MAGBIO

"WE MAKE NGS BETTER"

Biozym

SCIENCE IS OUR BUSINESS

MagBio CTL Medium ™

Catalog Nos. MCTL-M30, MCTL-M1000, MCTL-M4000

Manual Revision 1

- All in ONE: Collect, Transport/Lyse and Stabilize nucleic acids from pathogens including viruses and fungi

User Guide

Contents

For Research Use Only. Not for use in diagnostic procedures.

Information in this document is subject to change without notice.

Product Description

MagBio CTL Medium™ is a proprietary stabilization/lysis buffer that allows viruses including SARS-CoV2; and other pathogen samples to be collected, lysed, and transported at Ambient temperature while ensuring stability of pathogen RNA & DNA. The stabilized RNA/DNA is then captured by paramagnetic beads and can be used for downstream applications such as PCR, qPCR etc.

MagBio CTL Medium™ can be adapted to automated magnetic bead purification instruments and workstations. Also, it offers the following:

- It is All-in-ONE (sample collection, stabilization, storage, and sample lysis).
- No need for cold-chain storage: DNA/RNA is stabilized at ambient temperature for up to 10 days.
- DNA/ RNA can be captured directly from the MagBio CTL Medium™ using paramagnetic beads- no need to buy an extraction kit.

MagBio CTL Medium™ is an alternative to Hologic's STM (Specimen Transport Medium). It is a non-Guanidine based lysis/stabilization buffer optimized for use with KingFisher Flex system for RNA/DNA capture of nucleic acids from respiratory samples (swab eluates) and urinary pathogens (Candida and bacterial pathogens).

Product Specifications

Product Number	Description	Volume	Storage Conditions
MCTL-M30 (Sample size)	MagBio CTL Medium™- 30 mL	30 mL	15-25°C
MCTL-M1000	MagBio CTL Medium™- 1000 mL	1000 mL (1 Liter Bottle)	
MCTL-M4000	MagBio CTL Medium™- 4000 mL	4000 mL (4 x 1 Liter Bottles)	

How to Use MagBio CTL Medium™

1. As Transport Medium for Oral and Nasal/Naso-pharyngeal Swabs

• Aliquot 1.2 ml of bulk MagBio CTL Medium™ into an appropriate sterile transport tube. Transport tubes should always be stored at 15 – 25°C . Take the swab out of the package and swab deep into the oral or nasal cavity. Insert the swab into the transport tube containing CTL medium and transport to the laboratory (The swab eluate in MagBio CTL Medium™ can be stored at room temperature for 6 days, for long term storage freeze the sample at -80°C). The frozen swab eluate can undergo freeze thawing 3 times. (At this point, RNA/DNA is already lyzed from the microbial cells and is stabilized by CTL medium).

2. As Transport Medium for Urine Specimen

• Aliquot 1.2 ml of bulk MagBio CTL Medium™ into an appropriate sterile transport tube. Transport tubes should always be stored at 15 – 25°C . To 1.2 ml of CTL medium, add 900 µl of urine sample for urinary pathogens' DNA/RNA stabilization. (At this point, urinary pathogen's RNA/DNA is already lyzed from the pathogen's cell and is stabilized by CTL medium).

How to Capture Nucleic Acids from MagBio CTL Medium™

Equipment and Reagents to Be Supplied by User

Description	Company	Product ID
Reagents		
Paramagnetic Beads (MAG-S2 Particles) - 10 mL	MagBio Genomics, Inc.	MGS-10
Paramagnetic Beads (MAG-S2 Particles) - 40 mL	MagBio Genomics, Inc.	MGS-40
100% Isopropanol	–	–
80% (non-denatured) Ethanol	–	–
Magnetic Device Options		
96 well magnetic beads separation device. MyMag™ 96X (for 96 well plate)	MagBio Genomics, Inc.	MYMAG-96X
MagStrip Magnet Stand (for 1.5/1.7ml microcentrifuge tubes)	MagBio Genomics, Inc.	MBMS-12
Consumables		
KingFisher™ Compatible 96 x Tip Comb for DW Magnets	MagBio Genomics, Inc.	NRS-KFC96
KingFisher™ Compatible 96 x Deep Well Plate	MagBio Genomics, Inc.	NRS-DW96

Protocol: Viral Nucleic Acid Capture - Oral and Nasal Samples

1. Add 290 µl of MagBio CTL Medium™ to 200 µl of viral sample. Pipette mix 15 times.

2. Incbate for 10 min. at 37°C.

3. Take 200 µl of the viral sample from step 1 and add 300 µl of 100% Isopropanol, and 10 µl of MAG-S2 Particles. Pipette mix 15 times.

   ⚠ *Shake well to resuspend the MAG-S2 Particles before use.*

4. Let the samples sit at room temperature for 5 min. Vortex once briefly during incubation.

5. Place the sample plate on the magnetic separation device for 3 min or more to magnetize the MAG-S2 Particles (timing depends on the strength of the magnet).

