MAGBIO

Liquid Biopsy Research - “We are where you start”

HighPrep™ Viral DNA/RNA

Manual Revision v3.00
Catalog Nos. HPV-DR10, HPV-DR96, HPV-DR96X4

- Total nucleic acid from whole blood serum, plasma saliva and other body fluids
- Magnetic beads based chemistry

Contents

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

Information in this document is subject to change without notice.

Product Description

The HighPrep™ Viral DNA/RNA kit is designed for rapid and reliable isolation of total nucleic acid from whole blood, serum, plasma, saliva and other bodily fluids. High quality DNA is suitable for direct use in most downstream applications such as amplifications and enzymatic reactions. The kit can be adapted to most major liquid handling workstations in the market.

Process

Samples are lysed in a specially formulated buffer containing detergent. Nucleic acid is bound to the surface of MAG-S1 particles under proper condition. Proteins and cellular debris are efficiently washed with few wash steps. Pure RNA and DNA are then eluted in nuclease-free water or low ionic strength buffer. Purified RNA or DNA can be directly used in downstream applications without the need for further purification.

Kit Contents and Storage

HighPrep™ Viral DNA/RNA Kit Catalog No.	**HPV-DR10**	**HPV-DR96**	**HPV-DR96X4**	**STORAGE**
Number of Preps	10 preps	96	384	
VDR Lysis Buffer	3ml	30 ml	110 ml	15-25°C
HSW Buffer[1]	2.2ml	22 ml	88 ml	15-25°C
Nuclease-Free Water	3ml	35 ml	150 ml	15-25°C
Pro K Solution[2]	110µl	1.1 ml	4.4 ml	2-8°C
Carrier RNA	100µg	1 mg	4 x 1 mg	-20°C
HighPrep™ MAG-S1 Particles	110µl	1.1 ml	4.4 ml	2-8°C

[1]Ethanol must be added prior to use. See Preparation of Reagents

Stability

All components are stable for 12 months when stored accordingly.
[2] Pro K Solution comes in a ready to use solution. Component is stable for 1 year when stored at 15-25°C. For storage longer than 1 year, store at 2-8°C is recommended.

Safety Information

When working with chemicals, always wear a suitable lab coat, disposable gloves, and protective goggles. For more information, please consult the appropriate material safety data sheets (MSDSs). MSDS can be downloaded from the "Product Resource" tab when viewing the product kit.

Preparation of Reagents

Prepare the following components for each kit before use:

Catalog No.	Component	Add 100% Isopropanol	Add 100% Ethanol	Storage
HPV-DR10	HSW Buffer	- - -	2.8 ml	Room Temp 15-25°C
Components are stable for 1 year when stored accordingly.				

Catalog No.	Component	Add 100% Isopropanol	Add 100% Ethanol	Storage
HPV-DR96	HSW Buffer	- - -	28 ml	Room Temp 15-25°C
Components are stable for 1 year when stored accordingly.				

Catalog No.	Component	Add 100% Isopropanol	Add 100% Ethanol	Storage
HPV-DR96X4	HSW Buffer	- - -	112 ml	Room Temp 15-25°C
Components are stable for 1 year when stored accordingly.				

Viral DNA/RNA - 50 µl sample volume (96 well format)

Equipment and Reagents to Be Supplied by User

When working with chemicals, always wear a suitable lab coat, disposable gloves, and protective goggles. For more information, please consult the appropriate material safety data sheets (MSDSs) from each product supplier.

- ☐ Ethanol (70%)
- ☐ Isopropanol
- ☐ Magnetic separation device for 96-well plate
- ☐ 96-well microplates (U or V bottom)

Things to do before starting

- ☐ Prepare all reagents accordingly according to the instructions on page 2.

Protocol

1. **Prepare lysis mastermix.**

Buffer	Per sample
VDR Lysis Buffer	60 µl
Carrier RNA	2 µl
Isopropanol	70 µl

2. **Transfer 132 µl lysis mastermix to each sample well.**

3. **Add 50 µl plasma or serum to each sample well. Pipette mix 15 times.** If sample is frozen, allow to thaw to room temperature.
   Note: If sample is less than 50 µl, bring volume up to 50 µl with nuclease-free water.

4. **Add 5 µl MAG-S1 particles and 5 µl Pro K Solution to each well. Pipette mix 15 times.**
   ⚠ Shake well to resuspend the HighPrep™ MAG-S1 particles before use.

5. **Place the sample plate on the magnetic separation device for 10 min to magnetize the HighPrep™ MAG-S1 particles.**

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.

7. **Remove the plate from the magnetic separation device.**

8. **Add 200 µl HSW Buffer to each sample and pipette mix 15 times to resuspend the HighPrep™ MAG-S1 particles.**

9. **Place the sample plate back on the magnetic separation device and wait 5 min or until the magnetic beads clear from solution.**

10. **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.

11. **Remove the plate from the magnetic separation device.**

12. **Add 200 µl 70% ethanol to the sample and pipette mix 15 times to resuspend the MAG-S1 particles.**
    ⚠ Complete resuspension of the MAG-S1 particles is crucial for obtaining purity.

