

MagBeads Fast Circulating DNA Kit (Ready-to-Use for MPure-32)

Magnetic bead-based Purification for high-quality circulating
DNA (cfDNA) from cell-free body fluids
(such as plasma, serum)

Size: 96 preps

Storage: 15-25 °C

Cat. No.: 117033900

Content Version: May 2024

Table of Contents

1. Introduction to MagBeads Fast Circulating DNA Kit	3
2. Kit Components and User Supplied Materials	4
2.1 MagBeads FastDNA Kit for Blood Component	4
2.2 User Supplied Materials	4
3. Storage and Kit Stability	5
4. Important Consideration Before Use	5
5. Safety Precautions	6
6. Protocol	7
7. Troubleshooting	8
8. Product Use Limitation & Warranty	9

1. Introduction to MagBeads Fast Circulating DNA Kit

MagBeads Fast Circulating DNA Kit is intended for purification of high-quality circulating DNA (cfDNA) from cell-free body fluids (such as plasma, serum) using the MPure-32™ aNAP System. The purified DNA is suitable for direct use in downstream applications such as PCR, real-time PCR, Biochip analysis and NGS.

MagBeads Fast Circulating DNA Kit 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.

Visit www.mpbio.com to explore additional products to support your research.

2. Kit Components and User Supplied Materials

2.1 MagBeads Fast Circulating DNA Kit Component

MagBeads Fast Circulating DNA Kit (#117033900, 96 Preps)	
Components	Package
96-Well Reagent Plates	6 plates
Carrier RNA	150 µg
Proteinase K	90 mg
Protease Dissolve Buffer	5 mL
Elution Buffer	30 mL
8-strip A (Cover for Magnetic Rod)	12 pieces

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, Carrier RNA and Magbeads Particles F should be stored at 2 - 8°C upon arrival. However, short-term storage (up to 12 weeks) at room temperature (15-25°C) will not affect their performance. The remaining kit components can be stored dry at room temperature (15-25°C) and are stable for at least 18 months under these conditions. The entire kit can be stored at 2-8°C, but in this case, buffers should be redissolved before use. Make sure that all buffers are at room temperature when used.

4. Important Consideration Before Use

- Add 4.5 mL Protease Dissolve Buffer into Proteinase K, and store at -20 °C after it dissolves.
- Add 0.15 mL Elution Buffer into the Carrier RNA, and store at -20°C 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

MPure-32 Automation Purification Method

1. Peel off the sealing film on the 96-well reagent plate.
2. Add 30-50 μL elution buffer into well #6 and/or #12.
3. Transfer desired volume of sample and other components according to the following table:

Note: If the sample volume is less than 300 μL , add them to well #1 or #2 (#7 or #8). If the sample volume is between 300 and 1000 μL , split them evenly between wells #1 and #2 (#7 and #8).

Total Sample Volume (μL)	Well #	Components at Sample Well		
		Sample (μL)	PK (μL)	Carrier RNA (ng)
< 300	1 or 2 ; 7 or 8	300	20	50
300 - 1000	1 and 2 (sample 1); 7 and 8 (sample 2)	300-500	20	50

4. Run the assay with the following program:

Cir_DNA_v3

Step	Well	Process	Time (s)			Mixing Speed	Temp (C)
			Mix	Wait	Attract		
1	#4/#10	Collect	60	0	60	Medium	RT
2	#1/#7	Bind 1	300	0	120	Low	RT
3	#2/#8	Bind 2	300	0	120	Low	RT
4	#3/#9	Wash 1	90	0	60	Medium	RT
5	#4/#10	Wash 2	60	0	60	Medium	RT
6	#5/#11	Wash 3	60	0	60	Medium	RT
7	#5/#11	Dry	0	300	0	-	RT
8	#6/#12	Elute	300	0	120	Medium	RT
9	#1/#7	MagBeads Release	60	0	0	Medium	RT

5. Transfer the eluted nucleic acid into a clean 1.5 mL microcentrifuge tube. The eluent is now ready for downstream applications. Store the purified nucleic acid at -20°C for an extended storage.

Note: If there are still Magnetic Beads remaining in eluted DNA, please centrifuge at $14,000 \times g$ for 3-5 mins and transfer the supernatant into a clean 1.5 mL microcentrifuge tube.

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.

Buyer's exclusive remedy and the sole liability of MP Biomedicals hereunder shall be limited to, at our discretion, no replacement or compensation, product credits, refund of the purchase price of, or the replacement of materials that do not meet our specification. By acceptance of the product, Buyer indemnifies and holds MP Biomedicals harmless against, and assumes all liability for, the consequence of its use or misuse by the Buyer, its employees, or others, including, but not limited to, the cost of handling. Said refund or replacement is conditioned on Buyer notifying within thirty (30) days of receipt of product. Failure of Buyer to give said notice within thirty (30) days shall constitute a waiver by the Buyer of all claims hereunder with respect to said material(s).

Australia

Tel: +61 2.8824.2100
Tel: +61 1800.249.998
Email: custserv.au@mpbio.com

Austria & Germany

Tel: 0800.426.67.337
Tel: 00800.7777.9999
Email: custserv.de@mpbio.com

Belgium

Tel: 00800.7777.9999
Email: custserv.be@mpbio.com

Canada

Tel: +1 800.854.0530
Email: custserv.ca@mpbio.com

China

Tel: +86 400.150.0680
Email: custserv.cn@mpbio.com

Europe

Tel: +33 3.88.67.54.25
Tel: +33 00800.7777.9999
Email: custserv.eur@mpbio.com

France

Tel: +33 3.88.67.54.25
Email: custserv.fr@mpbio.com

India

Tel: +91 22.27636921/22/25
Email: custserv.in@mpbio.com

Italy

Tel: 00800.7777.9999
Email: custserv.it@mpbio.com

Japan

Tel: +81 3.6667.0730
Email: custserv.jp@mpbio.com

Latin America

Tel: +1 800.854.0530
Tel: +1 440.337.1200
Email: custserv.la@mpbio.com

New Zealand

Tel: +64 9.912.2460
Email: custserv.nz@mpbio.com

North America

Tel: +1 800.854.0530
Tel: +1 440.337.1200
Email: custserv.na@mpbio.com

Poland

Tel: 00800.7777.9999
Email: custserv.po@mpbio.com

Russia

Tel: +7 495 604.13.44
Email: custserv.rs@mpbio.com

Serbia

Tel: +381 11.242.1972
Email: custserv.se@mpbio.com

Singapore/ APAC

Tel: +65 6775.0008
Tel: +65 6394.7675
Email: custserv.ap@mpbio.com

South Korea

Tel: +82 2.425.5991
Email: custserv.kr@mpbio.com

Switzerland

Tel: 00800.7777.9999
Email: custserv.ch@mpbio.com

The Netherlands

Tel: 00800.7777.9999
Email: custserv.nl@mpbio.com

United Kingdom

Tel: 0800.282.474
Email: custserv.uk@mpbio.com

www.mpbio.com