6. With the plate on the magnetic separation device, remove and discard the supernatant by pipetting.

   ⚠ *Do not disturb the attracted beads while aspirating the supernatant. Make sure that the magnetic beads are clear from solution before pipetting out the supernatant.*

7. Remove the plate from the magnetic separation device.

8. Add 500 µl of 80% Ethanol to each sample and pipette mix 15 times to resuspend the MAG-S2 Particles.

9. Place the sample plate back on the magnetic separation device and wait for 3 min or until the magnetic beads clear from solution.

10. With the plate on the magnetic separation device, remove and discard the supernatant.

    ⚠ *Do not disturb the attracted beads while aspirating the supernatant.*

11. Remove the plate from the magnetic separation device.

12. Repeat steps 8 - 11 for a second wash.

    ⚠ *Complete resuspension of the MAG-S2 Particles is crucial for obtaining quality DNA or RNA.*

13. Dry the beads by incubating for 5 min at room temperature with the plate still on the magnetic separation device.

    ⚠ *It is critical to completely remove any residual liquid from each well.*

14. Remove the plate from the magnetic separation device. Add 30-100 µl of nuclease free water and pipette mix 25 times to completely resuspend the MAG-S2 Particles. Heat the sample at 60-65°C to for 5 minutes.

15. Place the sample plate back on the magnetic separation device and wait for 3 min or until the magnetic beads clear from solution.

16. Transfer the eluate (cleared supernatant containing the DNA or RNA) to a new microplate/tube for storage. Store DNA at -20°C and RNA at -80°C.

Protocol: Urinary Pathogens Nucleic Acid Capture - Urine Samples

1. Add 290 µl of MagBio CTL Medium™ to 200 µl of pathogen sample. Pipette mix 15 times.

2. Incubate for 10 min. at 37°C.

3. Take 400 µl of the pathogen sample from step 1 and add 500 µl of 100% Isopropanol, and 10 µl of MAG-S2 Particles. Pipette mix 15 times.

   ⚠ *Shake well to resuspend the MAG-S2 Particles before use.*

4. Let the samples sit at room temperature for 5 min. Vortex once briefly during incubation.

5. Place the sample plate on the magnetic separation device for 3 min or more to magnetize the MAG-S2 Particles (timing depends on the strength of the magnet).

6. With the plate on the magnetic separation device, remove and discard the supernatant by pipetting.

   ⚠ *Do not disturb the attracted beads while aspirating the supernatant. Make sure that the magnetic beads are clear from solution before pipetting out the supernatant.*

7. Remove the plate from the magnetic separation device.

8. Add 500 µl of 80% Ethanol to each sample and pipette mix 15 times to resuspend the MAG-S2 Particles.

9. Place the sample plate back on the magnetic separation device and wait for 3 min or until the magnetic beads clear from solution.

10. With the plate on the magnetic separation device, remove and discard the supernatant.

    ⚠ *Do not disturb the attracted beads while aspirating the supernatant.*

11. Remove the plate from the magnetic separation device.

12. Repeat steps 8 - 11 for a second wash.

    ⚠ *Complete resuspension of the MAG-S2 Particles is crucial for obtaining quality DNA or RNA.*

13. Dry the beads by incubating for 5 min at room temperature with the plate still on the magnetic separation device.

    ⚠ *It is critical to completely remove any residual liquid from each well.*

14. Remove the plate from the magnetic separation device. Add 30-100 µl nuclease free water and pipette mix 25 times to completely resuspend the MAG-S2 magnetic particles. Heat the sample at 60-65°C to for 5 minutes.

15. Place the sample plate back on the magnetic separation device and wait for 3 min or until the magnetic beads clear from solution.

16. Transfer the eluate (cleared supernatant containing the DNA) to a new microplate/tube for storage. Store DNA at -20°C and RNA at -80°C.

Ordering and Related Product Information

Stabilization/Lysis buffer for pathogens including viruses

Catalog No.	Product	Description
MCTL-M30	MagBio CTL Medium™ - 30 mL sample	Proprietary stabilization/lysis buffer that allows viruses including SARS-CoV2; and other pathogen samples to be collected, lysed, and transported at Ambient temperature while ensuring stability of pathogen RNA & DNA.
MCTL-M1000	MagBio CTL Medium™ - 1000 mL	
MCTL-M4000	MagBio CTL Medium™ - 4000 mL	

Paramagnetic beads for DNA/RNA capture

Catalog No.	Product	Description
MGS-10	MAG-S2 Particles - 10 mL	MagBio MAG-S2 paramagnetic bead particles (10 mL volume)
MGS-40	MAG-S2 Particles - 40 mL	MagBio MAG-S2 paramagnetic bead particles (40 mL volume)

Magnetic Separation Devices

Catalog No.	Description
MYMAG-96	Handheld Magnetic Separation Device (96 well microplate format)
MYMAG-96X	Magnetic Separation Device (96 well ring format)
MBMS-12	MagStrip magnetic stand (1.5 mL x 12)

MAGBIO

"WE MAKE NGS BETTER"

www.magbiogenomics.com

Biozym

SCIENCE IS OUR BUSINESS

www.biozym.com

Biozym Scientific GmbH
Tel.: 05152 / 9020, Fax: 05152 / 2070
Mail: support@biozym.com

Biozym Biotech Trading GmbH
Tel.: 01 / 334 0156 0, Fax: 01 / 334 0156 88
Mail: support@biozym.com

www.magbiogenomics.com