BIORI BIOTECH

MOLECULAR DIAGNOSIS RAW MATERIALS AND SOLUTION

Pursuing Excellence in Quality
Providing Prompt and Thorough Service

Web:www.biori-en.com

Zhuhai Biori Biotechnology Co., Ltd. is a biotechnology enterprise that upholds the principles of integrity, responsibility, progress, and innovation. We are dedicated to overcoming key technologies in the life sciences field, providing high-quality products and professional services to safeguard human health and enhance quality of life. Over more than a decade of perseverance and technological accumulation, Biori has developed multiple technology platforms, including protein evolution, recombinant expression, process development, and application development. We have established a rigorous production quality control system and a comprehensive marketing service network.

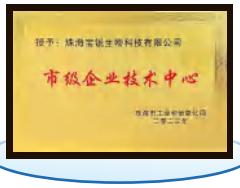
Biori is deeply committed to the upstream raw materials field of molecular diagnostics. Our enzyme raw material products, known for their stable processes, excellent performance, and stringent quality control, have become long-term partners of many molecular diagnostic reagent companies.

Furthermore, Biori is continuously expanding in the biopharmaceutical field. Our biopharmaceutical quality testing products and mRNA vaccine enzyme raw materials have gained increasing recognition and collaboration from renowned pharmaceutical companies. Our biological product quality safety analysis series covers multiple product lines, including exogenous contamination microorganism detection, gene and cell therapy, host cell residual DNA and RNA detection, host cell residual DNA fragment analysis, and host cell protein residue. These products offer professional solutions for quality safety control in the bioproduct field, supporting the development of the health industry with high-quality products and services.

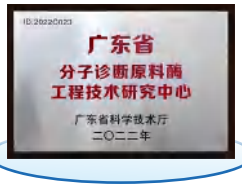
National High-Tech Enterprise

National Level Specialized, Refined, Differentiated, and Innovative Little Giant Enterprise

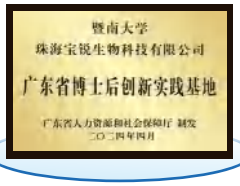
Municipal Enterprise Technology Center



Molecular Diagnostic Raw Materials Technology Center of Guangdong Province



Postdoctoral Innovation and Practice Base



ISO 13485:2016
ISO 9001:2015

INTRODUCTION TO CUSTOMIZED SERVICES

R&D platform

Customer groups

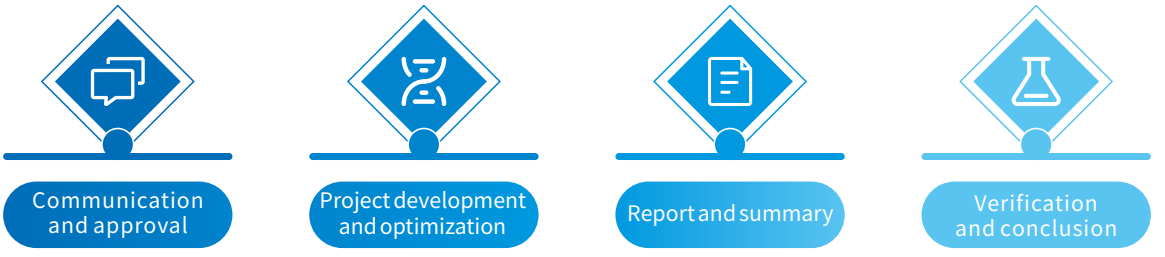
Biori has been focusing on the research and development of nucleic acid diagnostic raw materials for nearly ten years, and has accumulated rich experience. We can provide customers with a series of solutions in various related fields, like technical demonstration to R&D projects, research optimization, pilot-scale development, and production scale-up.

Clinical diagnosis | Animal diagnosis | Scientific research | Bio-pharmacy

Customized product

Biori's products, such as nucleic acid diagnostic enzymes, high-performance premix, direct amplification reagents, rapid amplification reagents, isothermal amplification reagents, extraction reagents, instruments and equipment, can provide customers with OEM and flexible customized development services.

Customized service process



CONTENTS

PCR Enzymes and Master Mixes

Enzymes

Hot Start Taq

Products	Specification	Catalog No.	Lyo.No.	Features	Application
HS Taq	5U/μL	E03	FE03	①Chemical modification, 95℃, 5-10min hot start. ②Gradual release of activity, high specificity.	①Endpoint method(E03)、Quantitative PCR. ②Multiplex PCR, genotyping test, highly sensitive virus detection.
Superstart Taq plus	5U/μL	E07	FE07	①Novel antibody modification, 95℃, 30s-1min hot start. ②High sensitivity and strong specificity. ③Low-concentration samples showed stability and high fluorescence values.	①Endpoint method(E07)、Quantitative PCR. ②Multiplex PCR, genotyping test, highly sensitive virus detection.
Hyperstart® Taq	5U/μL	E09	FE09	①Adaptor modification, reversible thermal start above 60℃. ②Dynamic modification of the PCR process, with high sensitivity and strong specificity. ③Suitable for stable preservation of liquids at 2-8℃.	①Endpoint method(E09)、Quantitative PCR. ②Multiplex PCR, genotyping test, highly sensitive virus detection.
Robustart Taq HD	5U/μL	E15	FE15	3'mismatch recognition enzyme	ARMS detection technology
Robustart Taq	5U/μL	E16	FE16	①Antibody modification, 95℃, 30s-1min hot start. ②High sensitivity and strong specificity. ③Highly applicable to various types of tests.	①Endpoint method(E16)、Quantitative PCR. ②Multiplex PCR, genotyping test, highly sensitive virus detection.
Robustart Taq QS II	5U/μL	E20	FE20	①Antibody modification, 95℃, 30s-1min hot start. ②The amplification speed is fast, no less than 1kb per 10 seconds. ③Highly resistant to inhibitors from sources such as blood and swabs.	①Endpoint method、Quantitative PCR. ②Rapid amplification, direct amplification, nucleic acid Application of POCT (Point-of-Care Testing).
Robustart KTaqM3	5U/μL	E23	FE23	Without 5'exonuclease activity	Melting curve
Superstart Taq QS II plus	5U/μL	E31	FE31	①Novel antibody modification, 95℃, 30s-1min hot start. ②High sensitivity and strong specificity. ③The amplification speed is fast, no less than 1kb per 10 seconds.	Rapid amplification, nucleic acid point-of-care testing.
Robustart Taq QS III	5U/μL	E40	FE40	①Antibody modification, 95℃, 30s-1min hot start. ②The amplification speed is fast, no less than 1kb per 10 seconds. ③It is highly tolerant of inhibitors from sources such as blood and swabs, as well as residual substances like phenols and alcohols from sample pre-treatment.	①Endpoint method、Quantitative PCR. ②Rapid amplification, direct amplification, nucleic acidApplication of POCT (Point-of-Care Testing).

MMLV

Products	Specification	Catalog No.	Lyo.No.	Features	Application
Neoscript® RTase	200U/μL	E13	FE13	①The reverse transcription temperature range is 42-55°C. ②Excellent specificity and sensitivity. ③Strong adaptability, suitable for all kinds of sensitivity detection.	①cDNA synthesis, detection of various RNA pathogens. ②Gene expression analysis.
Neoscript® RTase HS	200U/μL	E29	FE29	①Hot-start modification blocked the reverse transcriptase activity at room temperature. ②The temperature range of reverse transcription is 50-55°C. ③Higher stability.	①cDNA synthesis, detection of various RNA pathogens. ②Gene expression analysis.
Neoscript® RTase II	200U/μL	E42	FE42	①The reverse transcription temperature range is 42-55°C. ②High specificity and sensitivity. ③High activity, suitable for various rapid and high-sensitivity detection. ④Strong tolerance to inhibitors from samples such as blood and swabs.	①cDNA synthesis, detection of various RNA pathogens. ②Gene expression analysis. ③Rapid amplification, direct amplification, nucleic acid detection POCT application.
Neoscript® RTase HS II	200U/μL	E43	FE43	①Hot start modification blocks reverse temperature. ②The reverse transcription temperature range is 50-55°C. ③Higher stability. ④Strong tolerance to inhibitors from samples such as blood and swabs.	①cDNA synthesis, detection of various RNA pathogens. ②Gene expression analysis. ③Rapid amplification, direct amplification, nucleic acid detection POCT.

Tth

Products	Specification	Catalog No.	Lyo.No.	Features	Application
Hyperstart® Tth	5U/μL	E10	FE10	①Aptamer modification, reversible hot start above 60°C. ②Bifunctional activities of polymerase and reverse transcriptase. ③In the presence of Mn^{2+}, reverse transcription can be performed at a high temperature of 60-70°C, which has higher reverse transcription efficiency for complex RNA templates and reduces non-specificity. ④Strong tolerance to inhibitors	①Quantitative PCR. ②Multiplex PCR, genotyping detection, high-sensitivity virus detection. ③Suitable for storage at 2-8°C.
Robustart Tth	5U/μL	E17	FE17	①Antibody modification, above 90°C, hot start for 30s-1min. ②Bifunctional activities of polymerase and reverse transcriptase. ③In the presence of Mn^{2+}, reverse transcription can be performed at a high temperature of 60-70°C, which has higher reverse transcription efficiency for complex RNA templates and reduces non-specificity. ④Strong tolerance to inhibitors.	①Quantitative PCR. ②Multiplex PCR, genotyping detection, high-sensitivity virus detection. ③Suitable for storage at 2-8°C.

UNG

Products	Specification	Catalog No.	Lyo.No.	Features	Application
UNG (Uracil-DNA Glycosylase)	1U/μL	E01	FE01	Digestion of dUTP-containing templates at 50°C; Heat inactivation at 95°C.	Contamination control.
TS-UNG II (Temperature Sensitive UNG)	1U/μL	E04-2	FE04-2	①Digest dUTP-containing templates at room temperature (20-37°C) and inactivate them by heating at 50°C or above. ②Suitable for reverse transcription amplification anti-contamination detection.	Contamination control.

Pfu

Products	Specification	Catalog No.	Lyo.No.	Features	Application
Pfu DNA Polymerase II	5U/μL	E32	FE32	①Ahigh-fidelity enzyme that catalyzes the polymerization of deoxynucleotides in the 5'→3' direction that is dependent on the DNA template. It has 3'→5' exonuclease activity but no 5'→3' exonuclease activity. ②The amplified product has blunt ends and no protruding A. ③Ability to read and amplify templates containing uracil and hypopurine. This feature can be used to amplify bisulfite-converted, deaminated or damaged DNA and is suitable for PCR anti-contamination systems.	①High-fidelity PCR ②Methylation detection

ddPCR

Products	Specification	Catalog No.	Lyo.No.	Features	Application
Hyperstart® Taq (ddPCR)	5U/μL	DE09	FDE09	①Aptamer modification, combined with optimized buffer for PCR/qPCR/ddPCR, can effectively promote the uniform generation of droplets in ddPCR, making it less likely to fuse. ②Excellent system adaptability and detection sensitivity.	ddPCR amplification
Robustart Taq (ddPCR)	5U/μL	DE16	FDE16	①Antibody modification, combined with optimized buffer for PCR/qPCR/ddPCR, can effectively promote the uniform generation of droplets in ddPCR, making it less likely to fuse. ②Excellent system adaptability and detection sensitivity.	ddPCR amplification

PCR Master Mix

DNA Master Mix

Products	Specification	Catalog No.	Lyo.No.	Features	Application
2×HS Premix-UNG (Probe qPCR)	2×	M2031	FM5031-DB	①Chemical modification, 95°C, 5-10min hot start . ②Gradual release of activity, strong specificity.	①Quantitative PCR. ②Multiplex PCR, genotyping detection, high-sensitivity virus detection. ③Suitable for storage at 2-8°C.
2×Superstart Premix plus-UNG (Probe qPCR)	2×	M2071	FM5071-DB	①Antibody modification, 95°C, 30s-1min hot start. ②High sensitivity and strong specificity. ③The detection of low-concentration samples is stable and the fluorescence value is high.	①Quantitative PCR. ②Multiplex PCR, genotyping detection, highsensitivity virus detection.
2×Hyperstart® Premix-UNG (Probe qPCR)	2×	M2091	FM5091-DB	①Aptamer modification, reversible hot start above 60°C. ②Dynamic modification during the PCR process, high sensitivity and strong specificity. ③Uitable for storage at 2-8°C.	①Quantitative PCR. ②Multiplex PCR, genotyping detection, highsensitivity virus detection.

Products	Specification	Catalog No.	Lyo.No.	Features	Application
2×Robustart Premix-UNG (Probe qPCR)	2×	M2161	FM5161 -DB	①Antibody modification, 95°C, 30s-1min hot start. ②High sensitivity and strong specificity. ③Strong applicability to various types of tests.	①Quantitative PCR. ②Multiplex PCR, genotyping detection, highsensitivity virus detection.

RNA Master Mix

Products	Specification	Catalog No.	Lyo.No.	Features	Application
Neoscript® RTase 1ST Strand cDNA Synthesis Kit	/	PM05	/	1st strand cDNA synthesis.	cDNA synthesis and gene expression analysis.
5×Neoscript® RT Premix-UNG (RT-PCR)	5×	PM5044 -DB	FPM5044 -DB	The optimized formula of dedicated buffer and UNG/dUTP anti-pollution system is used, which is suitable for high-sensitivity amplification of low-concentration RNA templates.	①Electrophoresis for RNA virus detection. ②Long RNA fragment amplification.
5×Neoscript® RT Premix-UNG (Probe qRT-PCR)	5×	M5134 -DB	FM5134 -DB	①The reverse transcription temperature range is 42-55°C. ②It has excellent specificity and sensitivity. ③It has strong applicability and is suitable for various types of high-sensitivity detection.	①Quantitative RT-PCR. ②Detection of human and animal-related RNA viruses. ③High-sensitivity detection of COVID-19, influenza virus, respiratory multiplex test, etc.

