omega BIO-TEK
innovations in nucleic acid isolation

Product Manual

Mag-Bind® Total RNA Xpress Kit

M6742-00	**1 x 96 preps**
M6742-01	**4 x 96 preps**

Manual Date: May 2026
Revision Number v1.1

For Research Use Only

Omega Bio-tek, Inc.
400 Pinnacle Way, Suite 450
Norcross, GA 30071
www.omegabiotek.com

770-931-8400
770-931-0230
info@omegabiotek.com

omega-bio-tek
omegabiotek
omegabiotek

Mag-Bind® Total RNA Xpress Kit

Table of Contents

Manual Date: May 2026
Revision Number v1.1

omega BIO-TEK

Intended Use/Intended User

Intended Use

For professional research use.

The Mag-Bind® Total RNA Xpress Kit is intended for reliable purification of high-quality total RNA including small RNAs from up to 25 mg tissue or 1 x 10^6 cultured cells.

The Mag-Bind® Total RNA Xpress Kit utilizes magnetic bead-based technology and can be processed either manually or automated on most open-ended platforms as well as magnetic processors.

Intended User

The Mag-Bind® Total RNA Xpress Kit is intended for professional use in a laboratory environment by or under the supervision of professional users, such as laboratory personnel, technicians, researchers and physicians specifically instructed and trained in molecular biology techniques and familiar with magnetic bead-based purification, either manual or automated.

Product Description

The Mag-Bind® Total RNA Xpress Kit allows for rapid and reliable isolation of high-quality total RNA including small RNAs from a wide variety of tissue and cultured cells. Total RNA can be purified from up to 25 mg tissue or 1 x 10^6 cultured cells. The Kit follows most magnetic bead-based technology and can be processed either manually or automated on most open-ended liquid handling platforms as well as magnetic processors.

If using the Mag-Bind® Total RNA Xpress Kit for the first time, please read this manual in its entirety to become familiar with the procedures. Samples are first lysed in OTRK Lysis Buffer supplemented with DTT. The lysate is cleared using centrifugation and total nucleic acids are then bound to Mag-Bind® Particles RQ in the presence of isopropanol. Genomic DNA bound to the beads is eliminated through a DNase I digestion step while preserving the integrity of the RNA bound to the beads. The beads are subjected to two quick alcohol washes to remove contaminants. High-quality RNA is then eluted in Nuclease-free Water and is ready for use in a wide range of downstream applications such as RT-PCR, RT-qPCR, microarray analysis, next-generation RNA sequencing (RNA-Seq), etc.

Important

1. If automating the procedure on a liquid handler or a magnetic processor, please contact your Omega Bio-tek representative for instrument specific instructions. It is the responsibility of the user to validate any automated method for any particular use.

2. This kit includes enough reagents for the specified number of preparations plus at least an additional 10% overage to ensure there is sufficient volume. Please be aware that the actual number of preparations may be lower due to pre-aliquoting of reagents, processing partial plates, and automation platform used, etc. Please visit the product page at www.omegabiotek.com for more details and ordering information.

Kit Contents and Storage

Kit Contents

Product No	M6742-00	M6742-01
Purifications	1 x 96	4 x 96
OTRK Lysis Buffer	50 mL	200 mL
VHB Buffer	88 mL	2 x 176 mL
Nuclease-free Water	15 mL	60 mL
Mag-Bind® DNase I	900 µL	3 mL
NR1 Buffer	25 mL	2 x 25 mL
Proteinase K Solution	2.2 mL	9 mL
Mag-Bind® Particles RQ	3.5 mL	13 mL
User Manual	✓	✓

Storage and Stability

All of the Mag-Bind® Total RNA Xpress Kit components are guaranteed for at least 12 months from the date of purchase when stored as follows. Mag-Bind® DNase I and NR1 Buffer should be stored at -20°C. Proteinase K Solution can be stored at room temperature for up to 12 months. For long-term storage, store Proteinase K Solution at 2-8°C. Mag-Bind® Particles RQ should be stored at 2-8°C. All remaining components should be stored at recommended temperatures as mentioned on the bottle label and away from bright light. During shipment or storage in cool ambient conditions, precipitates may form in some buffers. Dissolve such deposits by warming the solution at 37°C and gently shaking.

