omega BIO-TEK
innovations in nucleic acid isolation

Product Manual

Mag-Bind® Bacterial DNA 96 Kit

M2350-00	1 x 96 preps
M2350-01	4 x 96 preps

Manual Date: August 2026
Revision Number: v6.0

For Research Use Only

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Mag-Bind® Bacterial DNA 96 Kit

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Introduction

The Mag-Bind® Bacterial DNA 96 Kit allows rapid and reliable isolation of high-quality genomic DNA (gDNA) from a wide variety of bacterial species. Up to 0.5 mL gram-positive or gram-negative bacterial culture can be processed each time. The key to the system is Omega Bio-tek's proprietary Mag-Bind® Particles CH that reversibly bind DNA under optimal conditions allowing proteins and other contaminants to be removed. DNA is easily eluted with deionized water or low salt buffer.

NOTE: Mag-Bind® Bacterial DNA Kit will isolate all cellular DNA, including plasmid DNA.

Overview

If using the Mag-Bind® Bacterial DNA 96 Kit for the first time, please read this booklet to become familiar with the procedures. After bacterial cells are collected from culture or picked from an agar plate, the bacterial cell wall is removed by two digestion steps: first with lysozyme followed by proteinase k. After lysis, binding conditions are adjusted and the sample is mixed with Mag-Bind® Particles CH to bind the DNA. Two rapid wash steps remove trace salts and protein contaminants and DNA is eluted in water or low ionic strength buffer. Purified DNA can be used directly in downstream applications without the need for further purification.

Important:

1. 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.

2. Kits include enough reagents for the specified number of preparations plus 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. Additional reagents are available for purchase separately. Please visit the product page at www.omegabiotek.com or contact your Omega Bio-tek representative for more details and ordering information.

Kit Contents

Product	M2350-00	M2350-01
Purifications	1 x 96 preps	4 x 96 preps
Mag-Bind® Particles CH	1.1 mL	4.2 mL
MB1 Buffer	25 mL	100 mL
DS Buffer	3 mL	12 mL
MSL Buffer	25 mL	100 mL
SPM Buffer	30 mL	2 x 75 mL
Elution Buffer	30 mL	125 mL
Lysozyme	120 mg	480 mg
Proteinase K Solution	2.5 mL	10 mL
RNase A	550 µL	2.2 mL
User Manual	✓	✓

Storage and Stability

All components of the Mag-Bind® Bacterial DNA 96 Kit are guaranteed for at least 12 months from the date of purchase when stored as follows. Store the Mag-Bind® Particles CH and RNase A at 2-8°C. Proteinase K Solution can be stored at room temperature for up to 12 months. For long-term storage (>12 months), store at 2-8°C. Once reconstituted, lysozyme must be stored at -20°C. Under cool ambient conditions, a precipitate may form in the MSL Buffer or DS Buffer. In case of such an event, heat the bottle at 37°C to dissolve.

Preparing Reagents

1. Prepare a stock solution of Lysozyme (50 mg/mL) as follows and aliquot. Store each aliquot at -20°C and thaw before use.

Kit	Elution Buffer to be Added
M2350-00	2.4 mL
M2350-01	9.6 mL

2. Dilute SPM Buffer with 100% ethanol as follows:

Kit	100% Ethanol to be Added
M2350-00	70 mL
M2350-01	175 mL per bottle

Warnings

This kit is for research use only.

Please read all instructions carefully before using the kit.

Decontaminate and dispose of all potentially infectious materials in accordance with applicable local, state, and national regulations. Please refer to safety data sheets (SDSs) for information on disposal of different components included in this kit.

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. Conduct all work in properly equipped facilities following universal precautions and using appropriate personal safety equipment such as disposable gloves, lab coats, safety glasses etc. as required by policies and procedures outlined by your facility. 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, clean-up, and disposal of different components 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.

Some of the buffers included in the product 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 waste. Please access the SDSs online for detailed information on the reagents.

Where allowed, packaging for non-hazardous buffers, kit boxes, or other packaging materials may be recycled in accordance with local regulations. Reference product labelling or www.omegabiotek.com for guidance.

Mag-Bind® Bacterial DNA 96 Kit Protocol - DNA from Culture or Agar Plates

Materials and Reagents to be Supplied by User:

- Centrifuge with rotor and adaptor for microplates
- Magnetic separation device compatible with plates used
- 1.2 or 2 mL deep-well plates
- Vortexer and sealing films
- 100% ethanol
- Multi-channel pipettor and tips
- Shaking water bath, incubator, or heat block capable of 37°C and 60°C
- Optional: Lysostaphin (1 mg/mL)

Before Starting:

- Prepare SPM Buffer according to the Preparing Reagents Section on Page 4
- Prepare Lysozyme stock solutions according to the Preparing Reagents Section on Page 4
- Set incubator or heat block to 37°C
- Set incubator or heat block to 60°C