Tth Master Mix

Products	Specification	Catalog No.	Lyo.No.	Features	Application
5×Hyperstart® Tth Premix-UNG (Probe qRT-PCR)	5×	M5101 -TP	FM5101 -TP	①Aptamer modification, reversible hot start above 60°C. ②Bifunctional activities of polymerase and reverse transcriptase. ③In the presence of Mn^{2+}, reverse transcription can be performed at a high temperature of 60-70°C, which has higher reverse transcription efficiency for complex RNA templates and reduces non-specificity. ④Strong tolerance to inhibitors.	①Quantitative PCR. ②Multiplex PCR, genotyping detection, high-sensitivity virus detection. ③Suitable for storage at 2-8°C.
5×Superstart Tth Premix-UNG (Probe qRT-PCR)	5×	M5171 -TP	FM5171 -TP	①Antibody modification, above 90°C, hot start for 30s-1min. ②Bifunctional activities of polymerase and reverse transcriptase. ③In the presence of Mn2+, reverse transcription can be performed at a high temperature of 60-70°C, which has higher reverse transcription efficiency for complex RNA templates and reduces non-specificity. ④Strong tolerance to inhibitors.	①Quantitative RT-PCR. ②Detection of human and animal-related RNA viruses. ③High-sensitivity detection of COVID-19, influenza virus, respiratory multiplex test, etc.

Functional Protein

Products	Specification	Catalog No.	Lyo.No.	Features	Application
RNase Inhibitor	40U/μL	AS05	FAS05	①It can bind to RNase to form a complex, inhibit RNase activity, and protect RNA. ②It has stronger antioxidant capacity and can remain stable under low concentration DTT (less than 1mM). ③It has no inhibition on Taq, AMV, MMLV, Phage RNA Polymerase (SP6, T7, orT3).	①Reverse transcription reaction. ②One-step RT-qPCR. ③Other experiments to block RNase degradation of RNA.
T4 gene 32 Protein	10mg/mL	AS02	FAS02	①ssDNA binding protein, used to stabilize and label ssDNA. ②Used to stabilize the displaced DNA chain in RPA. ③Improve the yield and efficiency of reverse transcription in RT-PCR reactions.	RT，RT-qPCR，RPA

Accessories

Products	Specification	Catalog No.	Lyo.No.	Features	Application
Acetylated BSA	10mg/mL	AS01	/	①Protects the enzyme. ②Reduces the adsorption of enzymes by consumables. ③Does not affect the signal of PCR reaction.	Enzyme protectants
10000×SYBR Green	10000×	AS1006-2	/	Highly sensitive double-stranded DNA binding fluorescent dye, non-saturating dye, commonly used in nucleic acid gel electrophoresis.	①Nucleic acid gel electrophoresis. ②qPCR detection.
4×Lyo-protectant-9	4×	AS412-9	/	①It helps to enhance the structural stability of the freeze-dried product, and during the freeze-drying process, it can protect the active components of the sample, thereby extending the storage period of the sample. ②It can provide excellent solubility for freeze-dried samples, and the samples can be re-solubilized quickly. ③It can provide excellent solubility for freeze-dried samples, and the samples can be re-solubilized quickly.	①Lyophilization protectant and excipient. ②Used for PCR amplification reagents and raw material freezedrying.
2×Lyo-protectant-17	2×	AS212-17	/	①It helps to enhance the structural stability of the freeze-dried product, and during the freeze-drying process, it can protect the active components of the sample, thereby extending the storage period of the sample. ②It can provide excellent solubility for freeze-dried samples, and the samples can be re-solubilized quickly. ③It is mostly applicable to DNA systems and has certain anti-humidity properties. The freeze-dried products can be exposed to an ambient humidity of 20% - 25% for 4 hours before being vacuum-packed.	①Lyophilization protectant and excipient. ②Used for PCR amplification reagents and raw material freezedrying.

Products	Specification	Catalog No.	Lyo.No.	Features	Application
2×Lyo-protectant-156-5	2×	AS212 -156-5	/	①It helps to enhance the structural stability of the freeze-dried product, and during the freeze-drying process, it can protect the active components of the sample, thereby extending the storage period of the sample. ②It can provide excellent solubility for freeze-dried samples, and the samples can be re-solubilized quickly. ③It is mostly applicable to RNA systems and has certain moisture resistance. The freeze-dried products can be exposed to an ambient humidity of 20% - 25% for 4 hours before being vacuum-packed.	①Freeze-drying protectant, excipient, with certain antihygroscopicity. ②Used for PCR amplification reagents and raw material freezedrying.

dNTP

Products	Specification	Catalog No.	Lyo.No.	Features	Application
dNTP Mix	10mM	AS08-10-1234	/	PCR reaction substrate	Suitable for various PCR related reactions.
dATP	100mM	AS08-100-1	/		
dTTP	100mM	AS08-100-2	/		
dCTP	100mM	AS08-100-3	/		
dGTP	100mM	AS08-100-4	/		
dUTP	100mM	AS08-100-5	/		

GC-Rich Buffer

Products	Specification	Catalog No.	Lyo.No.	Features	Application
3×Novel GC Buffer (Mg^{2+} free)	3×	AS304	/	①The specially optimized buffer formula can promote the melting of GCrich fragments. ②A high amplification efficiency can be maintained during the amplification of GC-rich fragments.	Suitable for amplification of fragments with 60%-80% GC.

Premix Products and Performance Test Examples for Each Scenario

Nucleic acid-free (NA) products

Ultra-low DNA residue

The NA series products are processed with special technology to ensure the detection of Ultra-low residue and can be used in various molecular pathogenic microorganism detection scenarios.

Widely applicability, Strong compatibility

Compatible with conventional fluorescence quantitative PCR instruments on the market.

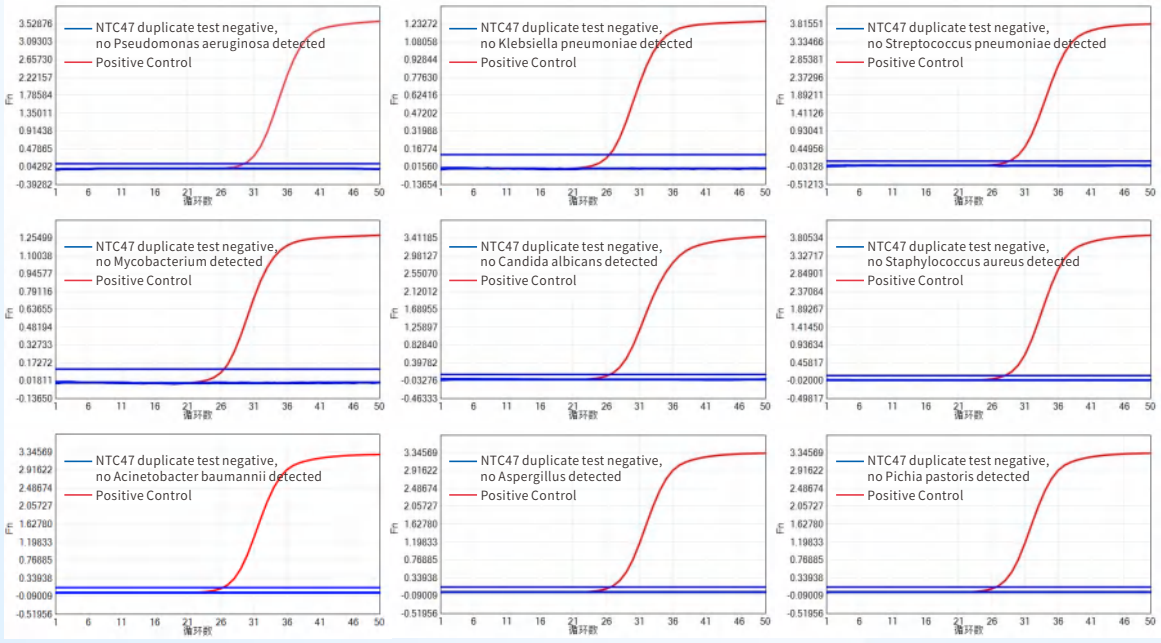
High sensitivity and adaptability

Can be used for multiplex PCR and high-sensitivity viral nucleic acid detection, and has strong applicability to various types of detection.

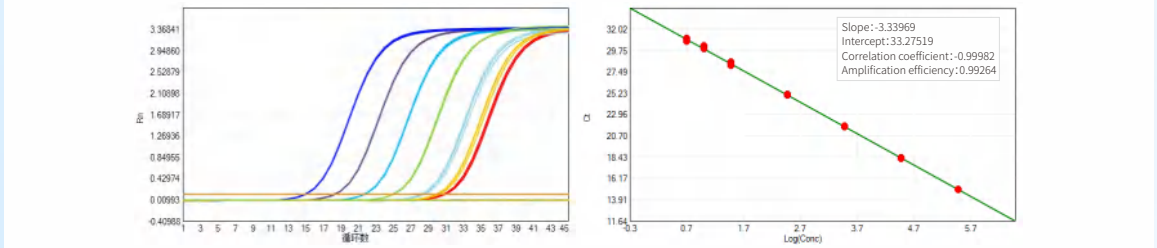
Customizable

Conventional/Lyophilized/ anti-pollution system formulations are available, and specifications support personalized customization.

NA product background bacteria residue test example



NA product linearity and amplification efficiency test example



- Figure 1 Example of E07-NA amplification system used to detect *E.coli* DNA linearity

Conclusion:The linear range of *E.coli* DNA detection is: 5fg/μL-300pg/μL, and the correlation R^2=0.999. The host nucleic acid residue in our company's recombinant protease is less than 8×10-4 copies/U.

Multiplex Fast PCR Applicable Products

DNA

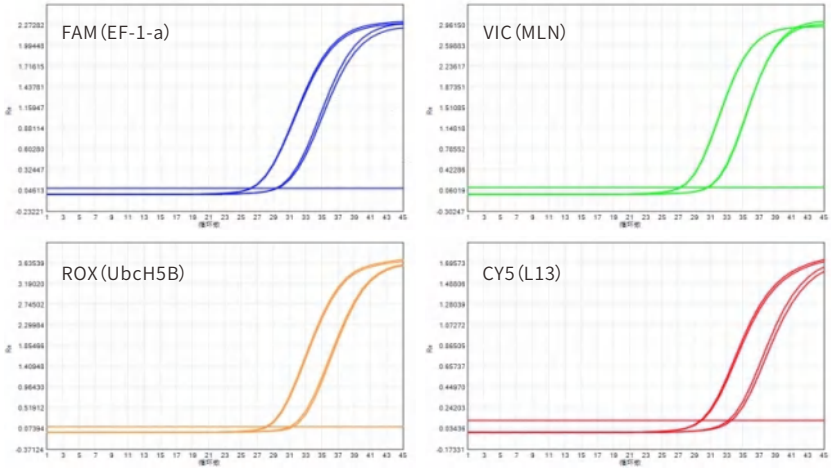
Products	Specification	Catalog No.	Lyo.No.	Features	Application
2×FastAmpli Premix-UNG IV (Probe qPCR)	2×	M2181-4	FM2181-4	①Amplification rate is not less than 1kb/10s, which is suitable for purified DNA rapid fluorescence quantitative PCR, and the detection can be completed within 30 minutes at the fastest. ②Excellent specificity and sensitivity. ③More suitable for multiple amplification.	① Human and animal related DNA virus detection. ② Genomic DNA amplification and typing detection. ③ Fast amplification detection.
2×Fast Direct Premix-UNG IV(Probe qPCR)	2×	MD2071-4	FMD5071-4-DB	①The amplification rate is not less than 1kb/10s, suitable for fastExtraction-free fluorescence quantitative PCR, completion of detection within 30 minutes at the fastest. ②Has good tolerance to inhibitors from blood, swabs, tissue homogenates, etc., with direct addition ratio of whole blood ⩽5%, plasma, serum ⩽30%.	①Suitable for multiplex multi-channel qPCR. ②Suitable for rapid, direct amplification scenarios, with high tolerance to blood-derived samples and fecal samples.

