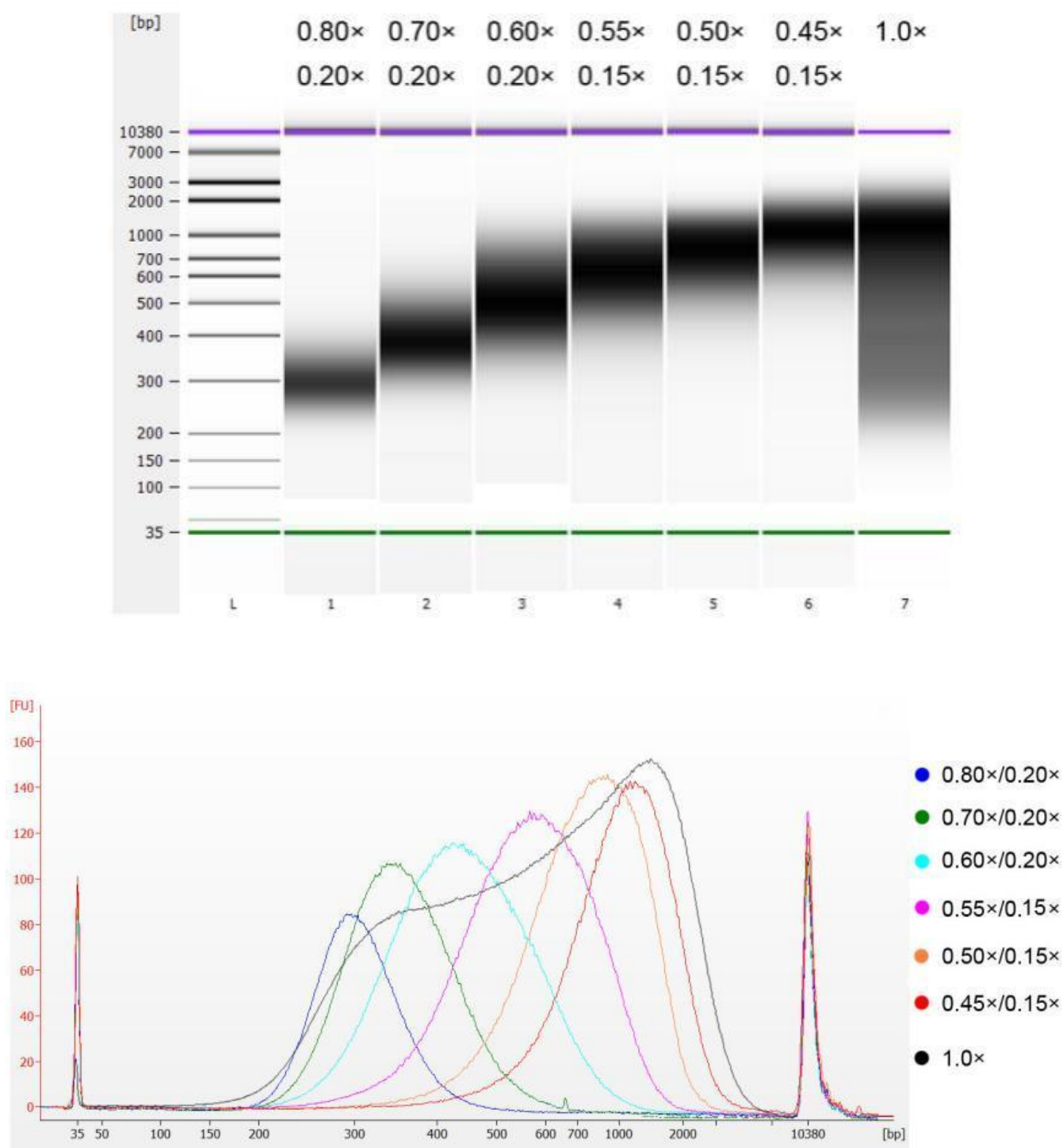


Figure 2. Agilent 2100 High Sensitivity DNA Chip Electropherogram. Smear fragments were dissolved in ddH₂O and size-selected using magnetic beads at ratios ranging from 0.80x/0.20x to 0.45x/0.15x.

Notes

1. For your safety and health, please wear a lab coat and disposable gloves during operation.
2. Beads must be equilibrated at room temperature for at least 30 minutes before use.
3. 80% ethanol should be freshly prepared prior to use; otherwise, recovery efficiency may be affected.
4. For size selection, the initial sample volume must be $\geq 100 \mu\text{L}$. If insufficient, adjust with ultrapure water. Small sample volumes may increase pipetting error and affect selection accuracy.

5. This product is for research use only.