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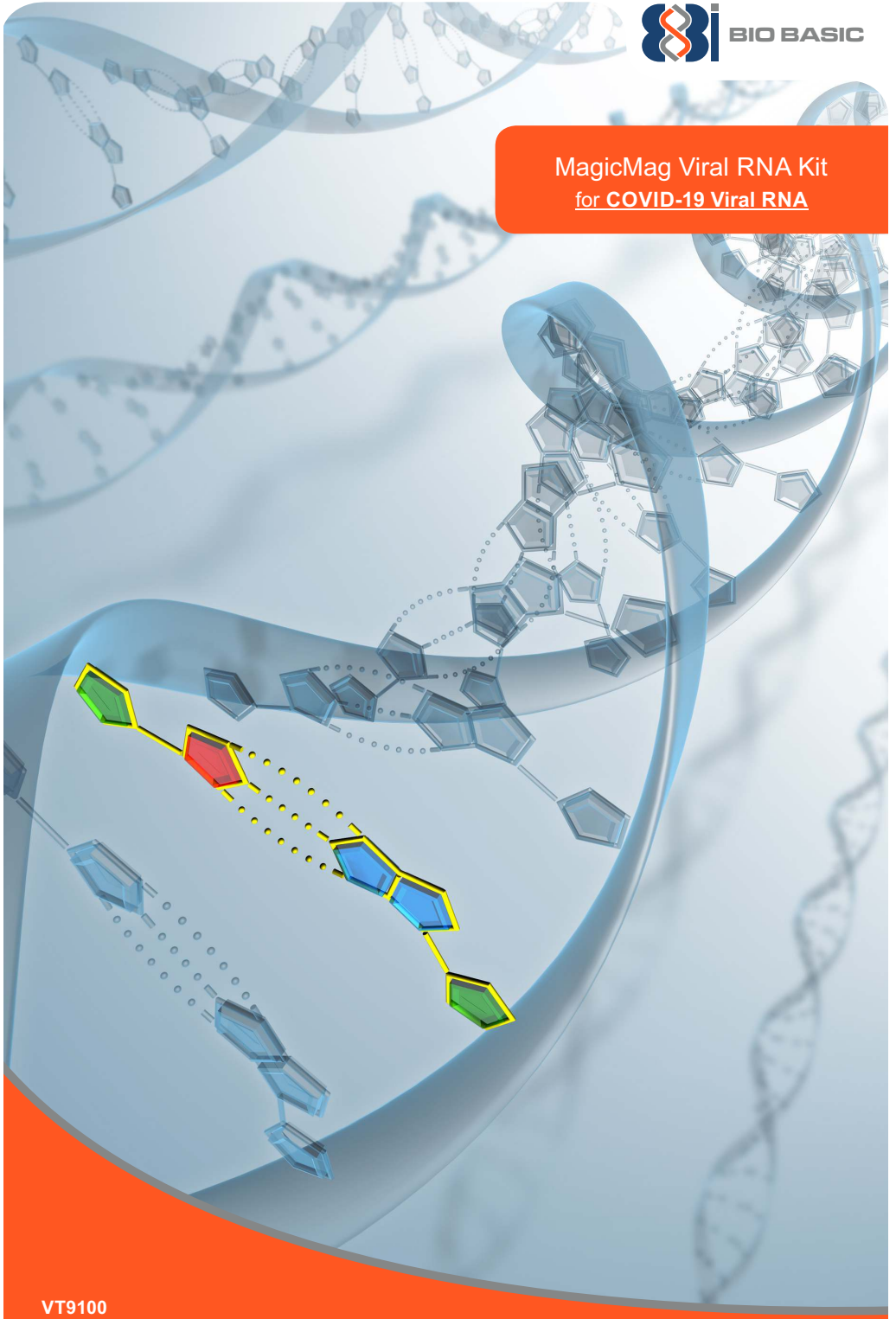
MagicMag Viral RNA Kit
for **COVID-19 Viral RNA**



VT9100
QF 24 V4
CV4 2020

For Research Use Only

MagicMag Viral RNA Kit

(Especially Designed for COVID-19 Viral RNA)

Catalog #: VT9100 ***Size: 100 Preps***

Component	Volume
Buffer Rlysis-VG	70 ml
Buffer MB	40 ml
Universal RPE Solution*	15 ml
Nuclease-free Water**	7 ml
Carrier RNA**	1 mg
MagicMag Beads	3 ml
Protocol	1

***:** Universal RPE Solution is supplied in a concentrated form. Before use, add 60ml 96-100% ethanol to 15ml concentrated universal RPE solution and mix well.

****:** Add Nuclease-free Water to the tube containing lyophilized Carrier RNA to obtain a solution of 1 µg/µL. Dissolve the carrier RNA thoroughly, divide it into conveniently sized aliquots, and store it at -20°C. Do not freeze-thaw the aliquots of Carrier RNA more than 3 times.

Introduction

The kit is simplifies isolation of viral RNA from cell-free body fluids using a fast spin-column format. No phenol/ chloroform extraction is required. Viral RNA binds specifically while contaminants are removed in the flow-through. PCR inhibitors such as divalent cations and proteins are completely removed in two efficient wash steps, leaving pure viral RNA to be eluted in RNase-free Water. Purified RNA is ready to use in RT-PCR, Northern blotting, or other downstream applications.

Features

- **Fast:** Entire procedure takes about 30 minutes.
- **HighThroughput:** Allows rapid extraction of 100 samples within 30 minutes
- **High Yield:** The recovery yield of viral RNA is >85%
- **Versatile:** Suitable for purification of viral RNA from a wide range of specimens, including serum, plasma, cell culture media, and milk.
- **Non-toxic:** No phenol/ chloroform are used.