RNA

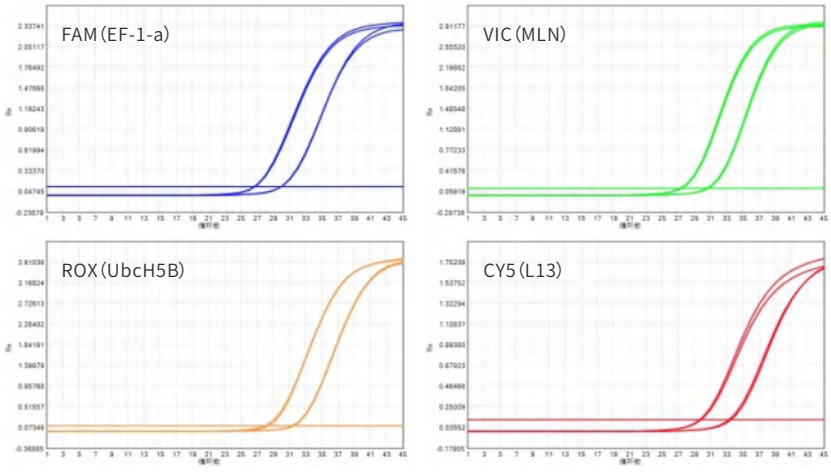
Products	Specification	Catalog No.	Lyo.No.	Features	Application
5×FastAmpli RT Premix-UNG (Probe qRT-PCR)	5×	M5144-TP	FM5144-TP	①Reverse transcriptase 42°C~55°C. ②Antibody modified Taq, 95°C, 30s-1min hot start. ③High detection sensitivity.	①Suitable for multiplex multi-channel qPCR, such as 4-channel detection with 4 targets in each channel. ②Suitable for high-sensitivity amplification of low-concentration RNA templates. ③Suitable for fast amplification.
2×Fast Direct Premix-UNG IV(Probe qPCR)	2×	MD2084-4-DB	FMD5084-4-TP	①Reverse transcriptase 42°C~55°C. ②Antibody modified Taq, 95°C, 30s-1min hot start. ③High detection sensitivity.	①Suitable for multiplex multi-channel qPCR, such as 4-channel detection with 4 targets in each channel. ②Suitable for high-sensitivity amplification of low-concentration RNA templates. ③Suitable for direct amplification.
2×SensiDirect RT Premix-UNG IV(Probe qRT-PCR)	2×	MD2104-X	FMD5104-X	①Reverse transcriptase 42°C~55°C. ②Antibody modified Taq, 95°C, 30s-1min hot start. ③Amplification rate is no less than 1kb/10s, and RNA detection can be completed within 30 minutes at the fastest.	①Suitable for multiplex multi-channel qPCR, such as 4-channel detection with 4 targets in each channel. ②Suitable for high-sensitivity detection such as Mutiplex Respiratory Tests. ③POCT application scenarios.

DNA system fast amplification test example

Catalog number	M2181-4	Detection system	Human Housekeeper Gene Quadruple Detection
Template type	Human genome purification template	Template input amount	25 pg/μL, 250 pg/μL, 2T, 5μL/25μL system
PCR program	Normal program: 50°C 2min; 95°C 5min; 45 Cycles (95°C 10s, 60°C 40s), amplification time: 70min Fast program: 50°C 2min; 95°C 30s; 45 Cycles (95°C 1s, 60°C 8s), amplification time: 25min		
Instrument	SLAN-48S		



• Figure 1 Results of amplification performance test under normal procedures



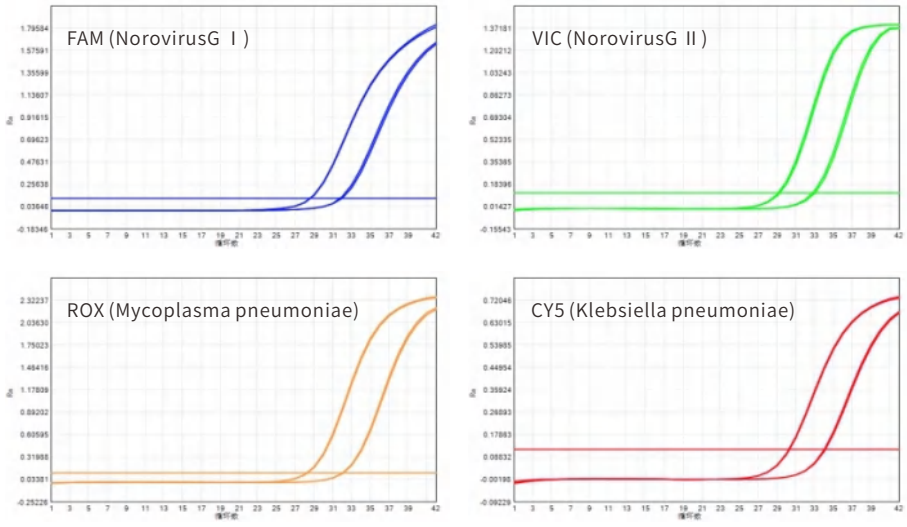
• Figure 2 Results of amplification performance test under fast program

Channel	Template concentration(pg/μL)	General Program (CT Value)	Fast Program (CT Value)
FAM (EF-1-a)	25	29.45	29.98
	250	26.26	26.73
VIC (MLN)	25	30.07	30.57
	250	26.54	27.24
ROX (UbcH5B)	25	31.04	31.42
	250	28.12	28.44
CY5 (L13)	25	29.17	29.36
	250	25.82	25.98

DNA system fast amplification test example

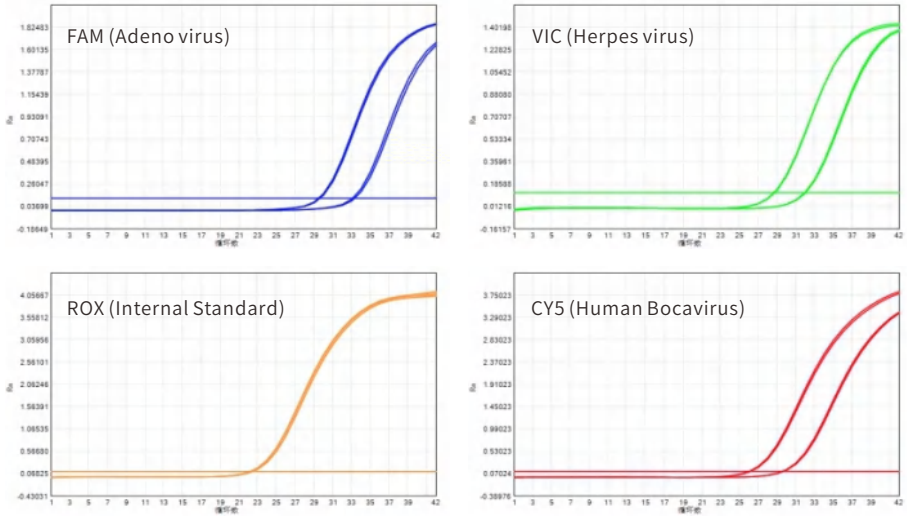
Catalog number	M2181-4	Detection system	Respiratory DNA multiplex detection system
Template type	Outsourced Control Material	Template input amount	25 copies/μL, 250 copies/μL, 2T, 5μL/25μL system
PCR program	Fast program: 50°C 2min; 95°C 30s; 45 Cycles (95°C 1s, 60°C 10s), amplification time: 27min.		
Instrument	SLAN-48S		

A Tube Test Results



• Figure 3 Results of amplification performance test under fast program

B Tube Test Results

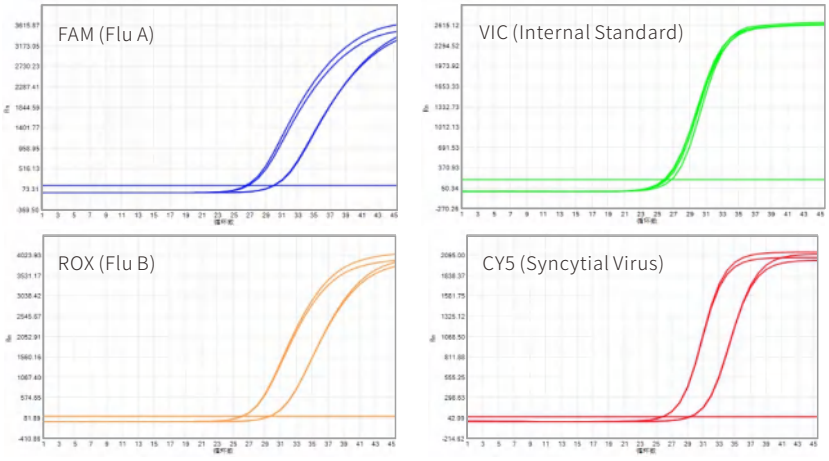


• Figure 4 Results of amplification performance test under fast program

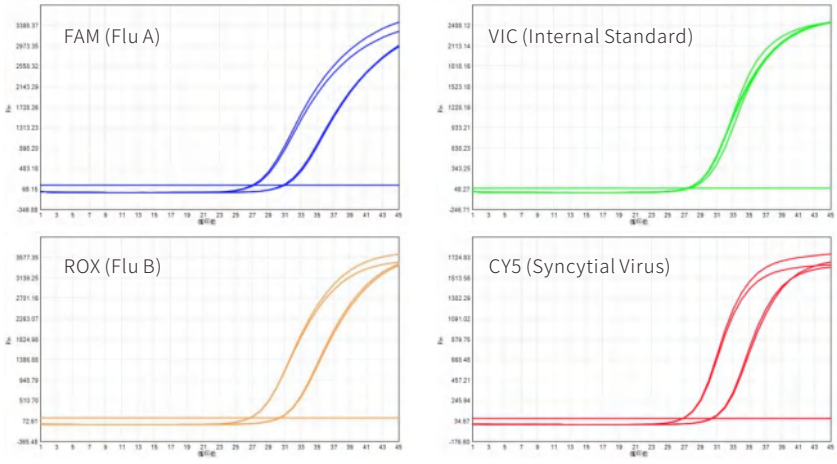
RNA system fast amplification test example

Catalog number	MD2104-X	Detection system	Respiratory RNA multiplex detection system
Template type	Outsourced Control Material	Template input amount	Flu A/Flu B/Syncytial Virus: 50 copies/T, 2T; 500 copies/T, 2T; 5μL/25μL system Parainfluenza Ⅰ/Ⅱ/Ⅲ: 25 copies/T, 2T; 250 copies/T, 2T; 5μL/25μL system COVID-19 ORF/N/E: 6.25 copies/T, 2T; 62.5 copies/T, 2T; 5μL/25μL system
PCR program	Normal program: 50°C 15min; 95°C 1min; 45 Cycles (95°C 15s, 56°C 45s), amplification time: 80min Fast program: 50°C 4min; 95°C 30s; 45 Cycles (95°C 1s, 56°C 10s), amplification time: 29 min		
Instrument	SLAN-48S		

A Tube Test Results



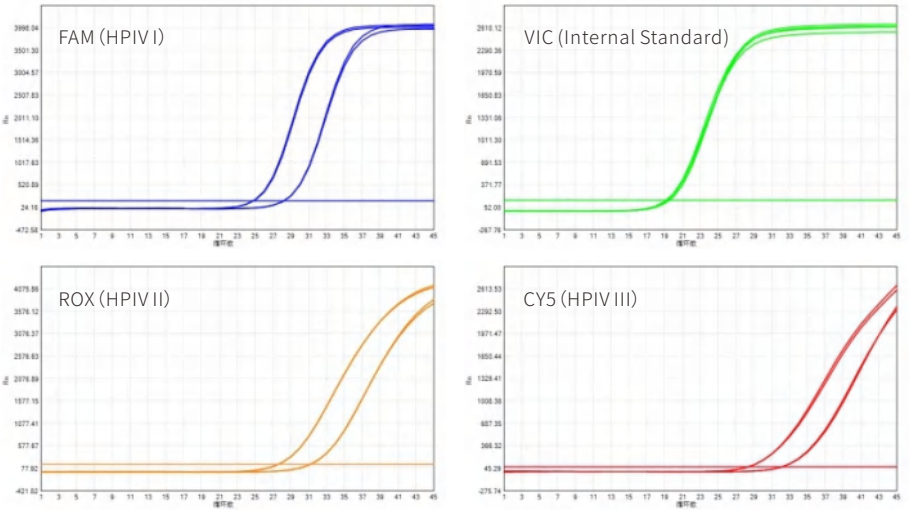
● Figure 1 Results of RNA amplification performance test under normal procedures



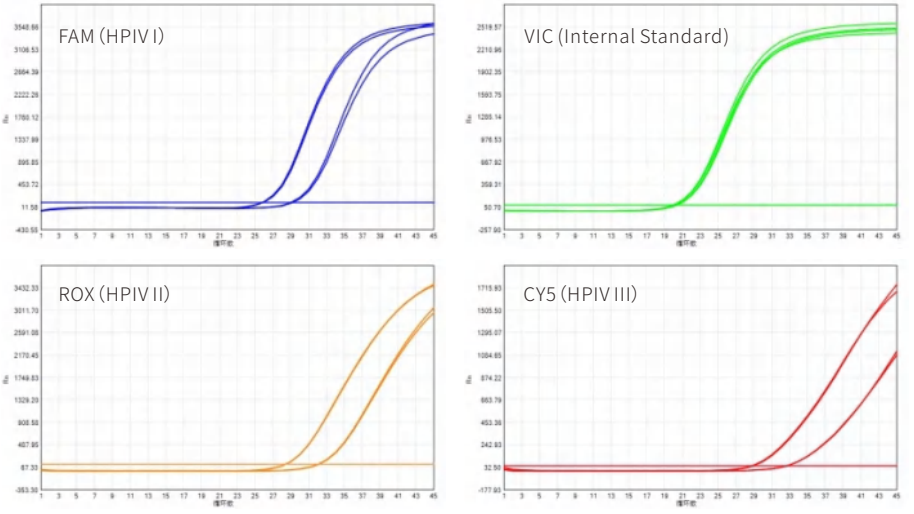
● Figure 2 Results of RNA amplification performance test under fast procedures

