

MagaBio plus Virus DNA/RNA Purification Kit VI

■ | Product Introduction

This kit is designed for the rapid extraction of high-purity viral DNA/RNA from a wide range of human biological specimens, including plasma, serum, ascitic fluid, urine, swabs, tissues, feces, sputum, bronchoalveolar lavage fluid, cerebrospinal fluid, whole blood, and other bodily fluids. Utilizing a proprietary lysis buffer system, the kit efficiently lyses viruses to release nucleic acids, which are then purified using advanced nano-scale magnetic bead technology.

Two workflows are included:

For low-complexity samples such as plasma, serum, ascitic fluid, and swabs, nucleic acids can be purified within 14 minutes without proteinase K (PK).

For viscous, high-protein samples such as whole blood and similar fluids, adding the provided PK enables high-purity extraction in just 24 minutes.

The purified nucleic acids are highly stable and suitable for downstream applications including qPCR and NGS.

■ | Product Features

- **Fast & Simple:** Streamlined workflow completes nucleic acid purification in just 14–24 minutes.
- **Flexible Packaging Formats:** Available as bottled reagents for manual extraction or as pre-filled plate/strip compatible with the GenePure Pro Nucleic Acid Purification System for automated, high-throughput (96 samples) processing.
- **Versatile Sample Compatibility:** Efficiently extracts nucleic acids from both simple samples (e.g., plasma, serum) and complex matrices (e.g., whole blood, feces, high-protein fluids).
- **High Sensitivity:** When paired with high-sensitivity qPCR kits, extraction performance reaches 10 IU/mL for DNA (HBV) and 50 IU/mL for RNA (HCV) based on standard calibration.

● Linearity and Sensitivity

1) DNA Viruses:

HBV-positive serum samples at various concentrations (10^5 , 10^4 , 10^3 , 10^2 , 10 IU/mL) were extracted using the MagaBio Plus Viral DNA/RNA Purification Kit VI, followed by detection with the BSB01M1 HBV PCR Fluorescence Quantitative Detection Kit. A standard curve was generated using the 10^5 to 10^2 IU/mL samples.

A negative serum sample was included in the experiment as a negative control to monitor potential contamination or non-specific amplification during the extraction and detection processes. No amplification was observed, confirming the assay's reliability and specificity.

The Ct values are shown in Table 1, with the standard curve in Figure 1 and the amplification curves in Figure 2. The resulting standard curve exhibited excellent linearity with an R^2 value of 0.999. The limit of detection (LoD) for HBV was confirmed to be 10 IU/mL, demonstrating that this kit provides high linearity, excellent sensitivity, and efficient PCR amplification performance for DNA virus extraction.

Sample Concentration(IU/mL)	Ct Value
10^5	23.99
10^5	24.23
10^4	27.14
10^4	27.44
10^3	30.99
10^3	30.96
10^2	33.39
10^2	33.85
10	36.3
10	36.38
Negative Control	NA
	NA

Table 1. Summary of qPCR Ct Values for HBV Detection

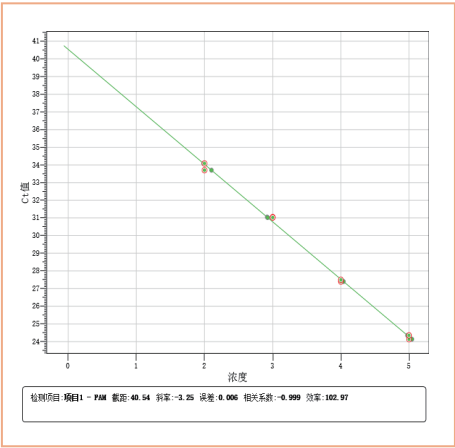


Figure 1. Standard Curve for HBV Detection

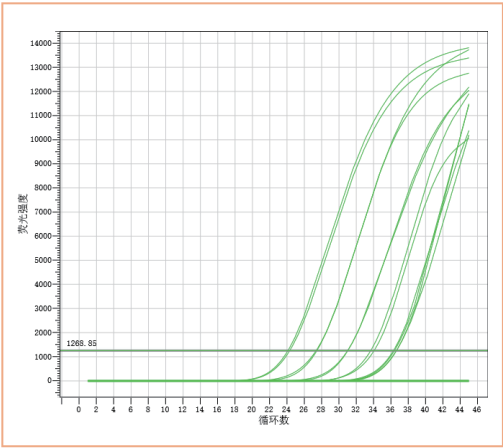


Figure 2. Amplification Curves for HBV Detection

1) RNA Viruses:

HCV-positive serum samples at various concentrations (10^4 , 10^3 , 10^2 , 50 IU/mL) were extracted using the MagaBio Plus Viral DNA/RNA Purification Kit VI and tested with a BSB02M1F HCV RT-PCR Fluorescence Quantitative Detection Kit. A standard curve was generated using the 10^4 to 10^2 IU/mL samples.

