



BIOER
TECHNOLOGY

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Gastrointestinal Pathogen Detection Solution

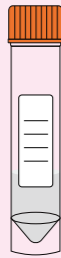
Explore our advanced Gastrointestinal Pathogen Detection Solution, for precise and comprehensive testing leading to improved healthcare outcomes.

Introduction:

Gastrointestinal infections (GIs) can be caused by bacteria, viruses, and parasites. Most cases clear up in a few days, but high fever, vomiting, or bloody stool need medical attention. Early and accurate diagnosis is essential for appropriate treatment and management. Our Gastrointestinal Pathogen Detection Solution offers comprehensive testing from extraction to detection, enabling identifying the specific pathogens.

Workflow:

01



STEP 1: Sample Collection

Sample Type: stool swabs, throat swab

02



STEP 2: Nucleic Acid Extraction

GenePure Nucleic Acid Purification System

03



STEP 3: Nucleic Acid Detection

LineGene/QuantGene Fluorescent Quantitative Detection System

04



STEP 4: Result Analysis

Qualitative Analysis: Positive, Negative, Invalid

Nucleic Acid Purification System:

The 32-throughput GenePure Pro and the 96-throughput GenePure Pro 96 Nucleic Acid Purification Systems are ideal for the extraction of gastrointestinal pathogens. These automated platforms offer efficient and reliable nucleic acid purification, streamlining workflows for high-throughput applications. The systems are compatible with three specialized extraction kits: BSC71 MagaBio Plus Virus DNA/RNA Purification Kit II, BSC86 MagaBio Plus Virus DNA/RNA Purification Kit III, and BSC110 MagaBio Plus Virus DNA/RNA Purification Kit VI, ensuring optimal performance for various gastrointestinal pathogen samples. Sample sources can include oral swabs or feces.

Nucleic Acid Purification System



● NPA-16H

● NPA-32E

● NPA-96E

MagaBio plus Virus DNA/RNA Purification Kit II

BSC71 CE IVD

The MagaBio plus Virus DNA/RNA Purification Kit II is designed for the rapid, efficient and automatic isolation and purification of high quality virus nucleic acid from a variety of samples on the automatic nucleic acid extraction system. It takes about only 35minutes for the total procedure. The obtained virus nucleic acid can be used directly for a broad range of downstream applications, such as qPCR, NGS, etc.

Product Features:

- ✓ **Sample types:** Serum, Plasma, Whole blood, Swabs, Saliva, Body fluid, Tissue, Feces, etc.
- ✓ **Rapid and Reliable:** Nucleic acid extraction can be completed in as little as 35 minutes.
- ✓ **High Extraction Efficiency:** High purity viral DNA or viral RNA.
- ✓ **Safe and Non-toxic:** Ensures user safety and environmental protection.

MagaBio Plus Virus DNA/RNA Purification Kit III

BSC86  

MagaBio Plus virus DNA/RNA Purification kit III compared to the previous two generations, this product uses a unique lysis system to rapidly lyse the virus, combined with a new magnetic bead technology for the purification of nucleic acids. The sample types cover tissue, feces, whole blood, serum, plasma, body fluid samples and swabs, which are more common and do not require protease K. 96 samples can be easily extracted in only 15 minutes. The purified nucleic acid can be used for detection of NGS, qPCR, etc.

Product Features:

- ✓ **Wide application:** Suitable for samples of tissue, feces, whole blood, serum, plasma, body fluid samples and swabs.
- ✓ **Easy to use:** No need to add protease K, just add samples to complete whole extraction.
- ✓ **Rapid extraction:** 96 samples can be extracted in 15 minutes.
- ✓ **High sensitivity:** The sensitivity of DNA virus extraction was up to 10 IU/mL and RNA virus extraction was up to 50 IU/mL.

MagaBio plus Virus DNA/RNA Purification Kit VI

BSC110

MagaBio plus Virus DNA /RNA Purification Kit VI is used for extraction and purification of viral nucleic acid DNA or RNA from the biological specimens. Depending on the sample type, we provide extraction buffers with or without PK along with corresponding protocols. For complex samples like whole blood and tissue, we recommend using extraction buffers with PK. For simpler samples like serum, plasma, and throat swabs, we recommend using extraction buffers without PK.

Product Features:

- ✓ **Sample types:** plasma, serum, ascites, swabs, tissue, whole blood, feces.
- ✓ **Rapid and Reliable:** Without PK 14min, With PK 24min completed the purification.
- ✓ **High Extraction Efficiency:** High purity viral DNA or viral RNA.
- ✓ **High Sensitivity:** HBV DNA: 10 IU/mL; HCV: 50 IU/mL.

