Library/DNA Size Selection Kit (250-350 bp, Magnetic Beads)

Catalog No.	20104S	20104L
Runs*	24	96

*Based on 50 µl of sample volume

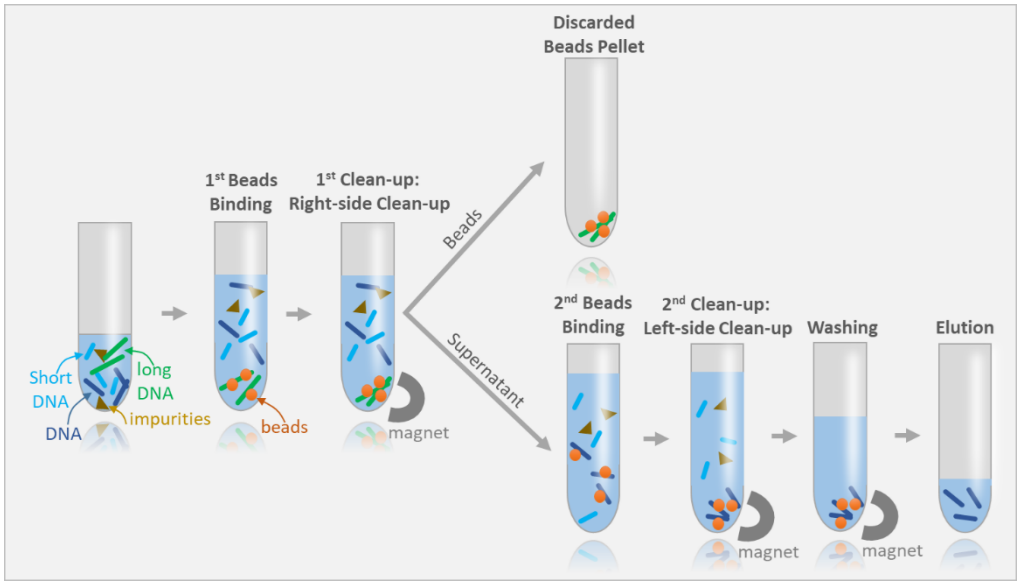
Description

The **Library/DNA Size Selection Kits (250-350 bp, Magnetic Beads)** were developed for DNA size selection using magnetic beads with a selection range spanning from 250 bp to 350 bp. The kits provide a simple and quick approach for the enrichment of a specific range of DNA fragments. The kit workflow allows double-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. DNA size selection is preferred after NGS library prep in most of the cases. Precise library size selection can increase sequencing efficiency, improve data quality, and reduce costs. The kit is the best choice for illumina paired-end 100 (PE100) sequencing with 100-200 bp library inserts.

Specific DNA fragments at a certain length range can be purified simply using magnetic separation with different beads components, avoiding tedious and time-consuming gel extraction and column-based purification. The first beads-binding step, referred to as the right-side clean-up, removes large DNA fragments. The large DNA fragments are bound to the beads and are discarded. The desired DNA fragments in the supernatant are transferred to a new well, and new beads are added to the supernatant for the second beads-binding, referred to as the left-side clean-up. The double-size selected DNA fragments are eluted after ethanol rinsing.



DNA size selection with dual clean-ups.

Features

- High specificity of size selection: 250-350 bp
- Ideal for illumina paired-end 100 (PE100) sequencing
    - With 100-200 bp library inserts
- 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.	20104S	20104L
W1 Beads	0.96 mL	3.84 mL
K1 Beads	0.96 mL	3.84 mL
Elution Buffer	0.96 mL	3.84 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

Note:

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

1) Add 40 µl of the W1 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 on a magnet, incubate for 3 min, and transfer the supernatant (containing the sample) to a new 96-well plate. Discard the beads pellet.
3) Add 40 µl of the K1 Beads to the wells containing samples. 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.
4) Load the sample plate on a magnet, incubate for 3 min, and discard the supernatant carefully.
5) 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.
6) Remove the plate from the magnet and resuspend the beads in at least 20 µl of water, Elution Buffer (10 mM Tris-HCl), or low TE buffer to elute DNA from the beads. **Note**: Resuspension of the beads in less than 20 µl will reduce the yield. A brief centrifugation step may improve bringing eluates to the bottom of the wells before placing on the magnet.
7) 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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