1. Preparing Cells

- Cells from Culture:

    1. Transfer 0.5 mL bacterial culture into each well of a 1.2 or 2 mL deep-well plate.

    2. Centrifuge at 4,000 x *g* at room temperature for 10 minutes.

    3. Carefully aspirate and discard the media without disturbing the cell pellet.

    4. Proceed to Step 2.

- Cells from an Agar Plate

    1. Add 90 µL MB1 Buffer and 10 µL Lysozyme into each well of the sample plate.

    2. Add one colony into each well and mix thoroughly.

    3. Proceed to Step 3.

Note: If you choose to vortex the samples in during the protocol below, make sure to seal the plate completely to avoid any loss of sample or cross-contamination.

2. Add 90 µL MB1 Buffer and 10 µL Lysozyme. Mix the sample thoroughly by pipetting up and down 20 times. Make sure the cells are fully resuspended.

   Note: For some species of staphylococci, add 1-2 µL lysostaphin (1 mg/mL). Lysostaphin is not supplied.

3. Incubate at 37°C for 10 minutes. Mix the plate 1-2 times during incubation by vortexing or pipetting up and down 20 times.

   Note: The amount of enzyme required and/or the incubation time may need to be modified depending on the bacterial strain used. Complete digestion of the cell wall is essential for efficient lysis. Longer incubation time might yield better results.

4. Add 12 µL DS Buffer and 20 µL Proteinase K Solution. Mix thoroughly by vortexing or pipetting up and down 20 times.

5. Incubate at 60°C in a shaking water bath for 20 minutes for gram-negative bacteria, or 40-60 minutes for gram-positive bacteria.

   Note: Usually no more than 1 hour is needed for bacterial lysis. If a shaking water bath is not available, incubate and shake plate every 20-30 minutes.

6. Add 5 µL RNase A. Mix thoroughly by vortexing or pipetting up and down 20 times.

7. Let sit at room temperature for 5 minutes.

8. Add 135 µL MSL Buffer and 10 µL Mag-Bind® Particles CH. Mix thoroughly by vortexing or pipetting up and down 20 times.

9. Add 182 µL 100% ethanol. Mix thoroughly by vortexing or pipetting up and down 20 times.

10. Let sit at room temperature for 5 minutes.

11. Place the plate on a magnetic separation device to magnetize the Mag-Bind® Particles CH. Let sit for 10-15 minutes.

12. Aspirate and discard the supernatant. Do not disturb the Mag-Bind® Particles CH.

13. Remove the plate from the magnetic separation device.

14. Add 400 µL SPM Buffer.

    Note: SPM Buffer must be diluted with 100% ethanol prior to use. Please see Page 4 for instructions.

15. Resuspend the Mag-Bind® Particles CH by vortexing or pipetting up and down 20 times. Incubate for 3 minutes at room temperature. Mix by vortexing or pipetting a few times during incubation.

    Note: Complete resuspension is required for adequate washing of the Mag-Bind® Particles CH.

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

17. Aspirate and discard the supernatant. Do not disturb the Mag-Bind® Particles CH.

18. Repeat Steps 13-17 for a second SPM Buffer wash step.

19. Leave the plate on the magnetic separation device for 5-10 minutes to air dry the Mag-Bind® Particles CH. Remove any residual liquid with a pipettor.

20. Remove the plate from the magnetic separation device.

21. Add 200 µL Elution Buffer. Resuspend the Mag-Bind® Particles CH by pipetting up and down 50 times or vortexing for 3 minutes.

22. Let sit at room temperature for 5-10 minutes.

    Note: Incubation at 60°C rather than at room temperature will give a modest increase in DNA yield per elution.

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

24. Transfer the cleared supernatant containing purified DNA to a clean plate. Store the DNA at -20°C.

Mag-Bind® Bacterial DNA 96 Kit Protocol - DNA from Viscous or Mucous Samples

Materials and Reagents to be Supplied by User:

- Magnetic separation device compatible with plates used
- 1.2 or 2 mL deep-well plates
- Vortexer and sealing films
- 100% ethanol
- Multi-channel pipettor and tips
- Shaking water bath, incubator, or heat block capable of 37°C and 60°C
- DTT

Before Starting:

- Prepare SPM Buffer according to the Preparing Reagents Section on Page 4
- Prepare Lysozyme stock solutions according to the Preparing Reagents Section on Page 4
- Prepare fresh 0.15% DTT (w/v) solution in MB1 Buffer just prior to DNA extraction
- Set incubator or heat block to 37°C
- Set incubator or heat block to 60°C

Note: If you choose to vortex the samples in during the protocol below, make sure to seal the plate completely to avoid any loss of sample or cross-contamination.