A negative serum sample was included in the experiment as a negative control to monitor potential contamination or non-specific amplification during the extraction and detection processes. No amplification was observed, confirming the assay's reliability and specificity.

The Ct values are shown in Table 2, the standard curve is illustrated in Figure 3, and the amplification curves are presented in Figure 4. The standard curve demonstrated excellent linearity with an R^2 value of 1, and the limit of detection (LoD) for HCV was determined to be 50 IU/mL. These results indicate that the kit offers high sensitivity and linearity for RNA virus extraction, along with efficient and reliable PCR amplification.

Sample Concentration(IU/mL)	Ct Value
10^4	27.93
10^4	27.9
10^3	31.17
10^3	31.21
10^2	34.77
10^2	34.53
50	35.75
50	35.43
50	35.04
50	35.09
Negative Control	NA
	NA

Table 2. Summary of qPCR Ct Values for HCV Detection

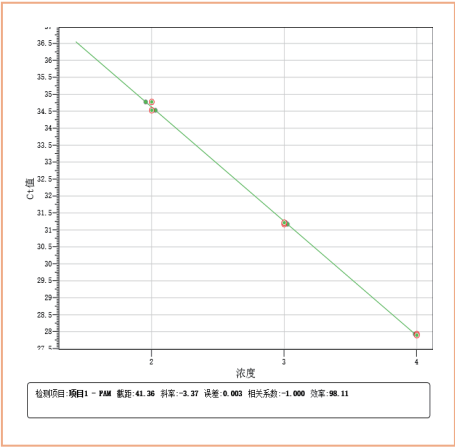


Figure 3. Standard Curve for HCV Detection

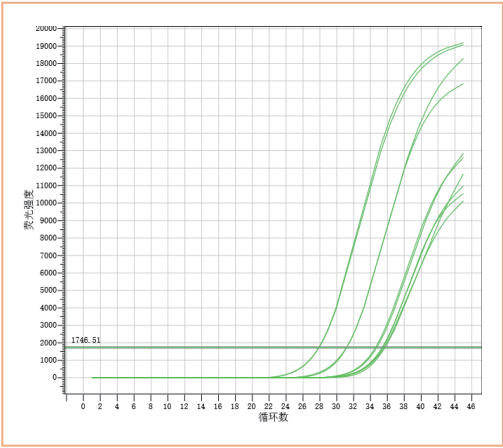


Figure 4. Amplification Curves for HCV Detection

● Reproducibility

HBV reference materials were diluted in HBV-negative serum to concentrations of 10⁴ IU/mL and 10² IU/mL, then extracted using the MagaBio Plus Viral DNA/RNA Purification Kit VI. Detection was performed with the BSB01M1 HBV PCR Fluorescence Quantitative Detection Kit. The Ct values are summarized in Table 3, and the amplification curves are shown in Figure 5. The results demonstrate that the kit provides excellent consistency and reproducibility in nucleic acid extraction from samples.

Sample Concentration(IU/mL)	10 ⁴ IU/mL	10 ² IU/mL
Ct Value	27.48	34.01
	27.48	33.97
	27.52	34.20
	27.63	34.05
	27.41	34.02
	27.56	33.99
	27.61	34.31
	27.48	33.90
	27.43	33.89
	27.34	33.90
Mean Value	27.49	34.02
CV Value	0.33%	0.40%

Table 3. Summary of qPCR Ct Values for Detection

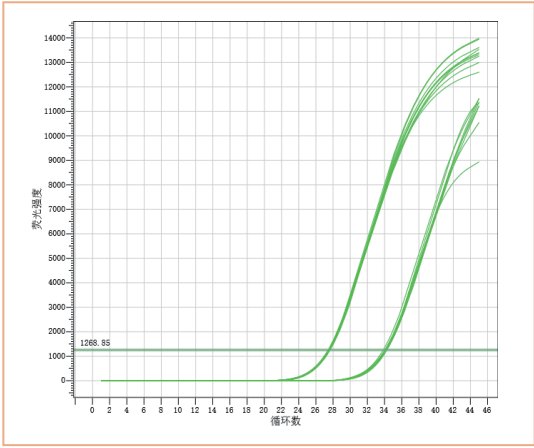


Figure 5. Amplification Curves for Detection

● Comparative Evaluation with Competitor Product

Serial 10-fold dilutions of H1N1 influenza virus positive samples were prepared and subjected to RNA extraction using both the MagaBio Plus Viral DNA/RNA Purification Kit VI and the competitor's Q brand extraction kit. Both sets of extracted RNA samples were tested using the same detection kit — the H1N1 Influenza Virus PCR Fluorescence Detection Kit. The Ct values are summarized in Table 4, and the amplification curves are shown in Figure 6. The results demonstrate that the MagaBio Plus kit achieves superior extraction and detection efficiency compared to the Q brand kit, with earlier Ct values observed. Moreover, at a 1,000-fold dilution, the Q brand kit failed to detect viral nucleic acids, while the MagaBio Plus kit maintained reliable detection.