Preparing Reagents

1. Dilute VHB Buffer with 100% ethanol as follows and store at room temperature.

Kit	100% Ethanol to be Added
M6742-00	112 mL
M6742-01	224 mL per bottle

2. Prepare a stock of 2 mL of 1 M Dithiothretiol (DTT). This can be made fresh or frozen in aliquots wrapped in foil and thawed prior to use. Use immediately once thawed.

3. Prepare enough stock of 80% ethanol and store at room temperature.

4. Shake or vortex the Mag-Bind® Particles RQ to fully resuspend the particles before use. The particles must be fully suspended during use to ensure proper binding.

Warnings and Safety and Handling Information

Warnings

This kit is for professional research use.

Please decontaminate and dispose of all potentially infectious materials in accordance with applicable local, state/provincial, and/or national regulations. For any assistance, please contact Omega Bio-tek at info@omegabiotek.com.

If you use this kit following an automated extraction workflow, the surface of the automated platform is considered a biohazard. Use appropriate decontamination and disposal methods in adherence to all applicable local state/provincial, and/or national regulations.

Safety and Handling Information

All chemicals and biological materials are potentially hazardous.

Biological samples such as plasma, serum, tissues, body fluids, blood, etc. are potentially infectious and must be treated as biohazardous materials. Use appropriate decontaminations and disposal methods in adherence to all applicable local state/provincial, and/or national regulations.

Please refer to safety data sheets (SDSs) for information on safe handling, transport and disposal of different reagents included in this kit. SDSs are made available in PDF format on the product page at www.omegabiotek.com. Discard all waste in accordance with the local safety regulations.

Where allowed, packaging for nonhazardous buffers, kit boxes, or other packaging materials may be recycled in accordance with local regulations. Reference product labelling or visit www.omegabiotek.com for more information.

Precautions

Some of the buffers included in the Mag-Bind® Total RNA Xpress Kit contain guanidine-based chaotropic agents which can form highly reactive compounds when combined with bleach. DO NOT add bleach or acidic solutions to guanidine containing sample-preparation waste. Please access the SDSs online for detailed information on the reagents.

Component	Description
OTRK Lysis Buffer 	Contains: Guanidine thiocyanate. Danger! Harmful if swallowed. Causes severe skin burns and eye damage. Harmful to aquatic life with long lasting effects. Do not eat, drink, or smoke when using this product. Do not breathe mist/vapors/spray. Wear protective gloves, protective clothing, eye protection, and face protection. Wash all exposed external body areas thoroughly after handling. Avoid release to the environment. SWALLOWED: Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER/doctor/ physician/first aider/if you feel unwell. INHALED: Remove person to fresh air and keep comfortable for breathing. IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
Proteinase K Solution 	Contains: Proteinase K. Danger! Causes mild skin irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Avoid breathing dust/fume/gas/mist/spray. Wear protective gloves/ protective clothing/eye protection/fact protection. Wear respirator protection. If exposed or concerned: Call a poison center or doctor/physician. Remove person to fresh air and keep at rest in a position comfortable for breathing.

Precautions

Component	Description
VHB Buffer 	Contains: Guanidine hydrochloride. Warning! Causes serious eye irritation. Causes skin irritation. May cause an allergic skin reaction. Harmful if swallowed. Avoid breathing mist/vapors/spray. Do not eat, drink, or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection. If exposed or concerned: call a poison center or doctor/physician. IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/ attention. ON SKIN: Wash with plenty of water and soap. Take off contaminated clothing and wash before reuse. If skin irritation persists: Get medical advice/attention. SWALLOWED: Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

Manual Protocol for Tissue

Important: If automating this procedure on a liquid handler or a magnetic processor, please contact your Omega Bio-tek representative for instrument-specific instructions. It is the responsibility of the user to validate any automated method for any particular use.