Channel	Template concentration(pg/μL)	General Program (CT Value)	Fast Program (CT Value)
FAM (Flu A)	50	29.97	30.86
	500	26.64	27.11
VIC (Internal Standard)	50	26.29	27.05
	500	26.30	27.29
ROX (Flu B)	50	29.63	30.33
	500	26.15	26.70
CY5 (Syncytial Virus)	50	29.32	30.35
	500	25.85	26.82

B Tube Test Results



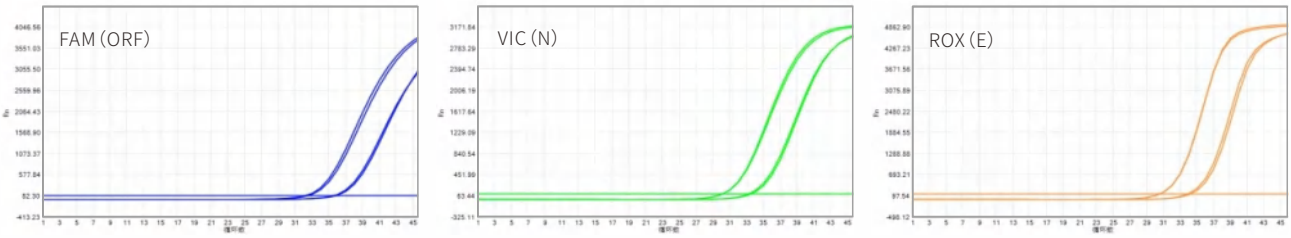
● Figure 3 Results of RNA amplification performance test under normal procedures



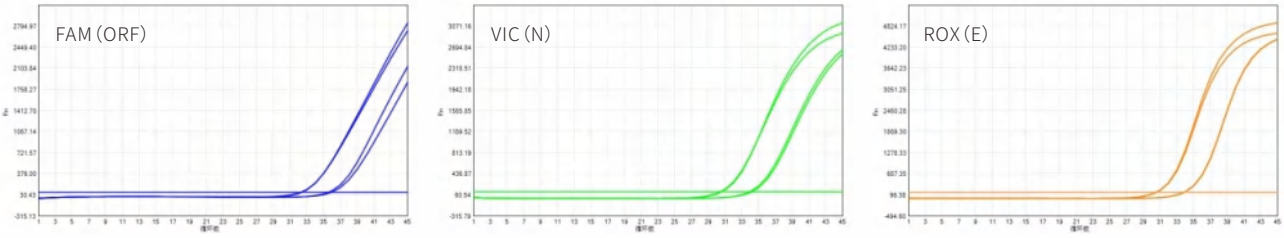
● Figure 4 Results of RNA amplification performance test under fast procedures

Channel	Template concentration (pg/μL)	General Program (CT Value)	Fast Program (CT Value)
FAM (HPIV I)	25	28.21	29.04
	250	24.92	25.80
VIC (Internal Standard)	25	19.63	20.00
	250	19.51	20.31
ROX (HPIV II)	25	31.36	32.20
	250	27.57	28.46
CY5 (HPIV III)	25	32.12	32.63
	250	28.34	28.80

C Tube Test Results



● Figure 5 Results of RNA amplification performance test under normal procedures



● Figure 6 Results of RNA amplification performance test under fast procedures

Channel	Template concentration (pg/μL)	General Program (CT Value)	Fast Program (CT Value)
FAM (ORF)	6.25	35.70	35.73
	62.50	32.34	32.33
VIC (N)	6.25	33.40	34.06
	62.50	30.15	30.53
ROX (E)	6.25	34.09	33.87
	62.50	30.56	30.54

Single-tube Pre-mixed Applicable Product

DNA Single Tube

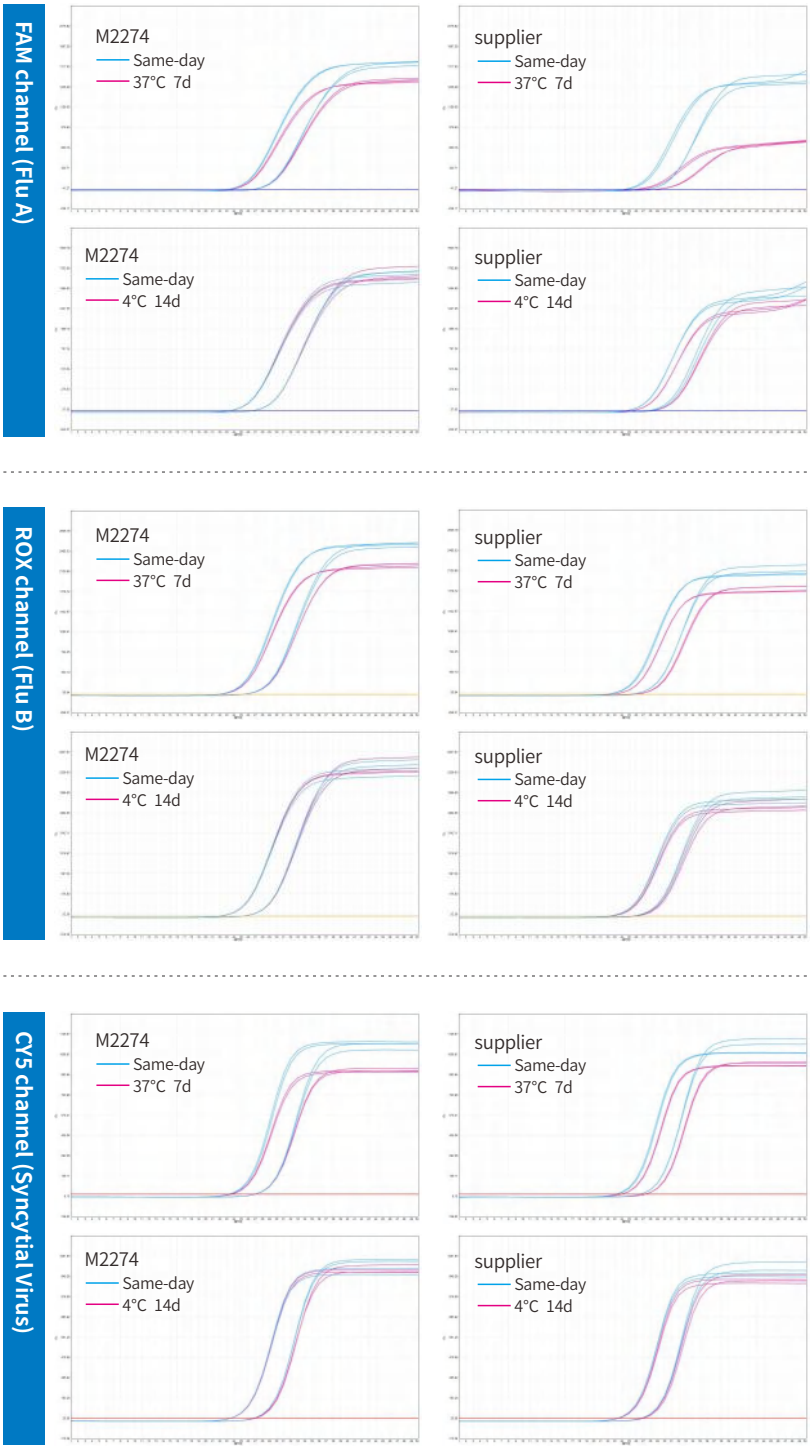
Products	Specification	Catalog No.	Lyo.No.	Features	Application
2×Superstart Premix plus-UNG(Probe qPCR)	2×	M2071	FM5071 -DB	①Antibody modification, 95°C, 30s-1min heat start. ②Supports primers, probes, and reagents mixed in one tube, maintaining good stability.	①Human and animal associated DNA viruses detection. ②POCT application scenarios.
2× Fast Diret Premix -UNG (Probe qPCR)	2×	MD2071	FMD5071 -DB	①Antibody modification, 95°C, 30s-1min heat activation. ②Supports primers, probes, and reagents mixed in one tube, maintaining good stability. ③Has good tolerance to inhibitors from blood, swabs, tissue homogenates, etc., with direct addition ratio of whole blood ⩽5%, plasma, serum ⩽30%.	①Human and animal associated DNA viruses detection. ②POCT application scenarios.
2×FastAmpli Premix -UNG IV (Probe qPCR)	2×	M2181 -4-X	FM2181 -4-X	①Antibody modification, 95°C, 30s-1min heat activation. ②Supports primers, probes, and reagents mixed in one tube, maintaining good stability. ③The amplification rate is not less than 1kb/10s, suitable for fast fluorescence quantitative PCR, completion of detection within 30 minutes at the fastest.	①Human and animal associated DNA viruses detection. ②POCT application scenarios.

RNA Single Tube

Products	Specification	Catalog No.	Lyo.No.	Features	Application
2×Neoscript RT Premix OT-UNG (Probe qRT-PCR)	2×	M2274	/	①The reverse transcription temperature range is 50-55 °C. ②Supports primers, probes, and reagents mixed in one tube. ③Strong applicability, suitable for all kinds of high sensitivity detection.	①Human and animal associated DNA viruses detection. ②High sensitivity detection of COVID-19、Influenza Virus、Mutiplex Respiratory Tests. ③POCT application scenarios.

Full-component single-tube acceleration including primers and probes

Catalog number	M2274	Detection system	Respiratory tract detection system
Template type	Respiratory tract transcription template	Template input amount	200 cps/T, 2T; 2000 cps/T, 2T; 5μL/25μL system
PCR program	50°C 15min; 95°C 1min; 50 cycles (95°C 15s, 56°C 45s)		
Instrument	SLAN-96P		



● Figure 1 Stability results of single tube test at 37°C for 7 days and 4°C for 14 days

Direct Amplification Applicable Products

DNA

Products	Specification	Catalog No.	Lyo.No.	Features	Application
2×Superstart Direct Premix-UNG (Probe qPCR)	2×	MD2011	FMD2011	①Anti-inhibition DNA polymerase modified by antibody, 95°C, 30s-1min hot start. ②Suitable for DNA extraction-free direct fluorescence quantitative PCR detection.	①Detection of DNA viruses related to humans and animals. ②Genomic DNA amplification and typing detection.
2×Hyperstart® Direct Premix-UNG (Probe qPCR)	2×	MD2021	FMD2021	①Anti-inhibition DNA polymerase modified by aptamer, reversible hot start above 60°C. ②Suitable for DNA extraction-free direct fluorescence quantitative PCR detection.	
2×Fast Direct Premix -UNG (Probe qPCR)	2×	MD2071	FMD5071 -DB	①Has good tolerance to inhibitors from blood, swabs, tissue homogenates, etc., with direct addition ratio of whole blood ⩽5%, plasma, serum ⩽30%. ②The amplification rate is not less than 1kb/10s, suitable for rapid extraction-free fluorescence quantitative PCR, completion of detection within 30 minutes at the fastest.	
2×SensiDirect® Premix -UNG (Probe qPCR)	2×	MD2091	FMD5091 -DB	①Has good tolerance to inhibitors from serum, saliva, etc., with direct addition ratio of saliva ⩽2μL, serum ⩽30%. ②The amplification rate is not less than 1kb/10s, suitable for rapid extraction-free fluorescence quantitative PCR, completion of detection within 30 minutes at the fastest.	
2×Stool Direct Premix -UNG (Probe qPCR)	2×	MD2111 -DB	FMD2111 -DB	①Has good tolerance to inhibitors from stool and anal swabs, with direct addition ratio of stool ⩽0.5%. ②Suitable for direct fluorescence quantitative PCR detection of DNA from stool samples without extraction.	

RNA

Products	Specification	Catalog No.	Lyo.No.	Features	Application
2×Neoscript RT Premix OT-UNG (Probe qRT-PCR)	2×	MD2084 -4-DB	FMD5084 -4-TP	①Has good tolerance to inhibitors from blood, swabs, tissue homogenates, etc., with direct addition ratio of whole blood ⩽5%, plasma, serum ⩽30%. ②Suitable for rapid extraction-free fluorescence quantitative RT PCR, completion of detection within 40 minutes at the fastest.	①Detection of DNA viruses related to humans and animals. ②Extraction-free direct fast amplification detection.
2×SensiDirect® RT Premix-UNG IV (Probe qRT-PCR)	2×	MD2104 -4-DB	FMD5104 -4-TP	①Has good tolerance to inhibitors from serum, saliva, etc., with direct addition ratio of saliva ⩽2μL, serum ⩽30%. ②Suitable for rapid extraction-free fluorescence quantitative RT PCR, completion of detection within 40 minutes at the fastest.	
2×Stool Direct RT Premix-UNG (Probe qRT-PCR)	2×	MD2124 -DB	FMD5124 -TP	①Suitable for high-sensitivity amplification of templates containing fecal inhibitor extraction and direct amplification detection of fecal samples. ②Provide lyophilized/pre-lyophilized reagents for fecal direct amplification system, solving the market demand for fecal direct amplification detection in an all-round one-stop manner.	

Product Advantages

Extraction-free procedure, User-friendly operation

No heating, no extraction, ready to mix and use.

Broad applicability, Strong compatibility

Compatible with conventional fluorescence quantitative PCR instruments on the market.

