Library/DNA Size Selection Kit (>30 kb, Magnetic Beads)

Catalog No.	20112S	20112L
Runs*	24	96

*Based on 50 µl of sample volume

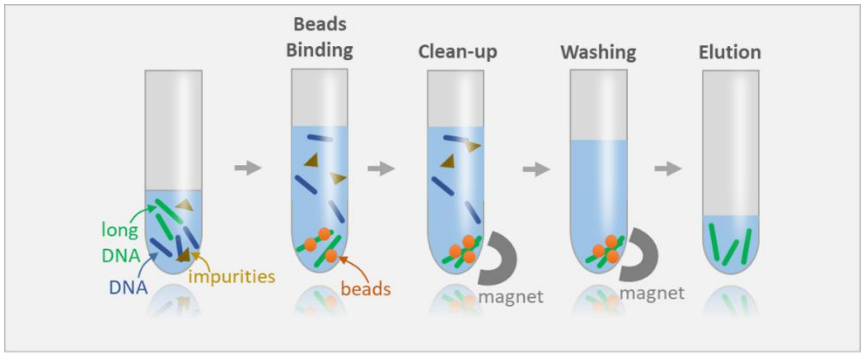
Description

The **Library/DNA Size Selection Kits (>30 kb, Magnetic Beads)** were developed for DNA size selection using magnetic beads with a selection of DNA fragments over 30 kb. The kits provide a simple and quick approach for the enrichment of a specific range of DNA fragments. The kit workflow allows single-sided size selection for the specific size cutoffs.

The magnetic beads technology uses paramagnetic particles, also known as SPRI (Solid Phase Reversible Immobilization) beads, to bind DNA reversibly and selectively. DNA fragments can be size-selected and purified by changing the properties of the magnetic beads or SPRI beads.

DNA size selection is a selective capture of DNA fragments of a specific range of size for next-generation sequencing (NGS) library preparations, PCR, ChIP assay, DNA ligations, and other applications. Long-read sequencing uses a large DNA fragment as input, the sequencing data is wasted when DNA fragments are short. Usually, DNA size selection is preferred to remove smaller fragments. The kit is ideal for long-read sequencing with DNA size >30 kb.

Specific ranges of NGS libraries can be selected using magnetic beads with different buffer compositions. After the beads-binding step and rinsing step, the NGS library fragments are eluted in water or an appropriate buffer. The magnetic beads method has great advantages over time-consuming column purification and tedious gel-based purification.



Large DNA size selection with single clean-up.

Features

- High specificity of size selection: >30 kb
- Fast and simple
  - 20-min protocol
  - No gels required
  - No columns required
  - No centrifugation required
- High recovery of selected DNA fragments
- Consistent performance: rapid size selection with high reproducibility

Component

Catalog No.	20112S	20112L
G6 Beads	1.2 mL	4.8 mL
B30 Buffer	2.0 mL	8.0 mL
WR Buffer	2.0 mL	8.0 mL
Elution Buffer	1.2 mL	4.8 mL

Storage Condition

- Store at 4°C, stable up to 12 months.

Reagent & Equipment Needed (not provided in this reagent)

- Magnetic particle concentrator
- 96-well plates or microfuge tubes
- 80% ethanol (prepare before use)

Protocol

Attention:

- Invert or shake the beads bottles thoroughly to resuspend the beads before use.
- Accurate pipetting is needed for precious size selection.

1) Add 50 µl of the G6 Beads to the wells containing 50 µl of samples in a 96-well plate. Slow pipetting of the viscous beads is needed for precise aliquot. Mix by pipetting gently and thoroughly with a multichannel pipettor. Incubate for 5 min. **Note**: Small sample volumes tend to generate more variations. If the sample volume is less than 50 µl, increase the volume to 50 µl by adding nuclease-free water.
2) Load the sample plate on a magnet, incubate for 1 min, and discard the supernatant carefully.
3) Remove the plate from the magnet, add 80 µl of B30 Buffer, mix by pipetting with a multichannel pipettor for 20 times. Make sure the beads is completely resuspended.
4) Add 80 µl of WR Buffer, mix by pipetting with a multichannel pipettor for 10 times. Incubate for 3 min.
5) Load the sample plate on a magnet, incubate for 2 min, and discard the supernatant carefully.
6) Add 200 µl of 80% ethanol without disturbing the beads. Incubate for 1 min and discard the supernatant carefully. Remove all residual ethanol without disturbing the beads.
7) Remove the plate from the magnet and resuspend the beads in at least 20 µl of water (pH >6.0), Elution Buffer (10 mM Tris-HCl), TE buffer, or low TE buffer to elute DNA from the beads. **Note**: Resuspension of the beads in less than 20 µl may reduce the yield. A brief centrifugation step may improve bringing eluates to the bottom of the wells before placing on the magnet.
8) Load the plate on the magnet, incubate for 1 min, and transfer the supernatant (containing the size-selected sample) to a new plate or tubes without disturbing the beads.

Quality Control

Magnetic beads components passed stringent functional quality test.

Product Use Limitation

This product is developed and sold for research purposes and *in vitro* use only. Please refer to biodynami.com for Material Safety Data Sheet of the product.

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