Materials and Equipment to be provided by user:

- Centrifuge capable of 10,000*g*
- Heat block or incubator capable of 50°C
- Magnetic separation device
- Vortexer
- 2.0 mL microcentrifuge tube for homogenization
- 1.5 mL or 2.0 mL microcentrifuge tube for sample processing
- 2.8 mm ceramic beads (Recommend: Omni International, Part #19-646)
- 100% ethanol
- 100% isopropanol
- 80% ethanol
- **Required:** 1 M Dithiothreitol (DTT)
- *Optional:* Mixer mill such as a SPEX CertiPrep Geno/Grinder® 2010 or Omni's Bead Ruptor

Before Starting:

- Prepare VHB Buffer according to the "Preparing Reagents" section on Page 5.
- Vortex the Mag-Bind® Particles RQ thoroughly before use.
- Prepare enough 80% ethanol needed for wash steps.
- Add 40 µL 1M DTT per 1 mL OTRK Lysis Buffer before use.
- Preheat Nuclease-free Water at 50°C.

1. Dilute 1M DTT (not provided) to a final concentration of 40 mM in OTRK Lysis Buffer. Only prepare as much OTRK Lysis Buffer/DTT master mix that will be used immediately. Example: Add 40 µL 1M DTT per 1 mL OTRK Buffer.

   Note: 1 M DTT can be made fresh or frozen in aliquots wrapped in foil and thawed prior to use. Follow the guidelines for DTT preparation on Page 5.

2. Add two 2.8 mm ceramic beads (not provided) to a 2.0 mL microcentrifuge tube (not provided) to prepare a homogenizer tube.

3. Select one of the following methods depending on the storage condition of the tissue sample.

   A. For fresh/frozen tissue sample, add up to 25 mg tissue. We recommend starting with an input of 5 - 10 mg. Based on yield and quality of nucleic acids obtained from 5 -10 mg, adjust the starting amount accordingly. Continue to Step 4.

   OR

   B. For tissue samples stored in RNAlater® Solution, RNA-Lock Reagent or DNA/RNA Shield follow the modified protocols below:

      i. RNAlater® Solution: Aspirate and discard RNAlater® from tissue. Retrieve tissue with sterile forceps and blot with absorbent paper towel. Transfer tissue to the homogenizer tube as described in Step 2. Continue to Step 4.

      ii. DNA/RNA Shield: Homogenize the tissue samples in DNA/RNA Shield according to the manufacturer's instructions. Transfer 225 µL homogenized tissue sample in DNA/RNA Shield to the homogenizer tube as described in Step 2. Add 225 µL OTRK/DTT master mix to each sample and continue to Step 5.

      iii. RNA-Lock Reagent: Transfer 225 µL tissue sample in RNA-Lock Reagent and to the homogenizer tube as described in Step 2. Add 225 µL OTRK/DTT master mix to each sample and continue to Step 5.

4. Add 450 µL OTRK/DTT master mix to the sample.

5. Vortex at maximum speed for 2 minutes to lyse and homogenize samples. For best results, a Mixer Mill, such as SPEX CertiPrep Geno/Grinder® 2010 or Omni's Bead Ruptor, should be used.

   Note:
   - Parameters for complete lysis vary depending on homogenization method. Adjust the parameters accordingly for your method
   - Visually inspect that the sample is completely homogenized after lysis as incomplete homogenization may affect yields.

6. Centrifuge at 10,000*g* for 5 minutes.

7. Transfer 400 µL cleared lysate to a new 1.5 mL microcentrifuge tube (not provided). Avoid transferring the debris as it can reduce yield and purity.

8. Add 400 µL 100% isopropanol and 30 µL Mag-Bind® Particles RQ.

   Note: Mag-Bind® Particles RQ and isopropanol can be prepared as a master mix.

9. Vortex at maximum speed for 5 minutes.

   Note: If constant vortexing for 5 minutes is not possible, vortex for 30 seconds every 2 minutes for 5 minutes.

10. Place the tube on the magnetic separation device to magnetize the Mag-Bind® Particles RQ. Let sit at room temperature until the Mag-Bind® Particles RQ are completely cleared from solution.

11. Aspirate and discard the supernatant. Do not disturb the Mag-Bind® Particles RQ.

12. Remove the tube from the magnetic separation device.

13. Add 930 µL VHB Buffer and 20 µL Proteinase K Solution.

    Note: VHB Buffer must be diluted with 100% ethanol prior to use. Please see Page 5 for instructions.

14. Vortex at maximum speed for 3 minutes.

15. Place the tube on the magnetic separation device to magnetize the Mag-Bind® Particles RQ. Let sit at room temperature until the Mag-Bind® Particles RQ are completely cleared from solution.