Customizable

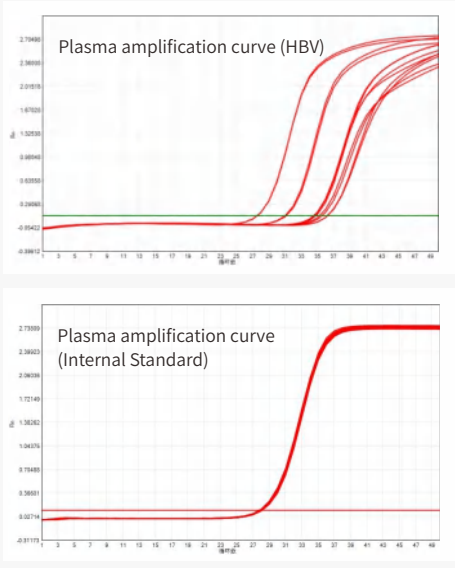
Available in various forms and customized specifications.

DNA direct amplification reagent test

Catalog number	MD2011
Detection system	HBV detection system/human genome DNA detection system
Template type	HBV positive plasma, whole blood, oral swab
PCR program	50°C 2min; 95°C 5min; 50 Cycles (95°C 10s, 55°C 40s)

Direct amplification of blood plasma

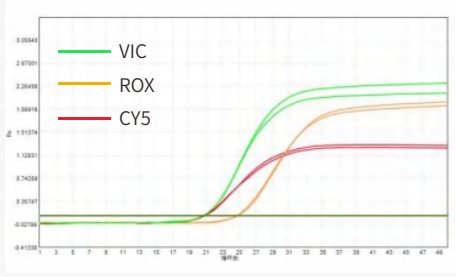
HBV-positive plasma (at concentrations of 48, 96, 1.6×10^3, and 1.6×10^4 IU/mL) was directly added to the reaction mixture at 25% volume ratio (e.g., 6.25 μL of HBV-positive plasma in a 25 μL reaction system) without prior pretreatment for amplification.



● Figure 1 Results of direct amplification of HBV positive plasma

Direct amplification of whole blood

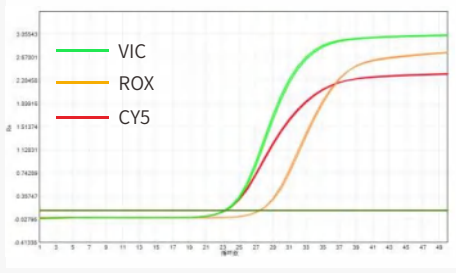
Whole blood: Human whole blood was directly introduced into the reaction mixture at 5% volumetric loading.



● Figure 2 Results of direct amplification of whole blood.

Direct amplification of oral swab

Oral swab: After the swab is brushed against the inner wall of the oral cavity about 10 times, the swab is washed with 1000μL H_2O, and then centrifuged at 2500rpm for 10min, the supernatant is discarded, and the remaining about 100μL is blown to mix, and 10μL of the sample is added to the reaction system for amplification.

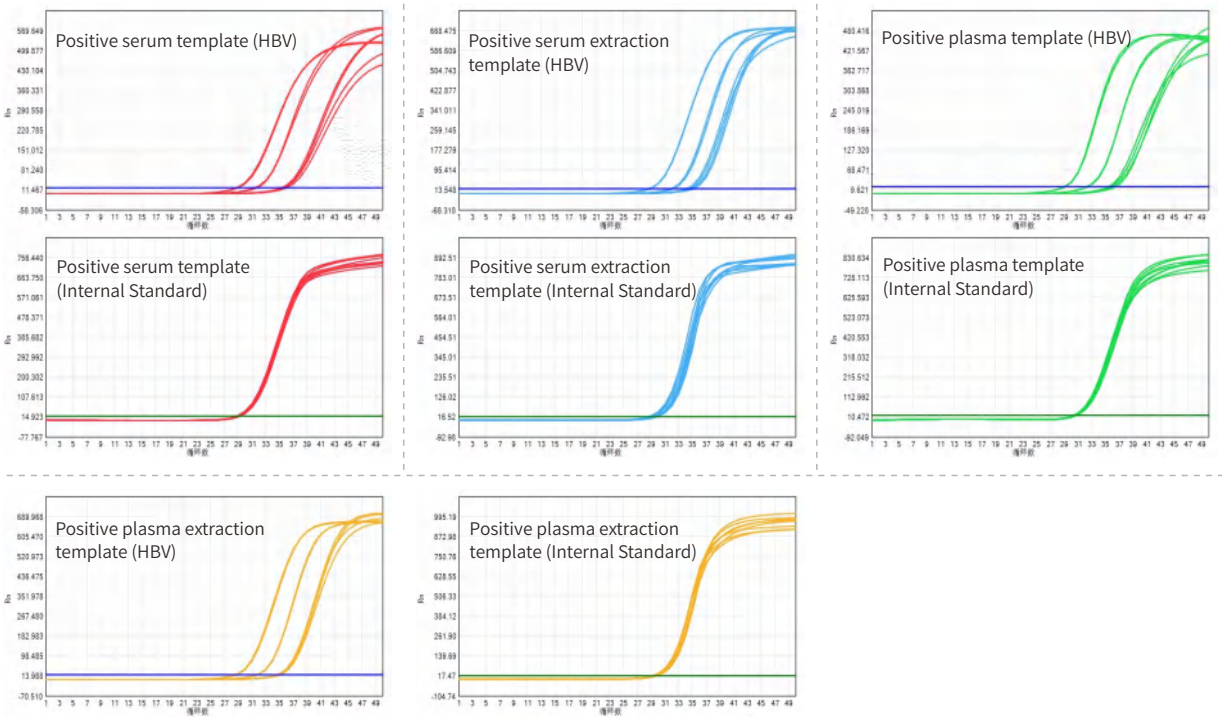


● Figure 3 Results of direct amplification of oral swab.

Comparative test of direct amplification of biological samples and template amplification after extraction and purification

Catalog number	MD2091	Detection system	HBV detection system
Template type	HBV positive serum, HBV positive plasma, HBV positive serum extraction template, HBV positive plasma extraction template		
PCR program	50°C 2min; 95°C 5min; 50 Cycles (95°C 10s, 55°C 40s)		

Sample processing: Dilute HBV positive plasma with negative serum and negative plasma to 1.6×10^4 IU/mL respectively.
HBV positive serum template: Directly add sample after gradient dilution with negative serum, and the sample volume is 5μL for every 25μL.
HBV positive plasma template: Directly add sample after gradient dilution with negative plasma, and the sample volume is 5μL for every 25μL.
HBV positive serum extraction template: Take 80μL 1.6×10^4 IU/mL positive serum and mix it with 120μL negative serum, extract it with magnetic bead extraction kit, and elute it with 80μL.
HBV positive plasma extraction template: Take 80μL 1.6×10^4 IU/mL positive plasma and mix it with 120μL negative plasma, extract it with magnetic bead extraction kit, and elute it with 80μL.



● Figure 4 Comparison results of HBV plasma serum sample and purified template amplification

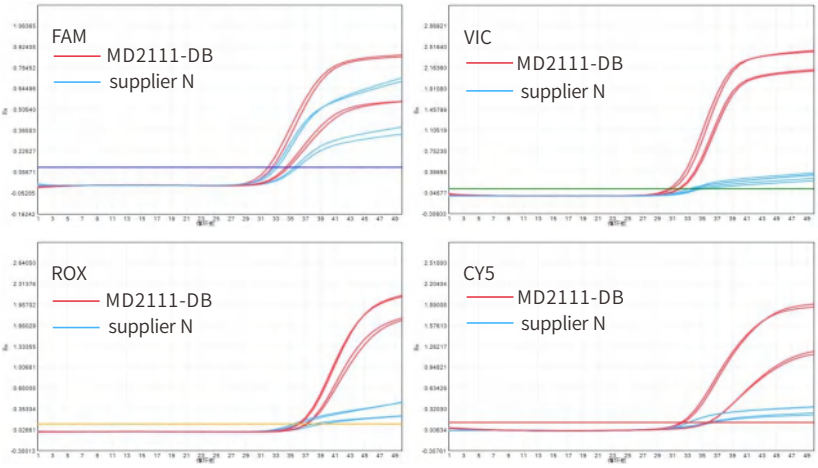
	Equivalent concentration (IU/mL)	Average Ct value		Equivalent concentration (IU/mL)	Average Ct value
HBV positive serum direct amplification	1.6×60	35.57	HBV positive plasma direct amplification	1.6×60	35.84
	1.6×10^3	31.53		1.6×10^3	32.31
	1.6×10^4	28.82		1.6×10^4	29.08
HBV positive serum extraction	1.6×60	34.65	HBV positive plasma extraction	1.6×60	34.87
	1.6×10^3	32.05		1.6×10^3	31.71
	1.6×10^4	28.79		1.6×10^4	28.60

Conclusion: Biori MD2091 direct amplification reagent can be used for direct amplification of plasma and serum samples.

Direct amplification of stool background samples

Catalog number	MD2111-DB	Detection system	Human genomic DNA quadruple detection system
Template type	Human genome in stool samples	PCR program	50°C 2min; 95°C 5min; 50 Cycles (95°C 10s, 55°C 40s)

stool sample processing: Take 0.2g of stool sample and add it to 1mL TE Buffer, mix thoroughly and liquefy; take the supernatant after instantaneous centrifugation to obtain a 20% fecal sample, and dilute it with sterile water to obtain 1% and 2.5% stool samples; use the above two concentrations of stool samples to dilute the human genome to obtain a human genome template with a concentration of 0.0125 ng/μL; then add 5μL of sample directly to the 20μL reaction system for amplification.



● Figure 5 Direct amplification results of stool samples

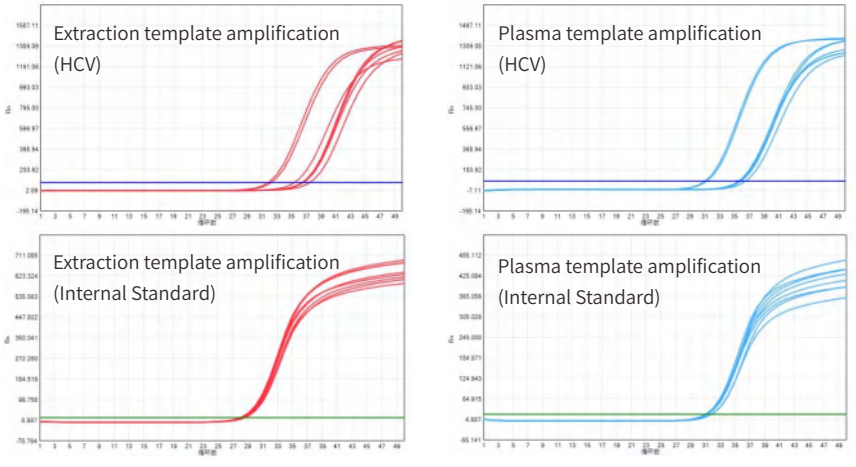
RNA direct amplification test - Direct amplification of plasma

Catalog number	MD2104-4	PCR program	50°C 15min; 95°C 1min; 50 Cycles (95°C 15s, 56°C 45s)
Template type	HCV plasma (sample volume 20%), HCV plasma magnetic bead extraction template		

HCV positive plasma: 1300 IU/mL, 6T; 2.61×10^4 IU/mL, 2T. HCV positive plasma of each concentration does not need to be pretreated and is directly added to the reaction system at 20% loading for amplification.

HCV positive plasma extraction template: Take 200μL HCV positive plasma (130 IU/mL, 6T; 2.61×10^3 IU/mL, 2T) for extraction and elute with 85μL 1×TE Buffer. Template loading 40%.

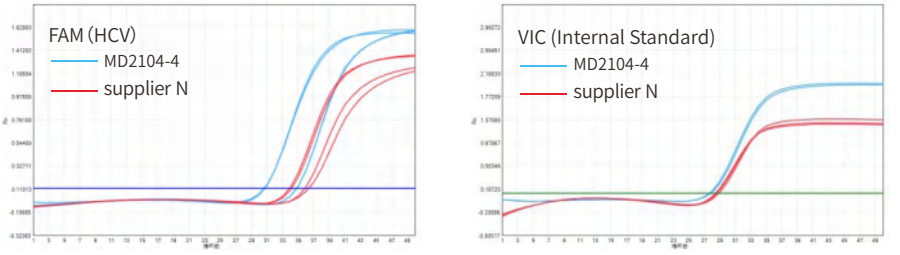
Template type	Sample concentration(IU/mL)	Equivalent template concentration (IU/T)	Average Ct value
HCV purification template	2610	61.40	31.51
	130	3.06	35.97
HCV plasma template	26100	130.50	30.61
	1300	6.50	35.34



● Figure 6 Comparison of amplification results of HCV positive plasma and purified template

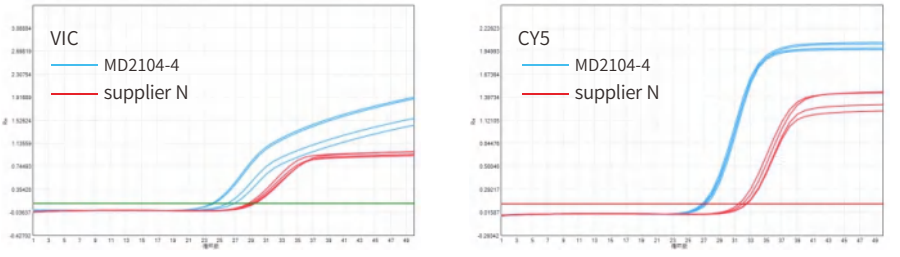
Comparison with similar products on the market-Direct amplification of plasma and saliva

HCV-positive plasma: 1×10^4 IU/mL, 2T; 1×10^5 IU/mL, 2T. HCV-positive plasma of each concentration does not need pretreatment and is directly added to the reaction system at a 20% loading volume for amplification.