1. Add 200 µL of sample into a 96-well deep-well plate (1.2 or 2 mL).

2. Add 200 µL MB1 Buffer with freshly prepared DTT solution. Incubate at 37°C until the sample can be pipetted.

3. Transfer 200 µL sample into a new deep-well plate.

4. Add 20 µL Lysozyme to each sample.

5. Incubate at 37°C for 10 minutes.

6. Add 25 µL DS Buffer and 20 µL Proteinase K Solution. Mix thoroughly by vortexing or pipetting up and down 20 times.

7. Incubate at 60°C in a shaking water bath for 20 minutes for gram-negative bacteria, or 40-60 minutes for gram-positive bacteria.

   Note: Usually no more than 1 hour is needed for bacterial lysis. If a shaking water bath is not available, incubate and shake plate every 20-30 minutes.

8. Add 5 µL RNase A. Mix thoroughly by vortexing or pipetting up and down 20 times.

9. Let sit at room temperature for 5 minutes.

10. Add 245 µL MSL Buffer and 10 µL Mag-Bind® Particles CH. Mix thoroughly by vortexing or pipetting up and down 20 times.

11. Add 330 µL 100% ethanol. Mix thoroughly by vortexing or pipetting up and down 20 times.

12. Transfer half of the sample volume into a round-bottom 96-well plate.

13. Place the plate on a magnetic separation device to magnetize the Mag-Bind® Particles CH. Let sit for 10-15 minutes.

14. Aspirate and discard the supernatant. Do not disturb the Mag-Bind® Particles CH.

15. Repeat Steps 12-14 until all of the Mag-Bind® Particles CH from the samples are collected.

16. Remove the plate from the magnetic separation device.

17. Add 400 µL SPM Buffer.

    Note: SPM Buffer must be diluted with 100% ethanol prior to use. Please see Page 4 for instructions.

18. Resuspend the Mag-Bind® Particles CH by vortexing or pipetting up and down 20 times.

    Note: Complete resuspension is required for adequate washing of the Mag-Bind® Particles CH.

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

20. Aspirate and discard the supernatant. Do not disturb the Mag-Bind® Particles CH.

21. Repeat Steps 16-20 for a second SPM Buffer wash step.

22. Leave the plate on the magnetic separation device for 5-10 minutes to air dry the Mag-Bind® Particles CH. Remove any residual liquid with a pipettor.

23. Remove the plate from the magnetic separation device.

24. Add 200 µL Elution Buffer. Resuspend the Mag-Bind® Particles CH by pipetting up and down 50 times or vortexing for 3 minutes.

25. Let sit at room temperature for 5-10 minutes.

    Note: Incubation at 60°C rather than at room temperature will give a modest increase in DNA yield per elution.

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

27. Transfer the cleared supernatant containing purified DNA to a clean plate. Store the DNA at -20°C.

Troubleshooting Guide

Please use this guide to troubleshoot any problems that may arise. For further assistance, please contact the technical support staff, toll free, at **1-800-832-8896**.

Problem	Cause	Solution
Low DNA yields	Incomplete resuspension of Mag-Bind® Particles CH	Resuspend the Mag-Bind® Particles CH by vortexing before use
	Inefficient cell lysis	• Increase the Lysozyme incubation time • Increase the Proteinase K digestion time
	SPM Buffer is not prepared correctly	Prepare the SPM Buffer by adding 100% ethanol according to the instructions
	Loss of Mag-Bind® Particles CH during operation	Do not aspirate the Mag-Bind® Particles CH during pipetting
No DNA eluted	SPM Buffer not diluted with ethanol	Prepare the SPM Buffer by adding ethanol according to the instructions
Problem with downstream applications	Ethanol carry over	Make sure to remove all SPM Buffer during the Mag-Bind® Particles CH drying step

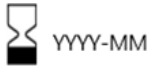
Contact Information

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.
	Website
	Telephone
	Fax
	Email
	LinkedIn
	X
	Facebook
	Recycling Guidance at https://omegabiotek.com/company/recycling

Document Revision History

Revision	Description
August 2026, v6.0	Removed urine, body fluid, and secretion swab protocols from the manual due to redundancy with existing procedures.
October 2025, v5.0	The MSL Buffer has undergone a formulation change, with no alteration to product name or overall functional performance of the Kit.
March 2019, v4.0	SPM Wash Buffer has been renamed SPM Buffer. This is a name change only. The formulation has not changed.
September 2017, v3.1	MB2 Buffer has been replaced with DS Buffer. This is a name change only. The formulation has not changed.
August 2015, v3.0	Mag-Bind® Particles CND has been renamed as Mag-Bind® Particles CH. This is a name change only. The formulation has not changed.
April 2012, v2.0	Proteinase K is now supplied in a liquid form eliminating the step to respuspend prior to use. Proteinase Storage Buffer is no longer included in the kit.

Notices and Disclaimers

Trademarks and Licenses

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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:

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

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