Ordering Information:

Cat. No.	Product Name	Package	Storage Condition
BSC71	MagaBio plus Virus DNA/RNA Purification Kit II	16T/32T/48T/96T	2-8°C
BSC86	MagaBio Plus Virus DNA/RNA Purification Kit III	16T/32T/48T/96T	2-8°C
BSC110	MagaBio plus Virus DNA/RNA Purification Kit VI	16T/32T/48T/96T	2-8°C

Fluorescent Quantitative Detection System:

Bioer Technology has been dedicated to the field of molecular detection for many years. Beyond nucleic acid extraction and its related products, we also offer real-time quantitative PCR (qPCR) instruments and corresponding disease detection kits. Our qPCR instruments include the latest QuantGene 9600, featuring a large touchscreen for standalone operation; the LineGene 9600 Plus, known for its stable performance and high market share; LineGene 9600 Pro, an upgraded version of the LineGene 9600 Plus, featuring a touchscreen and a shorter full-channel scanning time.

LineGene 9600 Pro   

The LineGene9600 Pro is an upgraded version of the LineGene9600 Plus, featuring improved optical detection and temperature control modules. These upgrades make the heating and cooling faster and reduce detection time. It can scan a 96-well plate with 6 channels in just 7 seconds. The combination of LED and PD ensures accurate scanning without optical path differences or edge effects.



QuantGene 9600   

QuantGene 9600 is based on the excellent quality of the LineGene family, using the very mature thermoelectric refrigeration technology, a new light source and optical circuit design. The unique constant current power supply and 6-zone independent temperature control method ensure that the product is fast, accurate and stable in fluorescence quantitative analysis.



LineGene 9600 Plus



LineGene 9600 Plus real time PCR detection system is specially designed for research and clinical users. It adopts the newest customized Peltier of Ferrotec. With advanced optical fiber technology and brand-new global wide-voltage switch power, patent technology of unique heat dissipation and bottom detection, LineGene 9600 Plus presents higher ramp rate, better temperature control precision, temperature uniformity and performance stability.



Gastrointestinal Pathogen Detection Kits:

Cat. No.	Product Name	Sample Type	Recommended Extraction Kit	Certificate
BSJ26	Enterovirus Universal, Enterovirus 71, Coxsackievirus A6, Coxsackievirus A10 and Coxsackievirus A16 nucleic acid Detection Kit (Fluorescent PCR)	Throat swab	BSC71/86/110	CE-IVD
BSJ29	Enterovirus Universal Nucleic Acid Detection Kit (Fluorescent PCR)	Throat swab		RUO
BSJ35	Norovirus/Group A Rotavirus/ Enteric Adenovirus Nucleic Acid Detection Kit (Fluorescence PCR)	Stool swabs		CE-IVD
BSJ39	Vibrio cholerae Nucleic Acid Detection Kit (Fluorescence PCR)	Feces		CE-IVD

1. Enterovirus Universal, Enterovirus 71, Coxsackievirus A6, Coxsackievirus A10 and Coxsackievirus A16 nucleic acid Detection Kit (Fluorescent PCR)

Specification:

Parameters	Description
Sample Type	Human throat swab
Sensitivity	500 copies/mL
Precision	The coefficient of variation for intra-assay, inter-assay, inter-day, and intra-day precision is less than 5%.
Detection Ability	The kit is used for qualitative detection of enterovirus universal (EVU, include A2, A4, A5, A6, A7, A9, A10, A12, A16, B1, B2, B3, B4, B5, enterovirus 71 and Echovirus, etc.) , and can distinguish enterovirus 71 (EV71), Coxsackievirus A6 (CA6), Coxsackievirus A10 (CA10) and Coxsackievirus A16 (CA16).
Compatible Instrument	LineGene 9600 , QuantGene 9600 Fluorescent Quantitative Detection System and ABI 7500.
Detection Time	≤1 h
Storage Condition	-20 ± 5 °C avoid light

Application Cases:

Case 1

After the positive reference J26 P1-J26 P16 and negative reference J26N1-J26N8 of Bioer Technology were redissolved according to test requirements, the MagaBio plus Virus DNA /RNA Purification Kit III(BSC86S1E) was used to extract and use this kit to test the accuracy.

