GDSPure DNA Selection Magbeads

For Research Use Only

Cat. No.: NC1011, NC1012, NC1013

Components

Component	NC1011	NC1012	NC1013
GDSPure DNA Selection Magbeads	5 mL	60 mL	450 mL

Storage

This reagent should be kept at 2-8°C. Do not freeze. The shelf life is 2 years if unopened.

Description

GDSPure DNA Selection Magbeads use high-performance super-paramagnetic beads and excellent buffer ratio to accurately purify and select DNA fragments from 150 bp to 1000 bp or even larger. The excess nucleotides, salts, enzymes and other impurities introduced in the operation of DNA library construction will be removed after simple washing process, so as to obtain purified fragments, which can be directly used in downstream applications such as sequencing, hybridization, PCR and enzyme digestion. GDSPure DNA Selection Magbeads can be used by manual and automatic formats.

Application

Size selection and cleanup for Next-generation sequencing (NGS), Sanger sequencing, qPCR, ddPCR and microarrays, etc.

Preparatory Work before The Experiment

1. Washing solution: fresh 80% (V/V) ethanol solution
2. Eluent solution: nuclease-free water or TE Buffer
3. Vortex
4. Magnetic rack
5. In order to ensure the accuracy of the selecting range, the DNA sample volume should be ≥ 50 μL
6. Before the experiment, take out the magnetic beads from the refrigerator and warm them to room temperature for more than 20 minutes before use

Protocols

Size Selection of DNA Fragments Larger than A Specified Size (Single-Sided Selection)

1. Prepare 50 μL DNA sample into an appropriate centrifuge tube.
2. Add a certain volume of resuspended GDSPure DNA Selection Magbeads according to the 1st Bead Addition ratio in Table 1 to the sample. Gently blow with a pipette for 10 times (or vortex for 30 s). Incubate samples for 5 min at room temperature.

For example, to select all fragments larger than 250 bp in the sample, add 40 μL (0.80X) magnetic bead suspension.

3. Place the tube on an appropriate magnetic rack to separate the beads from the supernatant. When the solution is clear, carefully remove and discard the supernatant with a pipette (do not discard beads).
4. Add 200 μl of 80% freshly prepared ethanol to the tube while in the magnetic rack. Incubate at room temperature for 30 s, and then carefully remove and discard the supernatant (do not disturb beads).
5. Repeat Step 4 once for a total of two washes.

Note: Be sure to remove all visible liquid after the second wash.

6. Air dry the beads until the surface of the magnetic beads has no obvious gloss while the tube is on the magnetic rack with the lid open.

Note: Do not overdry the beads, this may result in lower recovery of DNA. When the beads start to crack, they are too dry.

7. Remove the tube from the magnetic rack. Elute the DNA target from the beads into 30-40 μl nuclease-free water or TE Buffer. Mix well by pipetting up and down at least 10 times or on a vortex mixer for 30 s. Incubate for 3-5 min at room temperature.
8. Place the tube on the magnetic rack. After 5 min (or when the solution is clear), transfer the supernatant to a new tube. The selection is completed, and the selected DNA can be used for subsequent experiments or stored at -20°C for a long time.

Size Selection of DNA Fragments in Specific Size Intervals (Double-Sided Selection)

1. Prepare 50 μL DNA sample into an appropriate centrifuge tube and label it as A.
2. Add a certain volume of resuspended GDSPure DNA Selection Magbeads according to the 1st Bead Addition ratio in Table 1 to the tube A. Gently blow with a pipette for 10 times (or vortex for 30 s). Incubate samples for 5 min at room temperature.

For example, to select fragments about 250 bp in the sample, add 40 μL (0.80X) magnetic bead suspension.

3. Place the tube A on an appropriate magnetic rack to separate the beads from the supernatant. When the solution is clear, carefully remove the supernatant to a new tube and label it as B. Discard beads.
4. Add a certain volume of magnetic bead suspension according to 2nd Bead Addition ratio in Table 1 to the tube B. Gently blow with a pipette for 10 times (or vortex for 30 s). Incubate samples for 5 min at room temperature.

For example, to select fragments about 250 bp in the sample, add 10 μL (0.20X) magnetic bead suspension.

5. Place the tube B on magnetic rack. When the solution is clear, carefully remove and discard the supernatant.

6. Add 200 µl of 80% freshly prepared ethanol to the tube B while in the magnetic rack. Incubate at room temperature for 30 s, and then carefully remove and discard the supernatant (do not disturb beads).
7. Repeat Step 6 once for a total of two washes.
Note: Be sure to remove all visible liquid after the second wash.
8. Air dry the beads until the surface of the magnetic beads has no obvious gloss while the tube is on the magnetic rack with the lid open.
Note: Do not overdry the beads, this may result in lower recovery of DNA. When the beads start to crack, they are too dry.
9. Remove the tube B from the magnetic rack. Elute the DNA target from the beads into 30-40 µl nuclease-free water or TE Buffer. Mix well by pipetting up and down at least 10 times or on a vortex mixer for 30 s. Incubate for 3-5 min at room temperature.
10. Place the tube B on the magnetic rack. After 5 min (or when the solution is clear), transfer the supernatant to a new tube. The selection is completed, and the selected DNA can be used for subsequent experiments or stored at -20°C for a long time.

Table 1: Recommended Conditions for Size Selection

Approximate Size			**200 bp**	**250 bp**	**300 bp**	**400 bp**	**500 bp**	**600 bp**	**700 bp**
Bead Ratio	1st Addition	Bead	0.90X	0.80X	0.70X	0.60X	0.55X	0.50X	0.45X
	2nd Addition	Bead	0.50X	0.20X	0.20X	0.20X	0.15X	0.15X	0.15X

Notes
1. Please read the instruction carefully before use and operate according to the instructions.
2. Ethanol in the centrifuge tube should be removed as far as possible before elution to ensure elution efficiency.
3. Eluent volume can be adjusted according to the experimental requirements, but not less than 20 µL.
4. The magnetic beads should avoid centrifugation, freezing and other operations. Before use, the beads suspension can be fully mixed by vortex and other methods, and placed for more than 20 minutes to warm to room temperature.
5. Avoid liquid hanging on the tube cover during vortex and pipetting operation to reduce the DNA loss.