Sample	Bioer	Q Brand
Original Sample	29.30	30.52
	29.16	30.30
10-fold Dilution	32.49	33.53
	32.43	33.40
100-fold Dilution	35.51	36.73
	34.99	36.21
1000-fold Dilution	39.95	39.89
	38.75	NA

Table 4. Summary of qPCR Ct Values for H1N1 Influenza Virus Detection

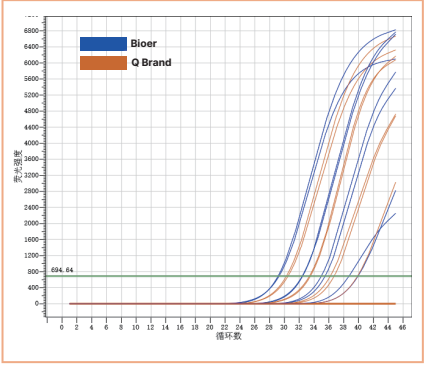


Figure 6. Amplification Curves for H1N1 Influenza Virus Detection

● Klebsiella Pneumoniae Testing

Klebsiella pneumoniae samples were prepared and diluted in negative urine samples in a 10-fold concentration gradient to final concentrations of 10⁷, 10⁶, 10⁵, and 10⁴ copies/mL, along with a negative control. Nucleic acid extraction was performed using the MagaBio Plus Viral DNA/RNA Purification Kit VI. Detection was conducted using the Klebsiella pneumoniae PCR Fluorescence Detection Kit. The Ct values are summarized in Table 5, and the amplification curves are shown in Figure 7. These results demonstrate that the MagaBio Plus kit provides efficient extraction of Klebsiella pneumoniae from urine samples.

Sample Concentration(IU/mL)	CT
10 ⁷	21.8
10 ⁶	24.94
10 ⁵	28.09
10 ⁴	31.28
Negative Control	NA

Table 5. Summary of qPCR Ct Values for Klebsiella pneumoniae Detection

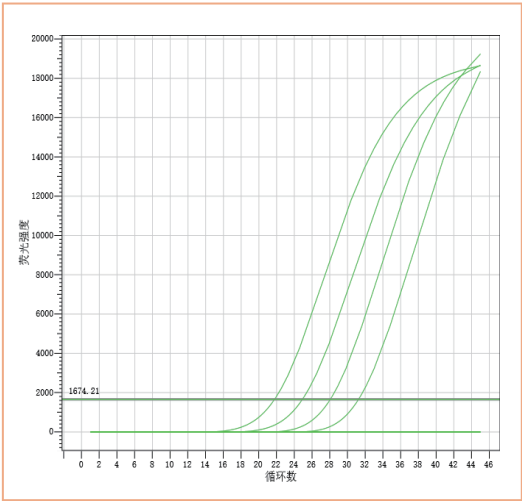


Figure 7. Amplification Curves for Klebsiella pneumoniae Detection

■ Ordering Information

Product Name	Cat. No.	Package	Note	Storage Condition
MagaBio plus Virus DNA/RNA Purification Kit VI	BSC110S1B	50T	Bottled reagents for manual extraction	2°C ~30°C
	BSC110M1B	100T	Bottled reagents for manual extraction	
	BSC110T1P	16T	1T/strip×16, Compatible with A1600	
	BSC110S1P	32T	1T/strip×32, Compatible with A1600	
	BSC110S1S	32T	1T/strip×32, Compatible with NPA-32P or NPA-32E	
	BSC110T1E	16T	8T/plate×2, Compatible with NPA-32P or NPA-32E	
	BSC110S1E	32T	16T/plate×2, Compatible with NPA-32P or NPA-32E	
	BSC110M1S	48T	6T/strip×8, Compatible with NPA-96E or NPA-96T or NPA-96	
	BSC110M1E	48T	48T/plate ×1, Compatible with NPA-96E or NPA-96T or NPA-96	
	BSC110L1E	96T	96T/plate ×1, Compatible with NPA-96E or NPA-96T or NPA-96	



BIOER
TECHNOLOGY

Add: 1192 BinAn Rd., Binjiang District, Hangzhou, Zhejiang, 310053, China
Tel: +86-571-87774513 Fax: +86-571-87774553 E-Mail: reagent@bioer.com

Web: www.bioer.com
E-Date: 2025.06