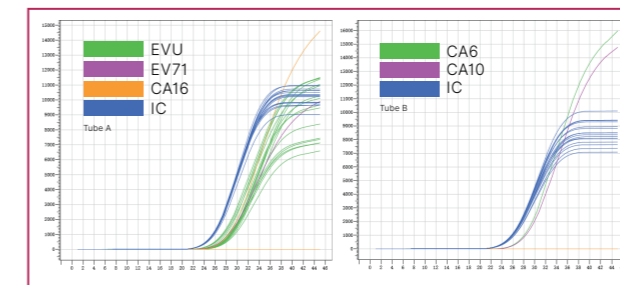


Figure 1 Positive Reference J26 P1-J26 P16

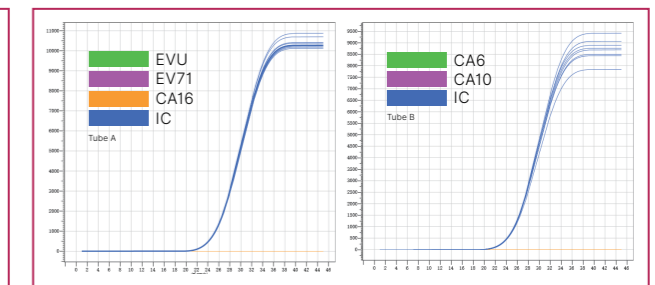


Figure 2 Negative reference J26 N1-J26 N8

Results: The results showed that Echovirus nucleic acids could be detected accurately. Bioer technology reference test results: positive rate of 100%, negative rate of 100%.

2. Enterovirus Universal Nucleic Acid Detection Kit (Fluorescent PCR)

Specification:

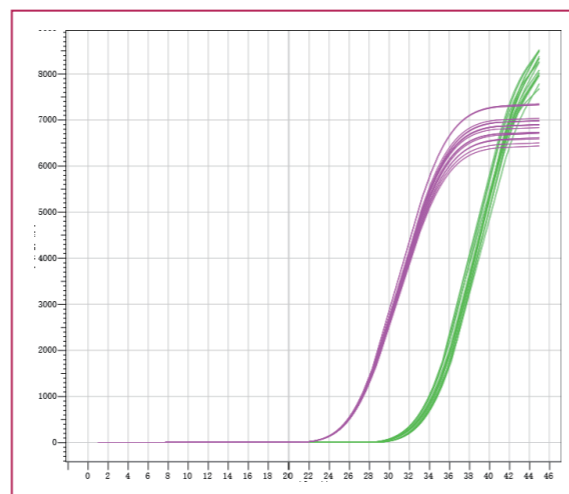
Parameters	Description
Intended Use	This kit is intended for the qualitative detection of enterovirus nucleic acid in throat swab samples. It can be used as an aid in the diagnosis of generalized enterovirus infections in clinical settings, but should not be the sole basis for clinical diagnosis or management decisions.
Sample Type	Throat Swab
Sensitivity	200 Copies/mL
Precision	The coefficient of variation for inter-batch, intra-batch, inter-day, and intra-day precision is less than 5%.
Accuracy	The positive and negative agreement rates for the reference materials tested by the manufacturer are both 100%.
Specificity	This kit shows no cross-reactivity with norovirus, herpes simplex virus (1/2), enteric adenovirus (40/41), varicella-zoster virus, group A rotavirus, EB virus, rubella virus, measles virus, influenza A virus, parainfluenza virus (1/2/3), influenza B virus, human cytomegalovirus, respiratory syncytial virus (A/B), group B streptococcus, Klebsiella pneumoniae, Escherichia coli, Streptococcus pneumoniae, Staphylococcus aureus, Salmonella, Moraxella catarrhalis, Haemophilus influenzae, Mycoplasma pneumoniae, Bordetella pertussis, adenovirus (3/4/7), or human genomic DNA.
Compatible Instruments	LineGene 9600 , QuantGene 9600 Fluorescent Quantitative Detection System, Fully Automatic Nucleic Acid Purification and Real-Time Fluorescence PCR Analysis System (Model: FQD-A1600), ABI7500
Detection Time	50 minutes
Storage Conditions	Store at -20 ± 5 °C, protected from light.

Application Cases:

Detection Limit

After diluting CA6, CA10, CA16, EV71, CA2, CA5, CA7, CA9, CA12, CB1, CB2, CB3, CB4, CB5, and ECHO11 virus cultures, as well as CA4 pseudovirus to 200 copies/mL, the requirement is for a 100% positive detection rate.

Results: The results indicate that the minimum detection limit of this kit is 200 copies/mL.