● Figure 7 Comparison of amplification results with competitor products in HCV positive samples

Saliva (human total RNA amplification): 10%, 2T; 20%, 2T. Saliva does not need to be processed and can be directly added to the reaction system for amplification.

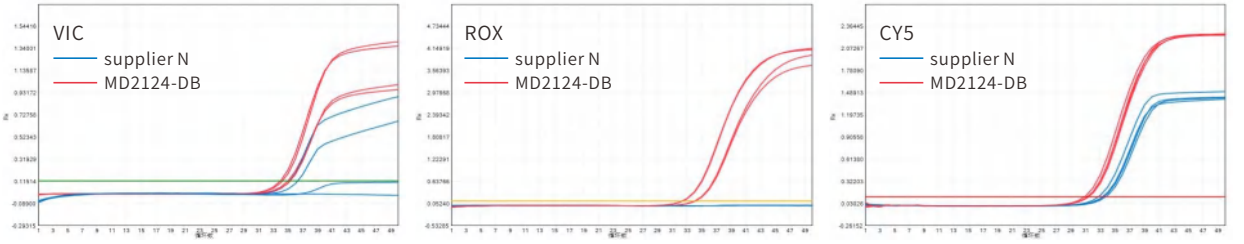


● Figure 8 Comparison of amplification results in saliva samples with those of competitors' products

RNA direct amplification test - stool

Catalog number	MD2124-DB	PCR program	50°C 15min; 95°C 1min; 50 Cycles (95°C 15s, 56°C 45s)
Template type	Human housekeeping gene RNA triple		

Fecal sample processing: Take 0.2g of stool sample and add it to 1mL TE Buffer, mix thoroughly and liquefy; take the supernatant after instantaneous centrifugation to obtain 20% stool sample, dilute with sterile water to obtain 0.5% and 1% stool samples; use the above two concentrations of stool samples to dilute the human total RNA template to obtain a human total RNA template with a concentration of 4.64pg/μL; then add 20μL directly to the reaction system with a sample volume of 5μL for amplification.



⚠ Note: In the above amplification graphs, the amplification Ct values of the VIC and ROX channels increase with the increase of stool samples, and the amplification Rn value decreases with the increase of stool sample.

● Figure 9 Comparison of amplification results in fecal samples with those of competitors' products

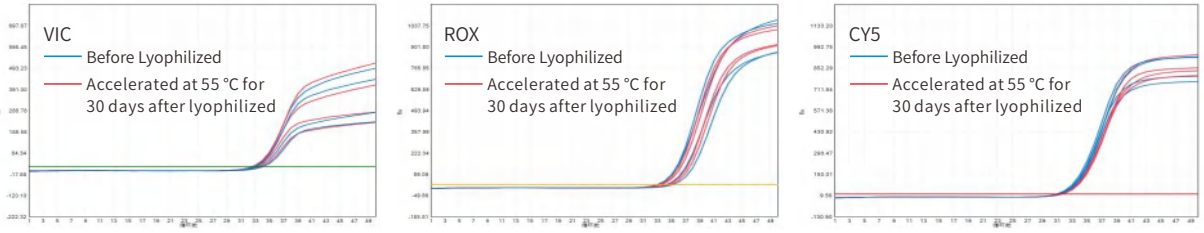
Conclusion: Biori MD2124 has stronger tolerance to stool samples than similar products.

Accelerated Stability Testing of Lyophilizable Stool RT Direct Amplification Formulation (55°C for 30 Days)

Template: Human total RNA from stool sample background

● Figure 1 Morphology of Stool Direct Amplification System after Lyophilized.

● Figure 2 Morphology of Stool Direct Amplification System after Lyophilized at 55 °C Accelerated for 30 Days.



● Figure 10. Comparison of Amplification Between Lyophilized Stool Direct Amplification Reagents Accelerated at 55°C for 30 Days and the Pre-Lyophilization Product

Conclusion:Accelerated stability test of Biori FMD5124 after lyophilized at 55 °C for 30 days was qualified.

Applicable products for Multiplex High-Resolution Melting Curve Analysis

DNA

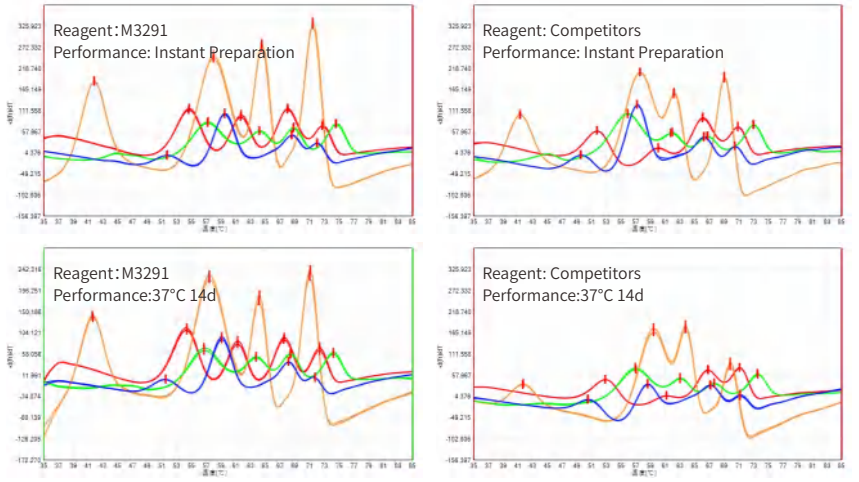
Products	Specification	Catalog No.	Lyo.No.	Features	Application
2×FastAmpli Premix-UNG IV(Probe qPCR)	2×	M2181-4	FM2181-4	Adopting an optimized reaction formula that combines amplification efficiency and reaction specificity.	Probe based melting curve genotyping detection, eg: HPV genotyping detection.
3×SensiMelt Multiplex Premix-UNG (Probe qPCR)	3×	M3291	FM0301	①Has polymerase activity but no exonuclease activity. ②Suitable for asymmetric PCR amplification technology based on Taqman probes. ③Using highly active amplifying enzymes, suitable for multiplex amplification.	①Multi pathogen detection. ②Reproductive genetic detection. ③Medication guidance, etc.

RNA

Products	Specification	Catalog No.	Lyo.No.	Features	Application
8×Neoscript® RT Multi Premix-UNG (Probe qRT-PCR)	8×	M8254-TP	FM8254-TP	①Multiplex One Step Reverse Transcription Quantitative Real-Time PCR. ②Suitable for high-sensitivity amplification of low concentration RNA templates.	Probe based melting curve genotyping detection, eg: respiratory virus multiplex detection.

Example of Asymmetric Amplification Melting Curve Amplification Test

Catalog number	M3291	Detection system	16-Plex HPV target detection system
Template type	HPV plasmid	Template input amount	1×10^{3}copies/μL, 2T, 10μL/25μL system
PCR program	50°C 2min; 95°C 1min; 50 cycles (95°C 10s, 52°C 40s, 72°C 30s); 95°C 40s; 40°C 10min; (35°C-85°C, 0.06°C/s)		
Template type	SLAN-96P		



● Figure 1. M3291 vs. Commercial reagent performance in 16-Plex HPV target detection system

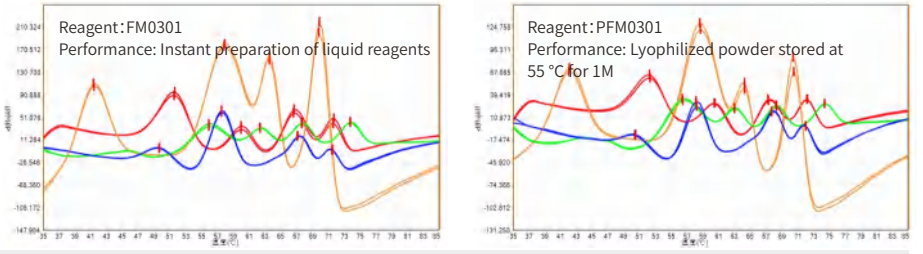
Target Specifications in 16-Plex HPV Multicolor Melting Curve Analysis

Channel	Tm1(Tm value)		Tm2(Tm value)		Tm3(Tm value)		Tm4(Tm value)	
FAM Channel	HPV33	51.30	HPV16	58.92	HPV31	67.51	HPV18	71.28
VIC Channel	HPV45	57.79	HPV39	63.31	HPV35	67.74	HPV51	73.86
ROX Channel	HPV58	43.52	HPV52	60.23	HPV56	64.64	HPV59	69.96
CY5 Channel	HPV73	53.21	HPV68	61.14	HPV82	66.83	HPV26	70.96

Conclusion: 1. In the 16-Plex HPV detection system, the melting curve peak shape of Biori M3291 is better, and the Rn value is higher than that of the control reagent;
2. The Biori M3291 reagent was accelerated at 37 °C for 14 days and showed stable performance, while the fluorescence signal of the melting curve peak decreased significantly after the control reagent was accelerated.

Example of Asymmetric Amplification Melting Curve Amplification Test

Catalog number	FM0301	Detection system	16-Plex HPV target detection system
Template type	HPV plasmid	Template input amount	1×10^{3}copies/μL, 2T, 5μL/25μL system
PCR program	50°C 2min; 95°C 1min; 50 cycles (95°C 10s, 52°C 40s, 72°C 30s); 95°C 40s; 40°C 10min; (35°C-85°C, 0.06°C/s)		
Template type	SLAN-96P		



● Figure 2. Stability evaluation of FM0301 after Lyophilized

Conclusion:

After preparing Biori FM0301 as Lyophilized powder and placing it at 55 °C for 1M, the Rn values of certain targets slightly decreased, but the overall stability was basically maintained.

Applicable Products for Methylation Detection

Methylation

Products	Specification	Catalog No.	Lyo.No.	Features	Application
Sample preprocessing Kit for Methylation Detection	/	AS33	/	①High sensitivity, compatible with genomic DNA input levels of 100pg-1 μg. ②High recovery rate, with a recovery rate of over 80%. ③High conversion efficiency, with an efficiency of over 99% for converting cytosine to uracil. ④The operation time is short and can be completed within 90 minutes.	Multi-Cancer Early Detection, eg: Septin9、SDC2 gene testing.

Amplification detection reagent

Products	Specification	Catalog No.	Lyo.No.	Features	Application
2×Robustart Premix (Probe qPCR)	2×	M216	FM516-DB	①Antibody modification, 95 °C, 30-1min hot start. ②High sensitivity and strong specificity. ③Strong applicability to various types of testing.	Multi-Cancer Early Detection, eg: Septin9、SDC2 gene testing.
2×Superstart Premix plus (Probe qPCR)	2×	M207	FM507-DB	①Antibody modification, 95 °C, 30-1min hot start. ②High sensitivity and strong specificity. ③Strong applicability to various types of testing.	①Quantitative PCR. ②Multiple PCR. ③Genotyping testing.

Product Advantages

Ultra-low DNA residue

Compatible with genomic DNA input levels of 100pg-1 μg.

Widely applicability, Strong compatibility

The recovery rate is over 80%.

High sensitivity and adaptability

The efficiency of converting cytosine to uracil is greater than 99%.

Customizable

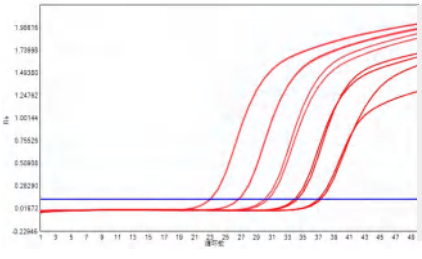
Can be completed within 90 minutes.

Sensitivity

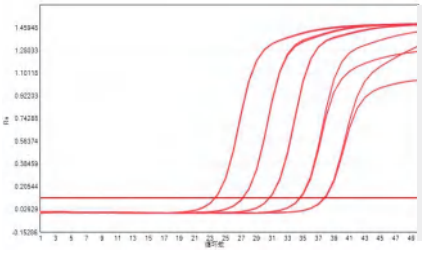
Different levels of human methylation standards (1000, 100, 10, 1, 0.1ng) were transformed using biori transformation solution, and the resulting nucleic acids were detected by qPCR using methylation specificity primer probes. The results showed that the biori conversion solution can detect sample input levels of 100 pg-1 μg.

Addition Amount (ng)	SDC2	ACTB
1000	23.03	23.63
100	26.67	27.23
10	30.26	30.68
1	34.10	34.63
0.1	37.16	37.82

● Table 1. Amplification Ct values of M216-treated templates across different concentration gradients



● Figure 1
Detection results after gradient input conversion of standard samples (SDC2)



● Figure 2
Detection results after gradient input conversion of standard samples (ACTB internal standard)

Rate of Recovery

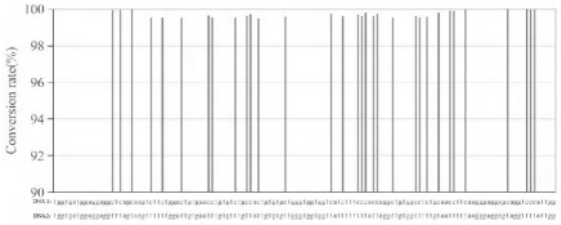
The human methylation standard with a dosage of 1000ng was transformed using Biori conversion solution, and the resulting nucleic acid was measured for concentration using NanoDrop. The results showed that the recovery rate of Biori conversion solution was greater than 80%.