16. Aspirate and discard the supernatant. Do not disturb the Mag-Bind® Particles RQ.

17. Remove the tube from the magnetic separation device.

18. Add 950 µL VHB Buffer.

    Note: VHB Buffer must be diluted with 100% ethanol prior to use. Please see Page 5 for instructions.

19. Vortex at maximum speed for 2 minutes.

20. Place the tube on the magnetic separation device to magnetize the Mag-Bind® Particles RQ. Let sit at room temperature until the Mag-Bind® Particles RQ are completely cleared from solution.

21. Aspirate and discard the supernatant. Do not disturb the Mag-Bind® Particles RQ.

22. Remove the tube from the magnetic separation device.

23. Add 950 µL 80% ethanol (not provided). Pipet to resuspend. After resuspending the beads in 80% ethanol, transfer the entire sample to a new 1.5 mL microcentrifuge tube.

    Note: Prepare enough 80% ethanol needed for all wash steps.

24. Vortex at maximum speed for 2 minutes.

25. Place the tube on the magnetic separation device to magnetize the Mag-Bind® Particles RQ. Let sit at room temperature until the Mag-Bind® Particles RQ are completely cleared from solution.

26. Aspirate and discard the supernatant. Do not disturb the Mag-Bind® Particles RQ.

27. Let sit on magnet at room temperature for 1 minute to dry the Mag-Bind Particles RQ. Remove residual liquid with a pipettor.

28. Remove the tube from the magnetic separation device.

29. Prepare the Mag-Bind® DNase I mix according to the table below.

Component	Amount per Prep	Total Amount per 96-well Plate
Mag-Bind® DNase I	6 µL	634 µL
NR1 Buffer	100 µL	10.56 mL

*10% excess volume has been calculated for a 96-well plate.

30. Add 106 µL Mag-Bind® DNase I mix to each sample. Mix by pipetting up and down to fully resuspend the magnetic particles.

31. Let sit at room temperature for 10 minutes.

32. Place the tube on the magnetic separation device to magnetize the Mag-Bind® Particles RQ. Let sit at room temperature until the Mag-Bind® Particles RQ are completely cleared from solution.

33. Aspirate and discard the supernatant. Do not disturb the Mag-Bind® Particles RQ.

34. Remove the tube from the magnetic separation device.

35. Add 950 µL 80% ethanol.

36. Vortex at maximum speed for 2 minutes.

37. Place the tube on the magnetic separation device to magnetize the Mag-Bind® Particles RQ. Let sit at room temperature until the Mag-Bind® Particles RQ are completely cleared from solution.

38. Aspirate and discard the supernatant. Do not disturb the Mag-Bind® Particles RQ.

39. Leave the tube on the magnetic device. Wait 1 minute. Remove residual liquid with a pipette. Air dry the Mag-Bind® Particles RQ for an additional 5 minutes.

40. Remove the tube from the magnetic separation device.

41. Add 50 – 100 µL Nuclease-free Water preheated at 50 °C.

42. Vortex at maximum speed for 5 minutes while incubating at 50°C.

    Note: If constant vortexing for 5 minutes is not possible at 50°C, vortex for 30 seconds every 1 minute for 5 minutes.

43. Place the tube on the magnetic separation device to magnetize the Mag-Bind® Particles RQ. Let sit at room temperature until the Mag-Bind® Particles RQ are completely cleared from solution.

44. Transfer the cleared supernatant containing purified RNA to a clean 1.5 mL microcentrifuge tube. Store RNA at -80°C.

Manual Protocol for Cultured Cells

Important: If automating this procedure on a liquid handler or a magnetic processor, please contact your Omega Bio-tek representative for instrument-specific instructions. It is the responsibility of the user to validate any automated method for any particular use.

Materials and Equipment to be provided by user:

- Centrifuge capable of 10,000*g*
- Heat block or incubator capable of 50°C
- Magnetic separation device
- Vortexer
- 1.5 mL or 2.0 mL microcentrifuge tube
- 100% ethanol
- 100% isopropanol
- 80% ethanol
- Pre-chilled PBS if using cells grown in monolayer
- Trypsin if using cells grown in monolayer

Before Starting:

- Prepare VHB Buffer according to the "Preparing Reagents" section on Page 5.
- Vortex the Mag-Bind® Particles RQ thoroughly before use.
- Prepare enough 80% ethanol needed for wash steps.
- Preheat Nuclease-free Water at 50°C.

