Instruction Manual
Research Use Only

MagBeads FastDNA Kit for Blood

Magnetic bead-based Purification for total DNA from whole blood, plasma, serum, buffy coat, bone marrow, other body fluids, lymphocytes, cultured cells.

Size: 96 preps
Storage: 15-25 °C
Cat. No.: 116574096
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Table of Contents

1. Introduction to MagBeads FastDNA Kit for Blood

MagBeads FastDNA® Kit for Blood is intended for purification of total DNA for reliable PCR and Southern blotting. Total DNA (e.g., genomic, viral, mitochondrial) can be purified from whole blood, plasma, serum, buffy coat, bone marrow, other body fluids, lymphocytes, cultured cells.

MagBeads FastDNA® Kit for Blood is based on the purification method of high binding magnetic particles. The sample is lysed and digested. DNA is released into the lysate. After addition of magnetic particles and binding solution, DNA will be adsorbed on the surface of magnetic particles, and impurities such as proteins will be removed without adsorption. The adsorbed particles were washed with washing buffer to remove the proteins and impurities, washed with ethanol to remove salts, and finally the DNA was eluted with Elution Buffer.

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2. Kit Components and User Supplied Materials

2.1 MagBeads FastDNA Kit for Blood Component

MagBeads FastDNA Kit for Blood (#116574096, 96 Preps)	
Components	Package
Magbeads Particles	3.5 mL
Proteinase K	50 mg
Protease Dissolve Buffer Glycerol/Tris/$CaCl_2$	3 mL
Buffer MLA Guanidine Salt	60 mL
Buffer DW1 Guanidine Salt	120 mL
Buffer CW Guanidine Salt	60 mL
Buffer BW3 Water	60 mL
Elution Buffer Tris	30 mL

2.2 User Supplied Materials

- Disposable powder-free gloves.
- Pipettes (adjustable).
- Sterile pipette tips with aerosol barriers (up to 200 µl).
- Vortex mixer.
- Desktop microcentrifuge with rotor for 2 ml reaction tubes (RCF max. 16,000 x g).
- PCR box or Biological cabinet. • Vacuum aspirator with flask for removing supernatant.
- Tube racks.
- 1.5 ml polypropylene sterile tubes.
- Refrigerator for 2-8°C.
- Deep-freezer for ≤ -16°C.
- Waste bin for used tips.
- Permanent pen for labeling
- Thermostatic bath or dry block for tubes with controlled temperature and capable of incubating at 25-100°C.

3. Storage and Kit Stability

Proteinase K and Magbeads Particles should be stored at 2-8°C upon arrival. However, short-term storage (up to 24 weeks) at room temperature (15-25°C) does not affect their performance. The remaining kit components can be stored at room temperature (15-25°C) and are stable for at least 18 months under these conditions.

4. Important Consideration Before Use

- ❑ Add 2.5 mL Protease Dissolve Buffer into the Proteinase K, and store at -20 - 8℃ after it dissolves.

5. Safety Precautions

The user should always pay attention to the following:

• Use sterile pipette tips with aerosol filters and use new tip for every procedure.

• Store extracted positive material (samples, controls and amplicons) away from all other reagents.

• Thaw all components thoroughly at room temperature before starting an assay.

• When thawed, mix the components and centrifuge briefly.

• Use disposable gloves, laboratory coats, protect eyes while samples and reagents handling. Thoroughly wash hands afterwards.

• Do not eat, drink, smoke, apply cosmetics, or handle contact lenses in laboratory work areas.

• Do not use a kit after its expiry date.

• Dispose of all samples and unused reagents in compliance with local authorities requirements.

• Samples should be considered potentially infectious and handled in a biological cabinet in compliance with appropriate biosafety practices.

• Clean and disinfect all sample or reagent spills using a disinfectant such as 0.5% sodium hypochlorite, or other suitable disinfectant.

• Avoid contact with the skin, eyes and mucose membranes. If skin, eyes and mucose membranes contact immediately flush with water, seek medical attention.

• Material Safety Data Sheets (MSDS) are available on request.

• Use of this product should be limited to personnel trained in the techniques of DNA amplification.

• The laboratory process must be one directional; it should begin in the Extraction Area move to the Amplification and Detection Area. Do not return samples, equipment and reagents to the area in which the previous step was performed.