3. Norovirus / Group A Rotavirus / Enteric Adenovirus Nucleic Acid Detection Kit (Fluorescence PCR)

Specification:

Parameters	Description
Sample Type	Stool Specimens
Test Principle	Real-time Fluorescent PCR
Sensitivity	500 Copies/mL
Precision	CV < 5%
Detectability	It can detect norovirus, group A rotavirus and Enteric Adenovirus simultaneously
Compatible Platforms	LineGene 9600 and QuantGene 9600 Fluorescent Quantitative Detection System, ABI 7500
Detection Time	35 min
Storage Condition	-20 ± 5 °C avoid light

Application Cases:

Case 1

The nucleic acid detection kit (fluorescent PCR method) was used to detect the norovirus, group A rotavirus and Enteric Adenovirus samples with the concentration of 500 copies/mL, respectively, each concentration was repeated 20 times. The results were as follows:

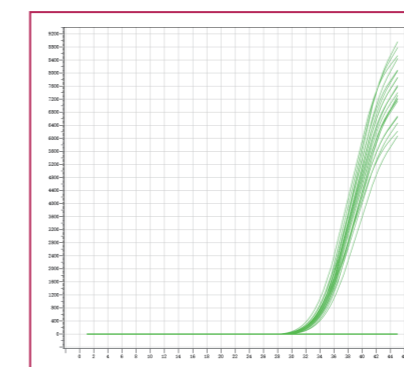


Figure 1 The amplification curve of group A rotavirus

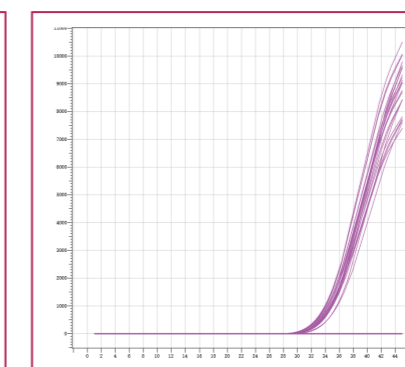


Figure 2 The amplification curve of enteric adenovirus

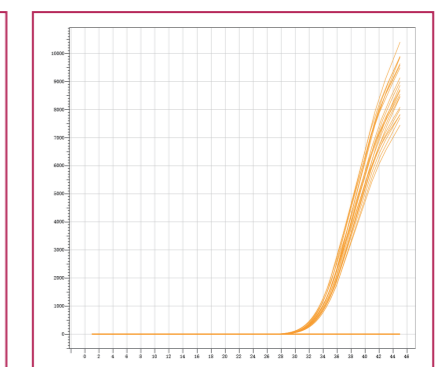


Figure 3 The amplification curve of norovirus

Results: The results showed that 500 copies/mL of norovirus, group A rotavirus and enteric adenovirus samples were repeated for 20 times respectively, the detection rate was 100%, and the CV value was less than 5%, indicating that the test results of the kit at low concentrations were stable and the repeatability was good.

4. Vibrio Cholerae Nucleic Acid Detection Kit (Fluorescence PCR)

Specification:

Parameters	Description
Intended Use	This kit is designed for the qualitative detection of <i>Vibrio cholerae</i> nucleic acid in human stool samples. It is intended for use as an aid in clinical diagnosis and should not be used as the sole basis for diagnosing or ruling out cases.
Sample Type	Stool
Sensitivity	500 Copies/mL
Precision	The coefficient of variation for intra-assay, inter-assay, inter-day, and intra-day precision is less than 5%.
Accuracy	The positive and negative concordance rates for the reference samples provided by the manufacturer are both 100%.
Specificity	This kit shows no cross-reactivity with <i>Shigella</i> spp., <i>Vibrio parahaemolyticus</i> , <i>Escherichia coli</i> , <i>Staphylococcus aureus</i> , <i>Salmonella enteritidis</i> , <i>Salmonella typhimurium</i> , norovirus, rotavirus, adenovirus, <i>Klebsiella pneumoniae</i> , human genomic DNA, and others.
Compatible Instruments	LineGene 9600 and QuantGene 9600 Fluorescent Quantitative Detection System
Detection Time	50 minutes
Storage Conditions	Store at $-20 \pm 5^\circ\text{C}$, protected from light.

Application Cases:

1. Linear relationship

Dilute the positive reference sample from the company in a 10-fold gradient to 10^3 copies/mL and then perform the detection.

Results: The results indicate that there is a good linear relationship when detecting the company's reference samples with this reagent kit.