1. Harvest the cells by choosing one of the following methods (A or B).

   A. For cells grown in suspension:
   i. Determine the number of cells. Do not use more than 1 x 10^6 cells.
   ii. Pellet the appropriate number of cells by centrifuging at 500*g* for 5 minutes.
   iii. Add 450 µL OTRK Lysis Buffer to each sample.
   iv. Pipet up and down 10 times to mix samples.

B. For cells grown in monolayer:

These cells can either be lysed directly in the cell culture dish or trypsinized and collected as a cell pellet prior to lysis. Cells grown in cell culture flasks should always be trypsinized.

Direct cell lysis:

i. Determine the number of cells.
ii. Aspirate the cell culture medium completely.
iii. Add 450 µL OTRK Lysis Buffer to each sample.
iv. Pipet up and down 10 times to mix the sample.

Trypsinization of cells:

i. Determine the number of cells.
ii. Aspirate the cell culture medium completely.
iii. Wash the cells with 4°C PBS.
iv. Aspirate the PBS.
v. Wahs the cells with 4°C PBS containing 0.1-0.25% trypsin.
vi. Check cells for detachment. Make sure cells are detached before proceeding.
vii. Add cell culture medium containing serum to inactivate the trypsin.
viii. Transfer the cells to an RNase-free microcentrifuge tube (not provided).
ix. Centrifuge at 500*g* for 5 minutes.
x. Aspirate the supernatant completely.
xi. Add 450µL OTRK Lysis Buffer to each sample.
xii. Pipet up and down 10 times to mix the samples.

.

2. Centrifuge at 10,000*g* for 5 minutes.

3. Proceed to Step 7 of the Tissue Protocol on Page 11 to continue with the remainder of the RNA Purification Procedure.

Automation Protocol for Tissue

Follow this protocol for performing upfront lysis steps in a 96-well plate before moving to a magnetic processor. Please contact your Omega Bio-tek representative for magnetic processor instrument-specific instruction. It is the responsibility of the user to validate any automated method for any particular use.

Note: For liquid handler instrument-specific instructions, contact your Omega Bio-tek representative for more information. It is the responsibility of the user to validate any automated method for any particular use.

Materials and Equipment to be provided by user:

- Centrifuge capable of 4,000*g* with swing-bucket rotor for 96-well plates
- Heat block or incubator capable of 50°C
- Adaptor for 96-well processing plate
- Magnetic separation device (Recommend Alpaqua® Magnum™ EX, Part #A000380)
- Vortexer
- 96-well plate for homogenization with a capacity of at least 2.0 mL (Recommend Nunc, Part #95040452)
- Silicone mat for homogenization plate (Recommend Nunc, Part #9503230)
- 96-well plate with a capacity of at least 2.0 mL for sample processing (Recommend Nunc, Part #278752)
- 96-well microplate for nucleic acid storage
- 2.8 mm ceramic beads for (Recommend: Omni International, Part #19-646)
- 100% ethanol
- 100% isopropanol
- 80% ethanol
- **Required:** 1 M Dithiothreitol (DTT)
- *Optional:* Mixer mill such as a SPEX CertiPrep Geno/Grinder® 2010 or Omni's Bead Ruptor 96

Before Starting:

- Prepare VHB Buffer according to the "Preparing Reagents" section on Page 5.
- Vortex the Mag-Bind® Particles RQ thoroughly before use.
- Prepare enough 80% ethanol needed for wash steps.
- Add 40 µL 1M DTT per 1 mL OTRK Lysis Buffer before use.
- Preheat Nuclease-free Water at 50°C.

1. Dilute 1M DTT (not provided) to a final concentration of 40 mM in OTRK Lysis Buffer. Only prepare as much OTRK Lysis Buffer/DTT master mix that will be used immediately. Example: Add 40 µL 1M DTT per 1 mL OTRK Lysis Buffer.

   Note: 1 M DTT can be made fresh or frozen in aliquots wrapped in foil and thawed prior to use. Follow the guidelines for DTT preparation on Page 5.

2. Add two 2.8 mm ceramic beads (not provided) to each well of a 96-well processing plate with a well capacity of at least 2.0 mL (not provided) to prepare a 96-well homogenizer plate.