Addition Amount (ng)	Average recycling amount (ng)	Rate of Recovery (%)
1000	801.66	80.17

● Table 2 Conversion Liquid Recovery Rate.

Conversion Efficiency

The human non methylated standard was transformed using Biori transformation solution, and the resulting nucleic acid was amplified using methylation specific primers. After gel recovery of the amplified PCR products, library construction and second-generation sequencing were carried out. The results showed that the conversion rate of Biori biological transformation solution was ⩾ 99.5%.



● Figure 3 Conversion rate of template after DNA bisulfite conversion solution conversion

SNP Detection Applicable Products

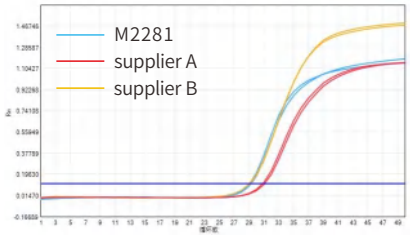
Products	Specification	Catalog No.	Lyo.No.	Features	Application
2×Superstart Direct Premix ARMS-UNG (Probe qPCR)	2×	MD2031-DB	FMD5031-DB	①High tolerance to inhibitors from throat swabs, saliva, anticoagulated whole blood, plasma, serum, and urine sources. ②Suitable for detecting mutation sites with higher specificity requirements. Especially suitable for ARMS PCR fluorescence quantitative detection.	ARMS typing detection can be used for whole blood direct amplification typing (⩽5% whole blood sample volume).
2×Robustart ARMS Gene-typing Premix-UNG (Probe qPCR)	2×	M2281	FM5281-DB	①Combining efficient amplification performance and 3 'mismatch recognition ability, suitable for purifying templates. ②Widely applicable and capable of detecting various gene mutations. ③Easy to operate, no need for tedious optimization.	①Individualized molecular testing, gene mutation and SNP site detection for tumors. ②Genetic disease screening and disease susceptibility gene testing. ③Breeding in agriculture and animal husbandry, inspection and quarantine of animals and plants.
2×Robustart Premix Omni III (Probe qPCR)	2×	M216-3	FM516-3	①Antibody modification, 95 °C, 30-1min hot start. ②Has good applicability and is suitable for amplification of high GC templates (50%~80%). ③Widely applicable and capable of detecting multiple gene mutations.	Applicable to MGB genotyping product direction

ARMS Detection Example

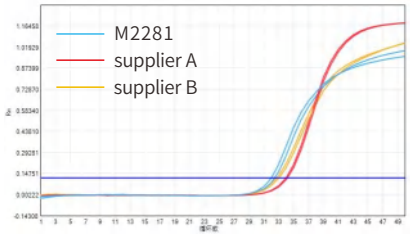
Catalog number	M2281	Detection system	CYP2C19 detection system, 25μL
Template type	Human genome template	PCR program	50°C 2min; 95°C 3min; 50 Cycles (95°C 15s, 60°C 45s)

Methods : Different amplification reagents were used to separately amplify human genome templates with CYP2C19 wild-type probe (WT pbmix) and mutant probe (MT pbmix) to expand CYP2C19 gene polymorphism. CYP2C19 * 2 (ROX channel, rs4244285, c.681G > A), CYP2C19 * 3 (VIC channel, rs4986893, c.636G > A) and CYP2C19 * 17 (FAM channel, rs12248560, c.-806C > T) were included. The human genome template CYP2C19 * 2 was heterozygous, CYP2C19 * 3 was wild type, and CYP2C19 * 17 was heterozygous.

FAM; CYP2C19*17, c.-806C>T, CT; WT pbmix

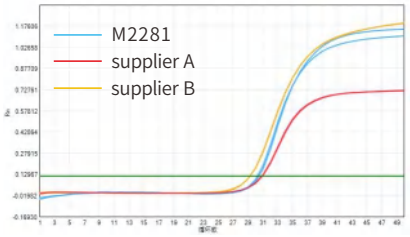


FAM; CYP2C19*17, c.-806C>T, CT; MT pbmix

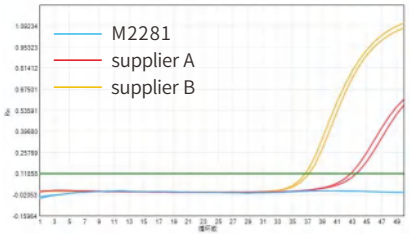


- Fig.1 Detection results of CYP2C19*17 locus (heterozygous)

VIC; CYP2C19*3, c.636G>A, GG; WT pbmix

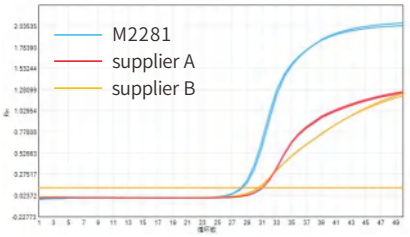


VIC; CYP2C19*3, c.636G>A, GG; MT pbmix

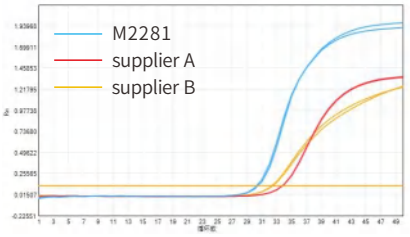


- Fig.2 Detection results of CYP2C19*3 locus (wild type)

ROX; CYP2C19*2, c.681G>A, GA; WT pbmix



ROX; CYP2C19*2, c.681G>A, GA; MT pbmix

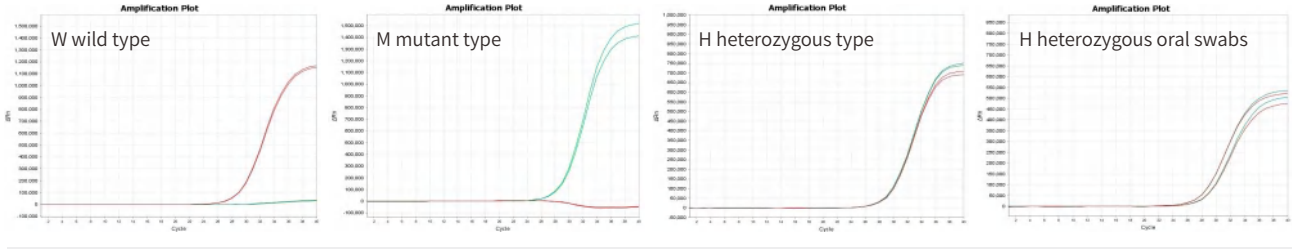


- Figure 3 Detection results of CYP2C19*2 locus (heterozygous type)

Detection of CYP2C19 gene SNP genotyping

Catalog number	M216-3	Detection system	CYP2C20 genotyping detection system
Template type	Plasmids (W wild type, M mutant type, H heterozygous type) ; oral swab (human source).	Template input amount	1ng/μL, 2T, 5μL/26μL system
PCR program	95°C 5min; 50 cycles (95°C 8s, 55°C 35s)	Instrument	Q5

Methods : Different types of DNA samples and oral swab samples were separately amplified using CYP2C19 detection system (WT + MT pbmix), in which FAM channel (red) labeled wild-type probe and ROX channel (green) labeled mutant probe. The results showed that the M216-3 system could obtain good amplification results for different genotyping samples, and could significantly distinguish mutant, wild type and heterozygous type.



- Figure 1 Detection results of CY2C19 genotyping

Electrophoresis Applicable Products

DNA

Products	Specification	Catalog No.	Lyo.No.	Features	Application
2×Robustart Multi Premix	2×	PM201	/	①DNA multiplex amplification for end-point PCR. ②The GC content of the template was 40-80 %.	①High GC content target area. ②End point method. ③Electrophoresis detection.
2×Novel GC Rich Premix	2×	PM202	/	①It is suitable for amplification of high GC template. ②The GC content can reach 40-85 %.	
2×HamdyAmp PCR Premix	2×	PM203	/	suitable for rapid PCR, and the amplification rate is 1Kb / 10sec.	
2×Blood Direct Premix	2×	MD205	/	①It has good tolerance to blood-borne inhibitors and is suitable for extraction-free endpoint PCR. ②The whole blood of different anticoagulants can be directly added and amplified, and the direct addition amount of human whole blood can reach 45 %. ③Suitable for template amplification with GC content of 40-80 %. For the template with GC content (60-80 %), the whole blood volume is required to be increased by 4-10 %, and the amplification length is within 1.2 kb.	①Extraction-free amplification of blood samples. ②Gene chip. ③Reverse dot blot hybridization.
2×Blood Direct Multi Premix	2×	M216-3	/		

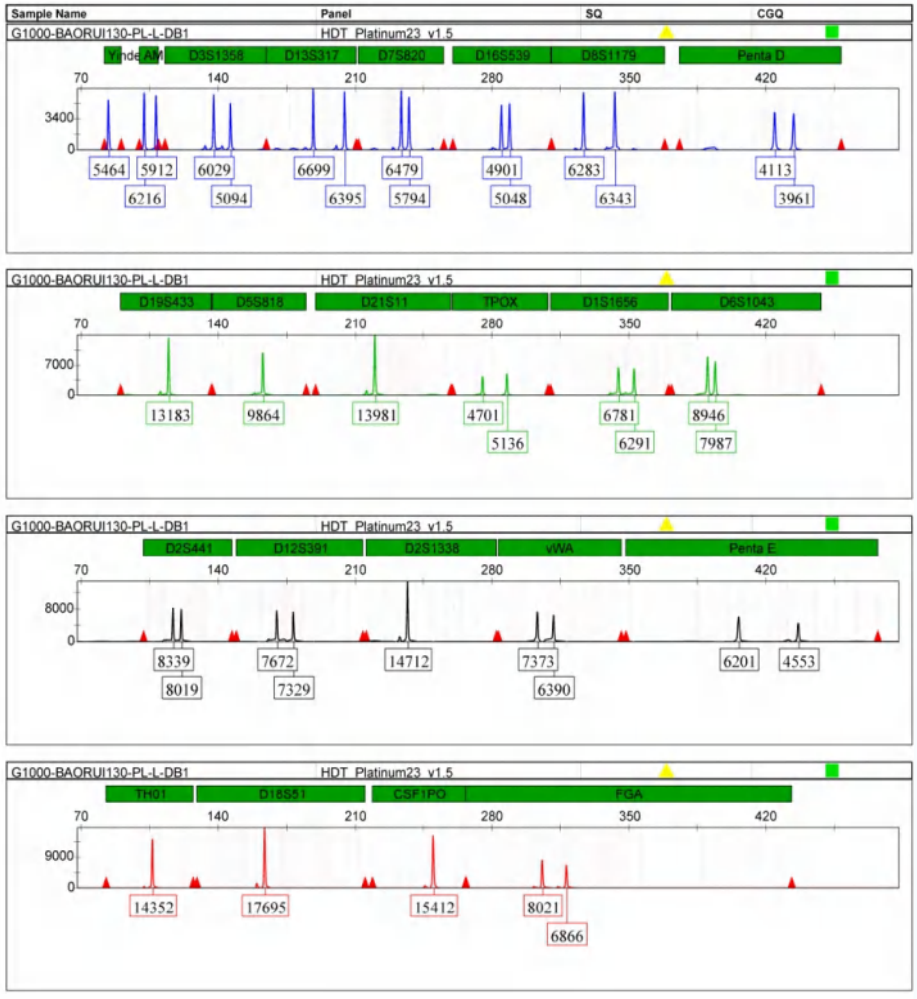
STR Multiple Applicable Products

DNA

Products	Specification	Catalog No.	Lyo.No.	Features	Application
2×STR Premix Fast-130	2×	STR201-130	FSTR201-130	①Suitable for forensic STR multiplex amplification detection. ②Compatible with rapid amplification program, amplification of multiple fragments balanced, high specificity and sensitivity. ③Has good tolerance to blood-derived inhibitors and is suitable for direct amplification of whole blood and blood cards without extraction.	
5×STR Premix T13	5×	STR501-T13	FSTR501-T13	①Suitable for forensic STR multiplex amplification detection. ②Has good tolerance to blood-derived inhibitors and is suitable for direct amplification of whole blood and blood cards without extraction.	

Multiple long fragment amplification test example

Catalog number	STR201-130	Detection system	Forensic STR Detection System
Template type	Human total DNA	PCR program	95°C 5min; 28 cycles (94°C 10s, 61°C 30s, 72°C 10s), 60°C 30min.



• Figure. 1 Capillary electrophoresis results of forensic identification items

Example of Performance Testing for Isothermal Amplification-Ready Materials

Single Enzyme

Products	Specification	Catalog No.	Lyo.No.	Features/Applications
Bst 2.0	8U/μL	E102	FE102	①For LAMP. ②Enetically engineered for enhanced sensitivity. ③Compared to wild-type Bst DNA polymerase and large fragment versions, Bst 2.0 significantly improves amplification speed and yield.
Bst 2.0 HS	8U/μL	E103	FE103	①For LAMP. ②Aptamer-modified hot-start isothermal amplification enzyme , No separate activation step required. ③Reactions can be assembled at room temperature, effectively preventing non-specific amplification and enhancing reaction efficiency.
Bst 3.0	8U/μL	E104	FE104	①For LAMP； ②High inhibitor resistance, robust impurity tolerance, and superior sample compatibility. ③Enables room-temperature assembly of a contamination-proof system, effectively preventing amplicon aerosol contamination.
Bst 3.0 HS	8U/μL	E105	FE105	①For LAMP；Aptamer-modified hot-start isothermal amplification enzyme , No separate activation step required. ②High inhibitor resistance, robust impurity tolerance, and superior sample compatibility. ③Enables room-temperature assembly of a contamination-proof system, effectively preventing amplicon aerosol contamination.
RNase H II	200mU/μL	E201	FE201	①Designed for LAMP probe-based assays, facilitating hydrolysis probe cleavage. ②Specifically recognizes ribonucleotide bases within DNA duplexes, cleaving the phosphodiester bond between the RNA base (5' direction) and the adjacent DNA base, generating a 3'-hydroxyl terminus and a 5'-phosphate group on the ribonucleotide.

