xPure™ SPRI Beads

Operating instruction

(Cat#MB002,Version1.4)

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Overview

xPure™ SPRI Beads base on SPRI（Solid phase reverse immobilization）method，suitable for simplifies nucleic acid size selection and PCR purification for DNA and/or RNA library preparation for Next Generation Sequencing. It is compatible for with mainstream NGS library constraction kits. xPure™ SPRI Beads could be the best choice for DNA purification and size selection , effective reduce the experiment cost.

Component

Component	Catlog	Specification	Storage	Expiry date
xPure™ SPRI Beads	MB002-050 MB002-450	□ 50 mL □ 450mL	2 ~ 8℃ (Do not freeze)	Two years

Storage conditions

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

Application scope

This product is suitable for DNA purification and recovery, DNA and RNA library construction.

Self-prepared Material

Magnetic rack (WisGen Bio xMag™ Magnet or other supplier)

Nuclease-free ddH_20 and tube

Ethanol(100%)

Note

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 rack 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 or QSEP 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 rack with strong magnetic force in the operation and avoid disturbing magnetic beads in the last step .

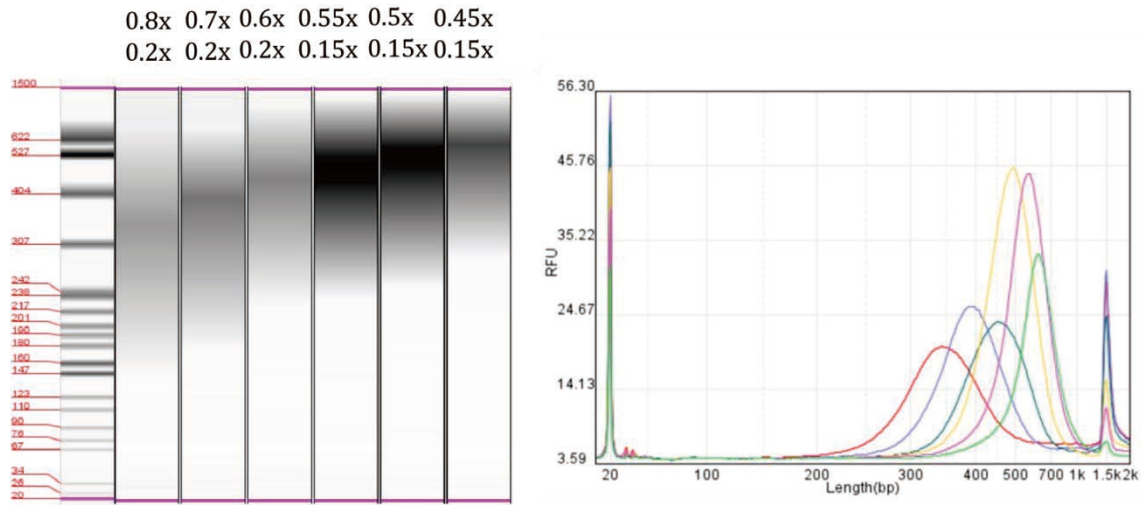

Figure 1. xPure™ SPRI Beads DNA size selection distribution

Experiment Process

DNA Purification

1. Take out the xPure™ SPRI Beads from 2 ~ 8℃ and keep the reagent at room temperature at least 30 min before use .
2. Mix the xPure™ SPRI Beads thoroughly by vortex or turning upside down . Add xPure™ SPRI Beads according to the reaction volume in Table 1. Mix the xPure™ SPRI Beads and sample thoroughly by pipette mixing 10 times .
3. Incubate the tube at room temperature for 5 min to bind DNA to magnetic beads .
4. Place the tube onto the magnetic rack for about 2 min . After the solution is clarified , carefully aspirate the supernatant and discard .
5. Keep the tube on magnetic rack . 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. After removal of supernatant, centrifuged the tube for 10 sec, then keep the tube on the magnetic rack 30 sec, aspirate out the ethanol totally and uncap the tube to air - dry the magnetic beads for 30 ~ 60 sec .
8. Take out the tube from magnetic rack . 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 5 min at room temperature , place the tube onto magnetic rack for about 2 min to separate beads from the solution , and carefully aspirate out the supernatant to a new Nuclease - free tube .

Table 1 : Reference Conditions of DNA purification

Reference purified magnetic bead dosage (magnetic bead volume dosage : sample volume)	Fragment size range after purification
0.6 ×	≥ 400 bp
0.8 ×	≥ 250 bp
1.0 ×	≥ 200 bp
1.2 ×	≥ 150 bp
1.5 ×	≥ 150 bp
2.0 ×	≥ 100 bp

DNA size selection

1. Take out the xPure™ SPRI Beads from 2 ~ 8 ℃ and keep the reagent at room temperature at least 30 min before use .
2. Mix the xPure™ SPRI Beads thoroughly by vortex or turning upside down . Add xPure™ SPRI Beads according to the 1st round of reaction volume in Table 2. Mix the xPure™ SPRI Beads and sample thoroughly by pipette mixing 10 times .
3. Incubate the tube at room temperature for 5 min .
4. Place the tube onto the magnetic rack for about 2 min . After the solution is clarified, carefully **transfer the supernatant** to a new Nuclease-free tube .
5. Add xPure™ SPRI Beads according to the 2nd round of reaction volume in Table 2 in the new tube , and mix the xPure™ SPRI Beads and sample thoroughly by pipette mixing 10 times .
6. Incubate the tube at room temperature for 5 min .
7. Place the tube onto the magnetic rack for about 2 min. After the solution is clarified , carefully aspirate the supernatant and discard .
8. Keep the tube on magnetic rack . 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. After removal of supernatant, centrifuged the tube for 10 sec, then keep the tube on the magnetic rack 30 sec, aspirate out the ethanol totally and uncap the tube to air - dry the magnetic beads for 30 ~ 60 sec .
11. Take out the tube from magnetic rack . 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 5 min at room temperature , place the tube onto magnetic rack for about 2 min to separate beads from the solution , and carefully aspirate out the supernatant to a new Nuclease - free tube .

Table 2: Reference Conditions of DNA size selection

Bead Volume/DNA Volume	250bp -350bp	300bp -400bp	400bp -500bp	450bp -550bp	500bp -600bp	550bp -650bp
1st volume ratio	0.8x	0.7x	0.6x	0.55x	0.5x	0.45x
2nd volume ratio	0.2x	0.2x	0.2x	0.15x	0.15x	0.15x

Note："x" stand for sample DNA Volume .If DNA library insert size want 250 bp, sample DNA volume is 100μL, for the 1st volume ratio, xPure™ SPRI Beads use 0.80 × 100 μL=80 μL； for the 2nd volume ratio, xPure™ SPRI Beads 0.20 × 100 μL=20 μL。

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