3. For fresh/frozen tissue sample, add up to 25 mg tissue to a 96-well homogenizer plate. We recommend starting with an input of 5 - 10 mg. Based on yield and quality of nucleic acids obtained from 5 -10 mg, adjust the starting amount accordingly. Continue to Step 4.

   Note: For tissue samples stored in RNAlater® Solution, RNA-Lock Reagent or DNA/RNA Shield, please refer to the "Manual Protocol for Tissue" on Page 10 for more information.

4. Add 450 µL OTRK Lysis Buffer/DTT master mix to the sample.

5. Seal the 96-well homogenizer plate with a silicone mat (not provided).

6. Vortex at maximum speed for 2 minutes to lyse and homogenize samples. For best results, a Mixer Mill, such as SPEX CertiPrep Geno/Grinder® 2010 or Omni's Bead Ruptor 96, should be used.

   Note:
   - Parameters for complete lysis vary depending on homogenization method. Adjust the parameters accordingly for your method
   - Visually inspect that the sample is completely homogenized after lysis as incomplete homogenization may affect yields.

7. Centrifuge at 4,000*g* for 5 minutes.

8. Transfer 400 µL cleared lysate to a new 96-well processing plate (not provided). Avoid transferring the debris as it can reduce yield and purity.

9. Add 400 µL 100% isopropanol and 30 µL Mag-Bind® Particles RQ.

10. At this point, the plate can be placed on a magnetic processor or liquid handler for the remainder of the extraction. Contact your Omega Bio-tek representative for an automated procedure for instrument-specific instructions.

Automation Protocol for Cultured Cells

Follow this protocol for performing upfront lysis steps in a 96-well plate before moving to a magnetic processor. Please contact your Omega Bio-tek representative for magnetic processor instrument-specific instruction. It is the responsibility of the user to validate any automated method for any particular use.

Note: For liquid handler instrument-specific instructions, contact your Omega Bio-tek representative for more information. It is the responsibility of the user to validate any automated method for any particular use.

Materials and Equipment to be provided by user:

- Centrifuge capable of 4,000*g* with swing-bucket rotor for 96-well plates
- Heat block or incubator capable of 50°C
- Adaptor for 96-well processing plate
- Magnetic separation device (Recommend Alpaqua® Magnum™ EX, Part #A000380)
- Vortexer
- 96-well plate with a capacity of at least 2.0 mL for sample processing (Recommend Nunc, Part #278752)
- 96-well microplate for nucleic acid storage
- 100% ethanol
- 100% isopropanol
- 80% ethanol
- Pre-chilled PBS for cells grown in monolayer
- Trypsin for cells grown in monolayer

Before Starting:

- Prepare VHB Buffer according to the "Preparing Reagents" section on Page 5.
- Vortex the Mag-Bind® Particles RQ thoroughly before use.
- Prepare enough 80% ethanol needed for wash steps.
- Preheat Nuclease-free Water at 50°C.

1. Harvest cells by choosing one of the following methods (A or B).

A. For cells grown in suspension:

i. Determine the number of cells. Do not use more than 1 x 10^6 cells.
ii. Pellet the appropriate number of cells by centrifuging at 500*g* for 5 minutes.
iii. Add 450 µL OTRK Lysis Buffer to each sample.
iv. Pipet up and down 10 times to mix the samples.

B. For cells grown in monolayer:

These cells can either be lysed directly in the cell culture dish or trypsinized and collected as a cell pellet prior to lysis. Cells grown in cell culture flasks should always be trypsinized.

Direct cell lysis:

i. Determine the number of cells.
ii. Aspirate the cell culture medium completely.
iii. Add 450 µL OTRK Lysis Buffer to each sample.
iv. Pipet up and down 10 times to mix the sample.

Trypsinization of cells:

i. Determine the number of cells.
ii. Aspirate the culture medium completely.
iii. Wash cells with 4°C PBS.
iv. Aspirate the PBS.
v. Wash cells with 4°C PBS containing 0.1-0.25% trypsin.
vi. Check cells for detachment. Make sure cells are detached before proceeding.
vii. Add cell culture medium containing serum to inactivate the trypsin.
viii. Transfer cells to an RNase-free microplate (not provided).
ix. Centrifuge at 500*g* for 5 minutes.
x. Aspirate the supernatant completely.
xi. Add 450 µL OTRK Lysis Buffer to each sample.
xii. Pipet up and down 10 times to mix the samples.