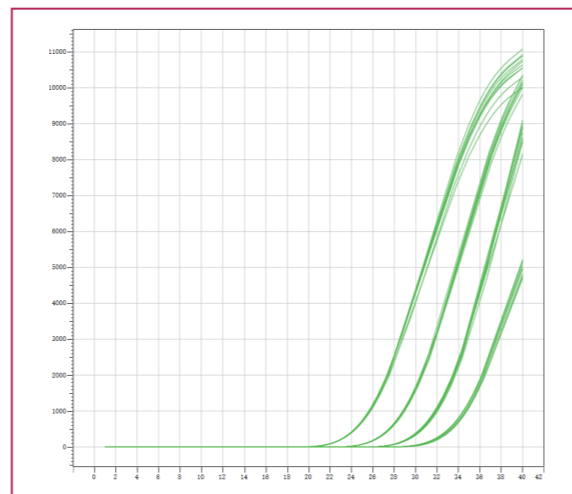


Figure 1 Amplification curves of the company's reference samples at different gradient concentrations

2. Reproducibility

Dilute the positive reference sample from the company to 10^5 copies/mL and 500 copies/mL, and then perform the detection 20 times for each dilution. Calculate the coefficient of variation (CV) of the Ct values, with the requirement that the CV of the Ct values does not exceed 5%.

Results: The results indicate that the precision of the 20 repeated detections of the company's reference samples at 10^5 copies/mL and 500 copies/mL concentrations is good, with the coefficient of variation (CV) of the Ct values being less than 5%, demonstrating that the reagent kit has good reproducibility.

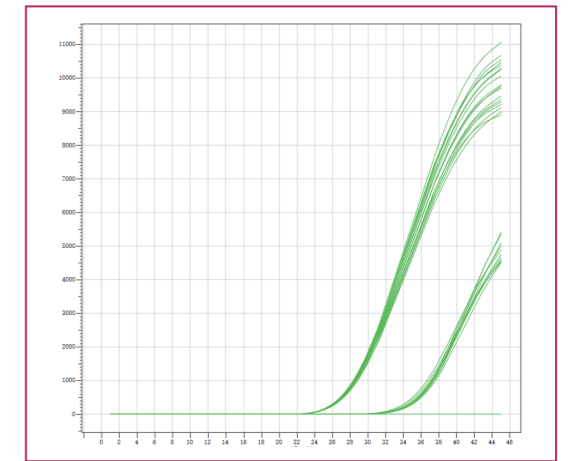


Figure 2 Amplification curves of the company's reference samples

3. Specificity

Perform cross-reactivity validation by testing for *Shigella*, *Vibrio parahaemolyticus*, *Escherichia coli*, *Staphylococcus aureus*, *Salmonella enterica*, *Salmonella pestis*, Norovirus, Rotavirus, Adenovirus, *Klebsiella pneumoniae*, and human genomic DNA.

Results: The results indicate that the reagent kit shows no cross-reactivity with *Shigella*, *Vibrio parahaemolyticus*, *Escherichia coli*, *Staphylococcus aureus*, *Salmonella enterica*, *Salmonella pestis*, Norovirus, Rotavirus, Adenovirus, *Klebsiella pneumoniae*, or human genomic DNA. Therefore, the reagent kit exhibits good specificity.

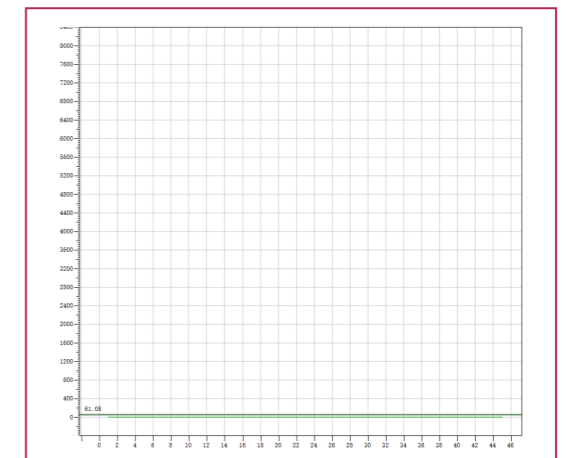


Figure 3 Specificity

Ordering Information:

Cat. No.	Product Name	Package	Storage Condition
BSJ26	Enterovirus Universal, Enterovirus 71, Coxsackievirus A6, Coxsackievirus A10 and Coxsackievirus A16 nucleic acid Detection Kit (Fluorescent PCR)	48T/96T	Store at $-20 \pm 5^\circ\text{C}$, protected from light.
BSJ29	Enterovirus Universal Nucleic Acid Detection Kit (Fluorescent PCR)		
BSJ35	Norovirus/Group A Rotavirus/Enteric Adenovirus Nucleic Acid Detection Kit (Fluorescence PCR)		
BSJ39	<i>Vibrio Cholerae</i> Nucleic Acid Detection Kit (Fluorescence PCR)		