Other Reagents and Kits Available:

1. **401.SIZE.5mL**: Proteinase K, 20mg/mL
2. **COV-2-RTPCR**: SARS-CoV-2 RT-PCR Detection Kit (50 Rxns)
3. **GDR0244-MBG**: Guanidine thiocyanate, DNase, RNase, Protease Free, 1kg
4. **VT81812**: EZ-10 Spin Column Viral DNA Miniprep Kit
5. COVID-19 Primers and Probes (CDC)

22. Resuspend the MagicMag Beads Particles by shaking for 2 minutes.

23. Let sit at room temperature for 10 minutes.

24. Place the plate or microcentrifuge on the magnetic separation device to magnetize the MagicMag Beads Particles. Let sit at room temperature until the MagicMag Beads Particles are completely cleared from solution.

25. Transfer the cleared supernatant containing purified DNA/RNA to a clean plate or microcentrifuge. Store at -70°C

    Note: Avoid transferring the beads into the final tube. If this occurs, repeat step 9.

Storage

All of the kit components are guaranteed for at least 12 months from the date of purchase when stored as follows. **MagicMag** Beads must be stored at 2-8°C. Carrier RNA should be divided into conveniently sized aliquots and stored it at –20°C. Do not freeze–thaw the aliquots of Carrier RNA more than 3 times. All remaining components should be stored at room temperature.

During shipment or storage in cool ambient conditions, precipitates may form **Rlysis-VG** Buffer. Dissolve such deposits by warming the solution at 37°C and gently shaking.

Materials Supplied by User

- Microcentrifuge capable of at least 12,000 × g
- Pipettes and pipette tips
- Vortexer
- Ethanol (75%)
- Microcentrifuge tubes (1.5 ml or 2 ml)
- Water bath for heating at 65°C
- Magnetic separation device
  - MAD-01 (96-well magnetic separation device)
  - MAD-02 (micro-centrifuge magnetic separation device)

Before Starting

Check the Buffer Rlysis-VG and Buffer MB for salt precipitation before each use. If necessary, re-dissolve the precipitate by warming the solution at 65°C before use. Preheat the water bath or rocking platform to 65°C.

Protocol

1. Freshly prepare the following Lysis Mastermix:

Component	Volume per reaction	Volume per 100 reactions
Carrier RNA	2 µl	200 µl
Buffer Rlysis-VG	600 µl	60 ml

2. Mix thoroughly by vortexing. Transfer 600 µL lysis mastermix to each well of a 96-well microplate or a microcentrifuge tube.

3. Sample preparation

A. Nasopharylngeal swabs(Dry)

i) Add 300 µl of PBS (user supplied) and 10ul of proteinase K solution (20mg/mL) (user supplied, *Bio Basic cat. #401*) to each swab sample.
ii) Incubate at 56°C for 10-20 minutes with occasional mixing
iii) Centrifuge at 10,000 X g (or maximum speed) for 30 seconds
iv) Use 200 µl from step 3 as sample and proceed with step 4 in this protocol.

B. Nasopharylngeal swabs, Nasopharylngeal aspirates and brohonchoalveolar lavage samples in transport medium/ Viral transport medium (VTM)

i) Vortex the tubes containing the swab at maximum speed for 1 minute.
ii) Use 200 µl from step 3 as sample and proceed with step 4 in this protocol.

4. Add 200 µL sample into each well containing Lysis+Carrier RNA mixture (step 2). Mix by shaking the plate for 1 minute or pipetting up and down.

5. Add 400µl Buffer MB and 30 µL MagicMag Beads Particles . Mix by shaking 96-well plate for 5 minutes or vortex the microcentrifuge tube for 10 sec every 2 min.

Note: *The magnetic beads tend to settle to the bottom, it is very important to resuspend the magnetic beads thoroughly before use.*

6. Place the plate or microcentrifuge on a magnetic separation device to magnetize the MagicMag Beads Particles. Let sit for 10-15 minutes

7. Aspirate and discard the supernatant. Do not disturb the MagicMag Beads Particles.

8. Remove the plate or microcentrifuge tube from the magnetic separation device.

9. Add 700 µL RPE Buffer to each well.

Note: *RPE Solution is supplied in a concentrated form. Before use, make sure ethanol has been added. See instructions in manual (page 1).**

10. Resuspend the MagicMag Beads Particles by shaking for 1 minute.

Note: *Complete resuspension is required for adequate washing of the MagicMag Beads Particles.*

11. Place the plate or microcentrigue tube on the magnetic separation device to magnetize the MagicMag Beads Particles. Let sit at room temperature until the MagicMag Beads Particles are completely cleared from solution.

12. Aspirate and discard the supernatant. Do not disturb the MagicMag Beads Particles.

13. Remove the plate or microcentrifuge from the magnetic separation device.

14. Add 700 µl 75% of ethanol to each well.

15. Resuspend the MagicMag Beads Particles by shaking for 1 minute.

16. Place the plate or microcentrigue tube on the magnetic separation device to magnetize the MagicMag Beads Particles. Let sit at room temperature until the MagicMag Beads Particles are completely cleared from solution.

17. Aspirate and discard the supernatant. Do not disturb the MagicMag Beads Particles.

18. Repeat Steps 12-16 for a second 700 µl 75% of ethanol wash step.

19. Leave the plate or microcentrifuge on the magnetic separation device for 10 minutes to air dry the MagicMag Beads Particles. Remove any residual liquid with a pipettor.

20. Remove the plate or microcentrifuge from the magnetic separation device

21. Add 35-60 µL Nuclease-free Water to each well.

Note: Elution volume depends on plasticware and magnetic separation device used. The MagicMag Beads Particles must be able to completely covered by the Nucleasefree Water