Note: Not removing cell-culture medium completely will inhibit lysis and dilute the lysate. This will affect the conditions for binding of RNA to the Mag-Bind® Particles RQ.

2. Centrifuge at 4,000*g* for 5 minutes.

3. Add 400 µL 100% isopropanol and 30 µL Mag-Bind® Particles RQ.

4. At this point, the plate can be placed on a magnetic processor or liquid handler for the remainder of the extraction. Contact your Omega Bio-tek representative for an automated procedure for instrument-specific instructions.

Troubleshooting Guide

Please use this guide to solve any problems that may arise. We hope that it will aid in clearing up any questions for you. If you need further assistance, please contact our technical support staff at our Toll Free Number, 1-800-832-8896.

Possible Problems and Suggestions

Problem	Cause	Solution
Low yields	Loss of magnetic particles during operation	Increase particle collection or magnetization time.
	Incomplete resuspension of magnetic particles	Resuspend the magnetic particles by vortexing before use.
	Incomplete sample homogenization	Visually check sample is completely homogenized before proceeding with extraction.
	Premature elution of RNA from magnetic particles	Follow directions as written during the Mag-Bind® DNase I Digestion step. Do not use heat.
Problem with downstream application	Mag-Bind® Particles RQ in eluate	Transfer the cleared eluate as a 2-step process (i.e., 50 µL per transfer) to minimize RQ particles getting transferred to the new tube.
	Ethanol carryover	Completely dry and remove any residual liquid from the magnetic particles before eluting RNA.
DNA Contamination	Incomplete digestion of DNA during DNase Digestion Step	Remove any residual ethanol (Step 27) before addition of Mag-Bind® DNase I.

Troubleshooting Guide

Problem	Cause	Solution
Low quality RNA	Low quality sample	Be sure to use fresh tissue or properly stored tissue samples to reduce RNA degradation.
	Too much sample or high RNase contamination	Reduce the amount of sample used during extraction.
	RNase contamination	Be sure to clean workspace thoroughly, use proper RNA handling techniques and RNase-free plasticware.

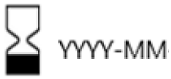
Contact Information

To reorder supplies, report a device failure, or complaint, please contact:

	Manufacturer Omega Bio-tek, Inc. 400 Pinnacle Way Suite 450 Norcross, GA 30071 Website: www.omegabiotek.com Email: info@omegabiotek.com SRN: US-MF-000024148

Symbols

The following symbols may appear in the instructions for use or on the packaging and labeling:

Picture	Description
	Use-by date
	Check components for storage conditions
	Lot number
	Manufacturer
	No additional hazards or not classified as hazardous according to GHS. Also see hazardous symbols as defined in the Precautions Section
	Recycling Information visit www.omegabiotek.com/company/recycling

Symbols

Picture	Description
	Website
	Telephone
	Fax
	Email
	LinkedIn
	X
	Facebook

Document Revision History

Revision Number	Description
May 2026, v1.1	Added instructions for homogenization of samples in DNA/RNA Shield.
December 2025, v1.0	Initial release.

Notices and Disclaimers

Trademarks and Licenses

HiBind®, E.Z.N.A.®, MicroElute®, Mag-Bind®, MagBinder®, and MB Fit24™ are registered trademarks of Omega Bio-tek, Inc.
Qiagen®, QIAvac®, and Vacman® are all trademarks of their respective companies.
PCR is a patented process of Hoffman-La Roche. Use of the PCR process requires a license.

Notes

Notes

For more purification solutions, visit www.omegabiotek.com

AVAILABLE FORMATS


Spin Columns

96-Well Silica Plates


Mag Beads

SAMPLE TYPES


Blood / Plasma

Plasmid


Cultured Cells


Plant & Soil


NGS Clean Up


Tissue


FFPE


Fecal Matter

Omega Bio-tek, Inc.
400 Pinnacle Way, Suite 450
Norcross, GA 30071
www.omegabiotek.com

770-931-8400
770-931-0230
info@omegabiotek.com

omega-bio-tek
omegabiotek
omegabiotek