6. Protocol

Using a microcentrifuge tube

1. Pipette 20 µL Proteinase K and 30 µL Magbeads Particles into the bottom of a 1.5 mL microcentrifuge tube.
2. Add 200 µL sample to the microcentrifuge tube. Use up to 200 µL whole blood, plasma, serum, buffy coat, or body fluids, or up to 5 x 10^6 lymphocytes or culture cells in 200 µL PBS.
3. Add 500 µL Buffer MLA to the sample. Mix by pulse-vortexing for 15s. Incubate at room temperature for 10 mins with occasional mixing. Vortex occasionally during incubation to disperse the sample or place it on a shaker.
4. Place the tube on a magnetic stand and allow the beads to aggregate for 1 min. With the tube on the magnetic stand, perform the aspiration, and discard the supernatant from the tube.
5. Add 500 µL Buffer DW1 and resuspend the beads by vortexing for 15s.
6. Place the tube on a magnetic stand and allow the beads to aggregate for 1 min. With the tube on the magnetic stand, perform the aspiration, and discard the supernatant from the tube.
7. Repeat step 5-6 once more.
8. Add 500 µL Buffer CW and resuspend the beads by vortexing for 20s.
9. Place the tube on a magnetic stand and allow the beads to aggregate for 1 min. With the tube on the magnetic stand, perform the aspiration, and discard the supernatant from the tube.
10. Leave the tube on the magnetic stand. Slowly add 500 µL Buffer BW3 and leave it for 20-30s, then aspirate.
11. Add 100 µL Elution Buffer to the sample and shake at maximum speed for 10 mins to elute the DNA. If constant vortexing for 5 mins is not possible, vortex for 20 seconds every 1-2 mins for 10 mins.
12. Place the tube on a magnetic stand and allow the beads to aggregate.

13. Transfer the clear supernatant containing purified DNA into a microcentrifuge tube. Store the DNA at -20°C.

Using a deep well plate

1. Pipette 20 µL Proteinase K and 30 µL Magbeads Particles into the bottom of a 96 deep-well plate.
2. Add 200 µL sample into the well. Use up to 200 µL whole blood, plasma, serum, buffy coat, or body fluids, or up to 5 x 10^6 lymphocytes or culture cells in 200 µL PBS.
3. Add 500 µL Buffer MLA to the sample. Vortex to mix at shaker (such as IKA MS3) for 10 min at 1000~1200 rpm.
4. Place the plate on a magnetic strand and allow the beads to aggregate for 2 mins. With the plate on the magnetic stand, perform the aspiration, and discard the supernatant from the tube.
5. Add 500 µL Buffer DW1 and vortex to mix at shaker (such as IKA MS3) for 1 min at 1200 rpm.
6. Place the plate on a magnetic stand and allow the beads to separate for 1 min. With the plate on the magnetic stand, perform the aspiration, and discard the supernatant from the tube.
7. Repeat step 5-6 once.
8. Add 500 µL Buffer CW and Vortex to mix at shaker (such as IKA MS3) for 1 min at 1200 rpm.
9. Place the plate on a magnetic stand and allow the beads to separate for 1 min. With the plate on the magnetic stand, perform the aspiration, and discard the supernatant from the tube.
10. Leave the plate on the magnetic stand. Slowly add 500 µL Buffer BW3 and leave it for 30s, then aspirate.
11. Add 100 µL Elution Buffer to the sample and vortex to mix at shaker (such as IKA MS3) for 10 min at 1300 rpm.
12. Place the plate on a magnetic stand and allow the beads to aggregate. Let it sit at

room temperature until the beads are completely cleared from solution.

13. Transfer the clear supernatant containing the purified DNA to a 96-well microplate (not provided). Store the DNA at -20°C

7. Troubleshooting

This guide may be useful in solving any problems that may arise. For further assistance, please contact our technical support team at **apac-techsupport@mpbio.com**

Problem	Recommendation
False negatives with extraction product	Degradation of the nucleic acid contained in the sample. Use a new sample, store samples appropriately.
	Loss of nucleic acid deposit. Carefully draw off the wash solution and try not to remove the nucleic acid deposit.
	Degradation of the extracted nucleic acid. Plastic free from DNAses and RNAses should be used. Use a new aliquot of kit's component.
False positives with extraction product	Contamination during sample extraction. One test tube at a time should be opened. Avoid spilling the contents of the test tube, always change tips.
	Contamination of the reagents prepared for the step. Use a new aliquot of a component.
	Contamination of the extraction zone by amplicons. Surfaces and instruments using aqueous detergents should be cleaned, wash lab coats, replace test tubes and tips in use.

8. Product Use Limitation & Warranty

The products presented in this instruction manual are for research or manufacturing use only. They are not to be used as drugs or medical devices to diagnose, cure, mitigate, treat, or prevent diseases in humans or animals, either as part of an accepted course of therapy or in experimental clinical investigation. These products are not to be used as food, food additives or general household items. Purchase of MP Biomedicals products does not grant rights to reproduce, modify, or repackage the products or any derivative thereof to third parties. MP Biomedicals makes no warranty of any kind, expressed or implied, including merchantability or fitness for any particular purpose, except that the products sold will meet our specifications at the time of delivery.

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