Instruction Manual
Research Use Only

MagBeads FastRNA Kit

Magnetic bead-based Purification for total RNA from tissue and cell culture samples

Size: 96 preps
Storage: 15-25 °C
Cat. No.: 116572096
Content Version: Jan 2026

Learn More at: www.mpbio.com

MP™

Table of Contents

1. Introduction to MagBeads FastRNA Kit 3
2. Kit Components and 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 9
8. Product Use Limitation & Warranty 10

1. Introduction to MagBeads FastRNA Kit

Magbeads FastRNA Kit is intended for simple and rapid extraction of total RNA from tissue and culture cells samples. The kit is based on superparamagnetic particles purification technology, no phenol-chloroform extraction or alcohol precipitation. The whole extraction process is only 60 minutes. Purified RNA is ready for downstream applications such as RT-PCR, virus RNA testing and so on.

Magbeads FastRNA Kit combines the speed and efficiency of silica-based technology with the convenient handling of magnetic particles for purification of total RNA. Samples are lysed and RNA is purified from lysates in one step through its binding to the silica surface of the particles in the presence of a chaotropic salt. The particles are separated from the lysates using a magnet and DNA is removed by treatment with RNase-free DNase. The magnetic particles are efficiently washed, and RNA is eluted in RNase-free water.

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

2. Kit Components and User Supplied Materials

2.1 MagBeads FastRNA Kit Component

MagBeads FastRNA Kit (#116572096, 96 Preps)	
Components	Package
Magbeads RNA Particles	4.0 mL
Proteinase K	48 mg
Protease Dissolve Buffer	5 mL
DNase I	2 x 600 μL
DNase Buffer	2 x 30 mL
Buffer RTL	80 mL
Buffer MCB	30 mL
Buffer MW1	66 mL
Buffer RW2	50 mL
RNase Free Water	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

MagBeads Particles, DNase I and Proteinase K should be stored at 2 - 8°C upon arrival. All other components and reagents of MagBeads FastRNA Kit can be stored at room temperature (15-25 ℃) until the expiration date printed on the kit label.

4. Important Consideration Before Use

- ❑ Add 2.5 mL Protease Dissolve Buffer into Proteinase K/Carrier RNA bottle, and store at -20 ℃ after it dissolves.
- ❑ Add 84 mL ethanol to the bottle of Buffer MW1
- ❑ Add 200 mL ethanol to the bottle of Buffer RW2
- ❑ Add 70 mL isopropanol to the bottle of Buffer MCB.
- ❑ (Optional) 2-mercaptoethanol can be added into an aliquot of RTL Lysis Buffer before use. Add 20 μL 2-mercaptoethanol per 1 mL RTL Lysis Buffer. This mixture can be stored at room temperature for 2 weeks.

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

Sample Preparation

A. **Cell**
Harvest cells (no more than 1 x 10^7 cells). For pelleted cells, loosen the cell pellet thoroughly by flicking the tube and add the appropriate volume of 500 µL Buffer RTL. For direct lysis of cells grown in a monolayer, add 500 µL Buffer RLT onto the cell-culture dish. Pass the lysate at least 5 times through a blunt 20-gauge needle fitted to an RNase-Free Syringe.

B. **Animal Tissue**
Transfer up to 20 mg of animal tissue to a Lysing Matrix M and add 600 µL Buffer RTL. Homogenize using FastPrep® for 35 sec at 5 m/s. After lysis, centrifuge the lysate at 14,000 x g for 3 mins at room temperature.

C. **Plant Tissue**
Transfer up to 50 mg of plant sample to a Lysing Matrix M and add 600 µL Buffer RTL. Homogenize using FastPrep® for 35 sec at 5 m/s, repeat once. After lysis, centrifuge the lysate at 14,000 x g for 3 mins at room temperature.

D. **Yeast Cell**
Collect 5 x 10^6 yeast cells. Resuspend the pellet with 600 µL of Buffer RTL, then transfer it to a Lysing Matrix E or Lysing Matrix YG. Homogenize using FastPrep® for 35 sec at 5 m/s. After lysis, centrifuge the lysate at 14,000 x g for 3 mins at room temperature.

E. **Bacterial Cell**
Collect 1 x 10^8 bacterial cells. Resuspend the pellet with 600 µL of Buffer RTL, then transfer it to a Lysing Matrix E or Lysing Matrix YB. Homogenize using FastPrep® for 35 sec at 5 m/s. After lysis, centrifuge the lysate at 14,000 x g for 3 mins at room temperature.

Manual Purification Method

1. Transfer 500 µL of the lysate to a new clean 1.5 mL tube (not provided).
2. Add 500 µL Buffer MCB, 30 µL Magbeads RNA Particles and 20 µL Proteinase K to the sample. Mix up and down 20~30 times. Stand at room temperature for 10 mins, and mix up and down for several times. Place the tube on the magnetic rack for 1 min, until the Magbeads RNA Particles have formed a tight pellet, then remove the supernatant.
3. Add 600 µL Buffer MW1 and vortex for 20 s to resuspend the particles. Place the tube on the magnetic rack for 1 min, then remove the supernatant. Spin down briefly to collect liquid on the tube and remove all liquid carefully. Dry on air for 2 mins.
4. Add 300 µL DNase Mixture (290 µL DNase Buffer + 10 µL DNase I) to the sample, shake slightly to resuspend the particles and incubate at room temperature for 15 mins.
5. Add 450 µL Buffer MCB to the sample and vortex for 20 s. Stand at room temperature for 5 mins and mix up and down for 2~3 times. Place the tube on the magnetic rack for 1 min, then remove the supernatant.

6. Add 600 μL Buffer MW1 and vortex for 10s to resuspend the particles. Place the tube on the magnetic rack for 1 min, then remove the supernatant.
7. Add 600 μL Buffer RW2 and vortex for 10s to resuspend the particles. Place the tube on the magnetic rack for 1 min, then remove the supernatant.
8. Repeat step 7.
9. Spin down briefly to collect the liquid on the tube, place the tube on the magnetic rack. Remove all liquid carefully. Dry at room temperature or 37℃ for 10 mins.
10. Add 30~100 μL RNase Free Water to sample, mix the particles by vortex. Stay at room temperature for 3 mins.
11. Place the tube on the magnetic rack for 3 mins. Transfer the supernatant containing the purified RNA to a new 1.5 mL centrifuge tube. Store RNA at -80°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.

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