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Seq-Star™ DNAClean Beads

Cat#: AS-MB-007

Instruction Manual version 1.0

Product Description

Seq-Star™ DNAClean Beads system utilizes magnetic beads technology for rapid and efficient DNA purification from PCR and other enzymatic reactions in the process of next-gen sequencing library preparation, such as cDNA synthesis, A-tailing, adaptor ligation, and library PCR amplification.

Seq-Star™ DNAClean Beads, together with the optimized buffer formulation, selectively bind DNA fragments 100 bp or larger in size. Excess primers, primer dimers, nucleotides, salts, and enzymes are removed using a simple procedure.

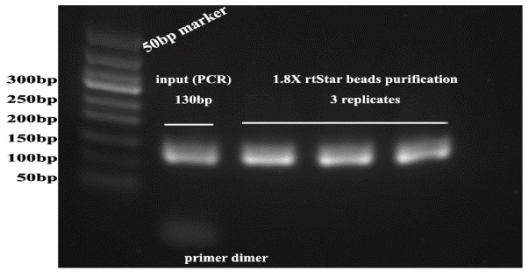


Figure 1. 130-bp PCR product purified with Seq-Star™ DNAClean Beads.

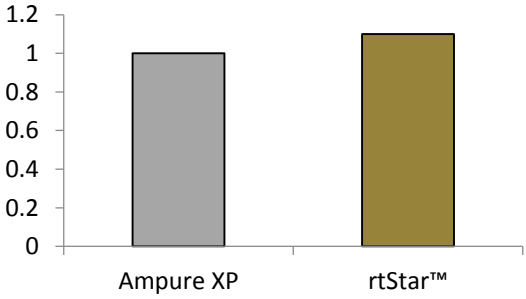


Figure 2. Recovery efficiency comparison between Seq-Star™ DNAClean and AMPure XP Beads. 1 μg fragmented DNA (200~1000 bp) was used as the input DNA.

Kit components

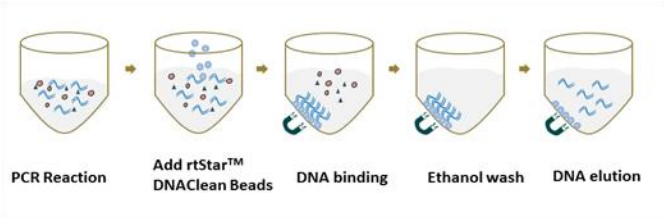
Cat#AS-MB-007	Cat#AS-MB-007	Storage
Seq-Star™ DNAClean Beads	50 mL	4°C
User Manual	√	

Additional required materials

- Magnetic stand (tube compatible)
- Pipettors and tips
- Fresh 75% ethanol
- DNA elution buffer (DNase/RNase free ddH_2O or TE buffer)

Protocol

Single-tube format



1. Gently shake the Seq-Star™ DNAClean Beads bottle to resuspend beads particles.
2. Add 1.8X (1.8:1 ratio, v:v) resuspended beads to the DNA sample. For example, add 90 μL Beads to 50 μL PCR solution. Mix thoroughly by pipetting up and down 10 times or by vortexing for 15 seconds.
3. Incubate the mix at room temperature for 5 minutes to allow DNA binding to the beads.
4. Place the mix tube on a magnetic stand until the solution is completely clear (about 2 minutes). Carefully aspirate and discard the supernatant.
5. Keep the tube on the magnetic stand and add 200μL freshly prepared 75% ethanol (the added ethanol volume should be larger than the original DNA and beads mix volume). Incubate at room temperature for 30 seconds and then aspirate off the

supernatant.

Caution: Do not disturb the separated magnetic beads in your operation!

6. Repeat Step 5 once for a total of two washes. Make sure to remove all the residual ethanol from the bottom of the tube.

   Optional: Air drying the beads for less than 5 minutes will help to remove the residual ethanol. However, care should be taken not to over dry the beads, which may significantly decrease the DNA elution efficiency.

7. Take the tube off the magnetic stand and resuspend the beads in 10~20 µL DNA Elution Buffer (water or TE buffer).

8. Incubate at room temperate for 2 minutes. Place the tube on the magnetic stand until the supernatant is completely clear from beads.

9. Transfer the supernatant to a new tube for downstream use.

High-throughput 96 or 384 well format

The protocol for high-throughput 96- or 384-well format is basically identical to the single-tube format. Use 1.8X resuspended Seq-Star™ DNAClean Beads and a 96- or 384-well compatible magnetic separator for the procedures. **Just adjust the volume of 75% ethanol in each well for the wash steps.**

	96-well	384-well
75% ethanol volume for each well	200 µL	300 µL

Troubleshooting

Problem	Possible causes	Suggestion
Low yields	Low amount of starting DNA	Check if the starting DNA amount is sufficient using another method (e.g. electrophoresis)
	DNA fragments too small	Small DNA fragments (e.g. 100~200 bp) give lower yields
	Incomplete elution of DNA	Ensure to fully resuspend the beads during elution
Problems in downstream applications	Salt carryover	• Completely aspirate off the supernatant after DNA binding and wash. • Perform one more ethanol wash
	Ethanol carryover	Air dry the beads before elution until no visible liquid on the surface of the beads dot, but do not over dry