Biomiga Inc.
The Inventor of EZgene™ and ViraTrap™ Systems

MgPure Size Selection Beads M1101

VER 221218

Contents

Important: Do not freeze beads. Beads must be stored at 4°C and equilibrated to room temperature before use.

Introduction

The MgPure DS beads is design to selectively binding fragments based on the reagent-to-sample ratio used. User can flexibility perform left, right or double-sided size selection. This product is designed for both manual and fully automated purification of DNA and RNA samples.

It is also designed to recover highly concentrated DNA from PCR products. It is suitable for automated purification of PCR samples. By using the highly efficient binding ability of MgPure technology, DNA fragments are selectively bound to the surface of beads, salts and other impurities are washed away with two quick wash steps.

This kit is suitable for both manual and fully automated processing. Purified DNA is ready for downstream applications include NGS, microarrays, automated fluorescent DNA sequencing, and restriction enzyme digestion.

Storage and Stability

Store MgPure DS beads at 4-8°C. Do not freeze. The shelf life is 24 months from the date of purchase.

Components

M1101-01	10 mL
M1101-02	100 mL
M1101-03	500 mL

NGS Library Size Selection Protocol

MgPure DS beads can be used for single-sided or double-sided size selection during NGS library prep.
By varying the beads ratio, DNA fragments of different sizes are bound to the beads.
Single-sided size selection follows essentially the same procedure as above (PCR Reaction and Enzymatic Reaction Cleanup), except that the beads ratio is adjusted to capture the different desired DNA length. A general guideline is provided as below but can be fine-tuned as needed.

Fragments to capture	Recommended ratio
≥450 bp	0.6x
≥300 bp	0.8x
≥250 bp	0.9x
≥150 bp	1.5x
≥100 bp	1.8x

Double-sided selection removes both larger and smaller DNA fragments making it ideal for preparing libraries optimized for the sequencing chemistry of choice. The following procedure is a 0.7x-0.9x selection, which generates 250-400bp fragments. Other ratios can be used to fine-tune the selection range.

1. Equilibrate the MgPure DS beads at room temperature for at least 30 min. Vortex for 15 sec to fully resuspend the beads.

   Important: Beads must be warmed up to room temperature, otherwise recovery rate will be lower.
2. Add 35 µL of MgPure DS beads to 50 µL of sample in a PCR plate or tube. Mix thoroughly until homogeneous.
3. Incubate sample at room temperature for 2-5 minutes.
4. Place the plate or tube on the magnetic stand at room temperature for 2-5 minutes.
5. Transfer 80 µL of the supernatant to a new well.

   Important: Be careful not to transfer any beads with the supernatant.
6. Add 10 µL of MgPure DS beads to the 80 µL supernatant. Mix thoroughly until homogeneous.

7. Place the plate or tube on the magnetic stand at room temperature for 2-5 minutes.
8. Remove and discard clear supernatant.
9. With plate or tube on the stand, add 200 µL of 80% ethanol to each magnetic bead pellet and incubate at room temperature for at least 30 seconds. Carefully remove ethanol by pipette.

   Important: 80% ethanol must be freshly made.
10. Repeat step 9 for a total of 2 ethanol washes. Ensure all ethanol has been removed.
11. Remove the plate from the magnetic stand and let dry at room temperature for 5 minutes or until bead pellet is visibly dry.

    Important: Do not over-dry the beads. Do not dry at higher temperature or under vacuum.
12. Resuspend dried beads with 52 µL of Elution Buffer. Mix thoroughly until homogeneous.
13. Incubate resuspended beads at room temperature for 2-5 minutes.
14. Place the plate or tube on the magnetic stand at room temperature for 2-5 minutes.
15. Transfer 50 µL of clear sample to a new well.

PCR Reaction and Enzymatic Reaction Cleanup Protocol

MgPure DS beadsoffers a fast and convenient way to cleanup PCR or other enzymatic reactions. Typically, a 1:1.8x volumetric ratio of reaction:beads is used. Amplicons or DNA fragments >100bp are retained while smaller fragments, primers, linkers, enzymes and other buffer components are effectively removed. The following example demonstrates the procedure of cleaning up a 50 µL PCR reaction.

1. Equilibrate the MgPure DS beads at room temperature for at least 30 min. Vortex for 15 sec to fully resuspend the beads.

   Important: Beads must be warmed up to room temperature, otherwise recovery rate will be lower.
2. Add 90 µL of MgPure DS beads to the 50 µL reaction in a 96 well PCR plate or tube and mix well by pipetting or vortexing. The reaction-to-beads ratio is 1:1.8.
3. Incubate at room temperature for 2-5 minutes.
4. Place the plate or tube on the magnetic stand at room temperature for 2-5 minutes or until the supernatant appears completely clear.
5. Remove and discard clear supernatant taking care not to disturb beads.
6. With plate or tube on the stand, add 200 µL of freshly prepared 80% ethanol to each magnetic bead pellet and incubate at room temperature for at least 30 seconds. Remove ethanol by pipette.

   Important: 80% ethanol must be freshly made.
7. Repeat step 6, for a total of 2 ethanol washes and ensure all ethanol has been removed.
8. Remove the plate or tube from the magnetic stand and let dry at room temperature for 5 minutes or until dry.

   Important: Do not over-dry the beads. Do not dry at higher temperature or under vacuum.
9. Resuspend dried beads with of 52 µL Elution Buffer. Mix well by piptetting. Ensure beads are no longer attached to the side of the well.
10. Incubate resuspended beads at room temperature for 2-5 minutes.
11. Place plate or tube on the magnetic stand for 2-5 minutes or until the sample appears clear.
12. Transfer 50 µL of clear sample to a new plate or tube.

Limited use and liability

This product is warranted to perform as described in its labeling and in Biomiga's literature when used in accordance with instructions. No other warranties of any kind, express or implied, including, without limitation, implied warranties of merchantability or fitness for a particular purpose, are provided by Biomiga. Biomiga's sole obligation and purchaser's exclusive remedy for breach of this warranty shall be, at the option of Biomiga, to replace the products, Biomiga shall have no liability for any direct, indirect, consequential, or incidental damage arising out of the use, the results of use, or the inability to use it product.

For technical support or learn more product information, please contact us at (858) 603-3219 or visit our website at www.biomiga.com

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