13. **Place the sample plate back on the magnetic separation device and wait 5 min or until the magnetic beads clear from solution.**

14. **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.

15. **Repeat steps 11-14 for a second wash.**

16. **Dry the beads by incubating for 7 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.

17. **Remove the plate from the magnetic separation device. Add 20-50 µl nuclease free water to each well and pipette mix 25 times to complete resuspend the MAG-S1 magnetic particles.** ⚠ Complete resuspension of the MAG-S1 particles is crucial for obtaining purity.

18. **Incubate at room temperature for 10 min.**

19. **Place the sample plate back on the magnetic separation device and wait 5 min or until the magnetic beads clear from solution.**

20. **Transfer the eluate (cleared supernatant containing the DNA) to a new microplate for storage. Store DNA at -20°C.**

Viral DNA/RNA - 200 µl sample volume (96 well format)

Equipment and Reagents to Be Supplied by User

When working with chemicals, always wear a suitable lab coat, disposable gloves, and protective goggles. For more information, please consult the appropriate material safety data sheets (MSDSs) from each product supplier.

- ☐ Ethanol (70%)
- ☐ Isopropanol
- ☐ Magnetic separation device for 96-well plate
- ☐ 96-well microplates (U or V bottom)

Things to do before starting

- ☐ Prepare all reagents accordingly according to the instructions on page 2.

Protocol

1. **Prepare lysis mastermix.**

Buffer	Per sample volume
VDR Lysis Buffer	240 µl
Carrier RNA	8 µl
Isopropanol	280 µl

2. **Transfer 528 µl lysis mastermix to each sample well.**

3. **Add 200 µl plasma or serum to each sample well. Mix by vortexing for 1 min or pipette mix 15-20 times. If sample is frozen, allow to thaw to room temperature.**
   Note: If sample is less than 200 µl, bring volume up to 200 µl with nuclease-free water.

4. **Add 10 µl MAG-S1 particles and 10 µl Pro K Solution to each well. Mix by shaking for 5 min.** ⚠ Shake well to resuspend the HighPrep™ MAG-S1 particles before use.

5. **Place the sample plate on the magnetic separation device for 10 min to magnetize the HighPrep™ MAG-S1 particles.**

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.

7. **Remove the plate from the magnetic separation device.**

8. **Add 400 µl HSW Buffer to each sample and pipette mix 15 times to resuspend the HighPrep™ MAG-S1 particles.**

9. **Place the sample plate back on the magnetic separation device and wait 5 min or until the magnetic beads clear from solution.**

10. **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.

11. **Remove the plate from the magnetic separation device.**

12. **Add 500 µl 70% ethanol to the sample and pipette mix 15 times to resuspend the MAG-S1 particles.**
    ⚠ Complete resuspension of the MAG-S1 particles is crucial for obtaining purity.

13. **Place the sample plate back on the magnetic separation device and wait 5 min or until the magnetic beads clear from solution.**

14. **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.

15. **Repeat steps 11-14 for a second wash.**

16. **Dry the beads by incubating for 10 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.

17. **Remove the plate from the magnetic separation device. Add 50-100 µl nuclease free water to each well and pipette mix 25 times to complete resuspend the MAG-S1 magnetic particles.** ⚠ Complete resuspension of the MAG-S1 particles is crucial for obtaining purity.

18. **Incubate at room temperature for 10 min.**

19. **Place the sample plate back on the magnetic separation device and wait 5 min or until the magnetic beads clear from solution.**

20. **Transfer the eluate (cleared supernatant containing the DNA) to a new microplate for storage. Store DNA at -20°C.**

Troubleshooting guide

Please use this guide to troubleshoot any problems that may arise. For further assistance, please contact technical support via:
Phone: 1-855-262-4246 (in US), outside US, 1-919-719-0665
Email: support@magbiogenomics.com

Symptoms	Possible Causes	Comments
Low DNA Yields	Incomplete resuspension of HighPrep™ MAG-S1 particles	Resuspend HighPrep™ MAG-S1particles by vortexing vigorously before use.
	Loss of HighPrep™ MAG-S1 particles during operation	Avoid disturbing the HighPrep™ MAG-S1 particles during aspiration of supernatant.
	Ethanol is not added into HSW Buffer	Add absolute 100% Ethanol to HSW Buffer (see page 2 for instructions).
	Inefficient cell lysis	Double the volume of Pro K Solution and incubate longer.
HighPrep™ MAG-S1 particles do not completely clear from solution	Too short of magnetizing time	Increase collection time on the magnet.
Problems in downstream applications	Insufficient DNA/RNA in starting material	Use more starting material
	Ethanol carry-over	Dry the HighPrep™ MAG-S1 particles completely before elution
Carryover of MAG-S1 particles	MAG-S1 particles did not fully clear solution on m	Increase magnetization time. If small amount of carryover, place eluted sample on a magnetic seapartion device and perform an additional 5 min magnetization.

Ordering Information

Product Description	Catalog No.	Preps
HighPrep™ Viral DNA/RNA Kit (96 preps)	HPV-DR96	96
HighPrep™ Viral DNA/RNA Kit (384 preps)	HPV-DR96X4	384

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www.magbiogenomics.com