DNA-LAMP

Products	Specification	Catalog No.	Lyo.No.	Features/Applications
Lamp Premix(Dye Ⅱ) (Bst 2.0 HS)	2×	HW205 -R02	/	①Suitable for DNA sample detection by LAMP using intercalating dyes, requiring fluorescence detection instruments. ②Reactions can be assembled at room temperature, effectively preventing non-specific amplification and enhancing reaction efficiency.
Lamp Premix(Probe) (Bst 2.0 HS)	2×	HW205 -P01	/	①Designed for probe-based LAMP detection of DNA samples, requiring instrumentation for fluorescence readout. ②Reactions can be assembled at room temperature, effectively preventing non-specific amplification and enhancing reaction efficiency.
Colorimetric Lamp Kit (RY)(Bst 2.0 HS)	2×	HW205 -M01	/	①Designed for visual LAMP detection of DNA samples, enabling direct naked-eye observation without fluorescence instrumentation. ②Reactions can be assembled at room temperature, effectively preventing non-specific amplification and enhancing reaction efficiency. ③Based on pH, it is purplish red before the reaction, and the positive pore becomes purplish red after the reaction.

Products	Specification	Catalog No.	Lyo.No.	Features/Applications
Lamp Premix plus(Dye Ⅱ)(DG)(Bst 2.0 HS)	10×	/	FHW1007-R02	①Suitable for DNA sample detection by LAMP using intercalating dyes, requiring fluorescence detection instruments. ②Reactions can be assembled at room temperature, effectively preventing non-specific amplification and enhancing reaction efficiency.
Lamp Premix plus(Probe)(DG)(Bst 2.0 HS)	10×	/	FHW1007-P01	①Designed for probe-based LAMP detection of DNA samples, requiring instrumentation for fluorescence readout. ②Reactions can be assembled at room temperature, effectively preventing non-specific amplification and enhancing reaction efficiency.
Colorimetric Lamp Kit plus(RY)(Bst 2.0 HS)	10×	/	FHW1007-M01	①Designed for visual LAMP detection of DNA samples, enabling direct naked-eye observation without fluorescence instrumentation. ②Reactions can be assembled at room temperature, effectively preventing non-specific amplification and enhancing reaction efficiency. ③Based on pH, it is purplish red before the reaction, and the positive pore becomes purplish red after the reaction.

RNA-LAMP

Products	Specification	Catalog No.	Lyo.No.	Features/Applications
RT Lamp Premix(Dye Ⅱ)(Bst 2.0 HS)	2×	HW206-R02	/	①Suitable for RNA sample detection by LAMP using intercalating dyes, requiring fluorescence detection instruments. ②Reactions can be assembled at room temperature, effectively preventing non-specific amplification and enhancing reaction efficiency.
RT Lamp Premix(Probe)(Bst 2.0 HS)	2×	HW206-P01	/	①Designed for probe-based LAMP detection of RNA samples, requiring instrumentation for fluorescence readout. ②Reactions can be assembled at room temperature, effectively preventing non-specific amplification and enhancing reaction efficiency.
Colorimetric RT Lamp Kit(RY)(Bst 2.0 HS)	2×	HW206-M01	/	①Designed for visual LAMP detection of RNA samples, enabling direct naked-eye observation without fluorescence instrumentation. ②Reactions can be assembled at room temperature, effectively preventing non-specific amplification and enhancing reaction efficiency. ③Based on pH, it is purplish red before the reaction, and the positive pore becomes purplish red after the reaction.
RT Lamp Premix plus(Dye Ⅱ)(DG)(Bst 2.0 HS)	10×	/	FHW1008-R02	①Suitable for RNA sample detection by LAMP using intercalating dyes, requiring fluorescence detection instruments. ②Reactions can be assembled at room temperature, effectively preventing non-specific amplification and enhancing reaction efficiency.
RT Lamp Premix plus(Probe)(DG)(Bst 2.0 HS)	10×	/	FHW1008-P01	①Designed for probe-based LAMP detection of RNA samples, requiring instrumentation for fluorescence readout. ②Reactions can be assembled at room temperature, effectively preventing non-specific amplification and enhancing reaction efficiency.
Colorimetric RT Lamp Kit plus(RY)(Bst 2.0 HS)	10×	/	FHW1008-M01	①Designed for visual LAMP detection of RNA samples, enabling direct naked-eye observation without fluorescence instrumentation. ②Reactions can be assembled at room temperature, effectively preventing non-specific amplification and enhancing reaction efficiency. ③Based on pH, it is purplish red before the reaction, and the positive pore becomes purplish red after the reaction.

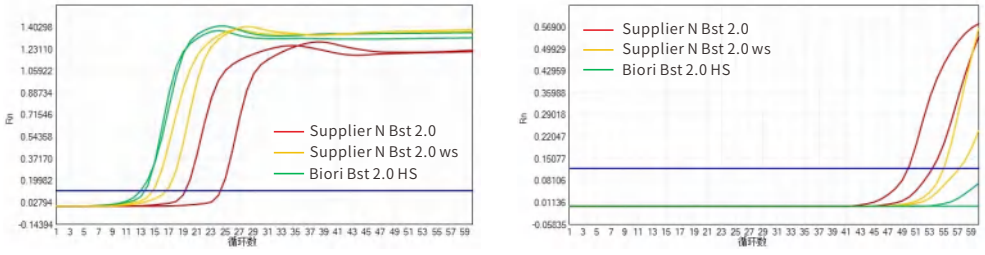
Bst 2.0/Bst 2.0 HS

Biori has developed Bst 2.0 through a high-throughput screening platform. This enzyme has gained strong customer recognition for its exceptional sensitivity and inhibitor resistance.Additionally, leveraging its protein engineering technology platform, Baorui has pioneered the first domestically developed hot-start version of Bst polymerase Bst 2.0 HS, further enhancing the specificity and sensitivity of LAMP assays.uilding on this foundation, Baorui Biotech has developed a comprehensive series of isothermal amplification reagents, including:Visual LAMP/RT-LAMP,Fluorescent dye-based LAMP/RT-LAMP,Probe-based LAMP/RT-LAMP.All these raw materials are also available in lyophilized (freeze-dried).

DNA-LAMP

Demonstration of Engineered Performance — Specificity Testing

Catalog number	HW205-R02	Detection system	LAMP Dye-Based Detection of GAPDH Gene (Left: Positive; Right: Negative)
Template type	Human Genomic DNA (GAPDH Gene Detection)	Reaction Protocol	65°C,60min (Fluorescence data collected every minute)

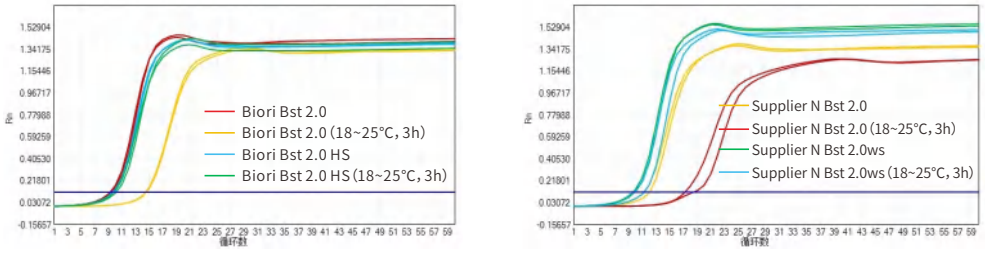


• Figure 1. Specificity Evaluation of Hot-Start Bst 2.0 HS in Amplification

Conclusion: Biori's Bst 2.0 HS serves as a perfect alternative to imported products, delivering comparable specificity to competing brands while outperforming conventional Bst polymerases.

Demonstration of Engineered Performance — Room Temperature Storage Stability Test

Catalog number	HW205-R02	Detection system	LAMP Dye-Based Detection of GAPDH Gene
Template type	Human Genomic	Reaction Protocol	65°C,60min (Fluorescence data collected every minute)

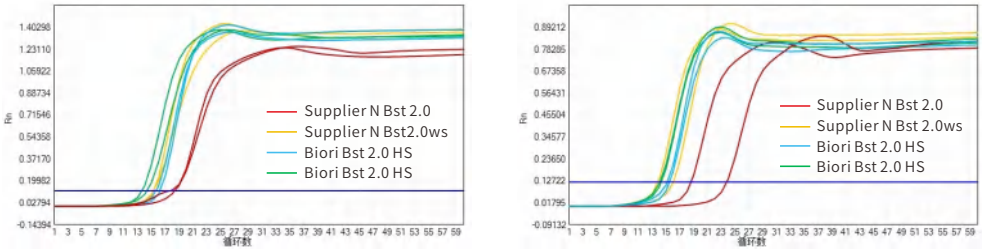


• Figure 2. Stability Evaluation of Hot-Start Bst 2.0 HS at Room Temperature Storage

Conclusion:Biori's Bst 2.0 HS can enable room-temperature operation.
Experiments show that:When a fully mixed reaction system (including template) was prepared and incubated at 25°C for 3 hours (green) versus immediate amplification (blue), the following was observed,Biori' s Bst 2.0 HS exhibited nearly identical amplification performance to the imported control Bst 2.0 ws,Unmodified Bst enzyme: Showed significant performance degradation after 3-hour incubation,Hot-Start Modified Bst (2.0 HS): Maintained performance comparable to freshly prepared reactions, proving its room-temperature stability.

Conventional LAMP Performance Comparison Test - DNA Purification Template Performance Comparison

Catalog number	HW205-R02	Detection system	LAMP Dye-Based Detection of GAPDH Gene (Left: primer1; Right: primer2)
Template type	Human Genomic DNA	Reaction Protocol	65°C,60min (Fluorescence data collected every minute)

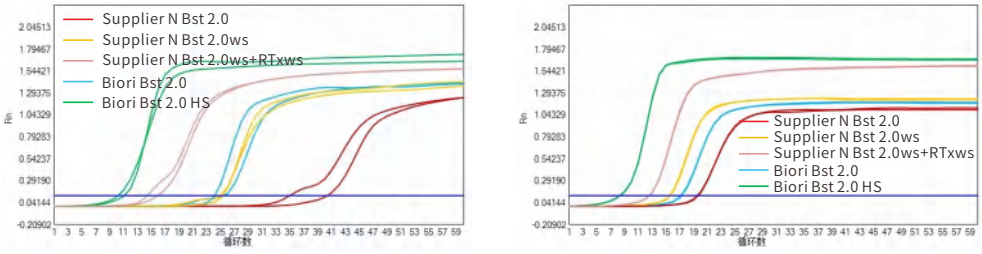


• Figure 3.Bst 2.0 HS DNA Template Amplification Performance Evaluation

RNA-LAMP

Conventional LAMP Performance Comparison Test - DNA Purification Template Performance Comparison

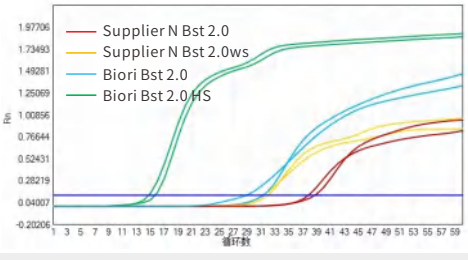
Catalog number	HW205-R02	Detection system	RT-LAMP Dye Method (Left: Detection with β-actin gene Primer 1;Right: Detection with R18S12 gene Primer 2)
Template type	Human total RNA	Reaction Protocol	65°C,60min (Fluorescence data collected every minute)



• Figure 3.Bst 2.0 HS DNA Template Amplification Performance Evaluation

Demonstration of Engineered Performance — Specificity Testing

Catalog number	HW206-R02
Detection system	RT-LAMP Fluorescent Detection of β-actin Gene
Template type	Human whole blood
Template input amount	5% (25 μL reaction system)
Reaction Protocol	65°C,60min (Fluorescence data collected every minute)

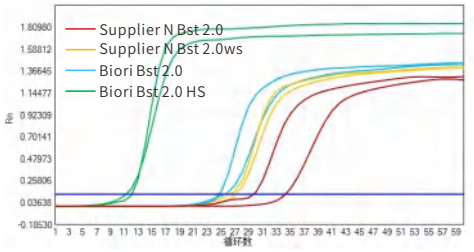


• Figure5.Bst 2.0 HS Whole Blood Template Amplification Performance Evaluation

Direct Amplification System Performance Comparison Test

Oral Swab Direct Amplification Performance (Fluorescent Detection, RNA Target)

Catalog number	HW206-R02
Detection system	RT-LAMP Fluorescent Detection of β-actin Gene
Template type	Human Oral Swab
Template input amount	Directly add 5 μL per tube of the swab sampling solution (25 μL reaction system)
Reaction Protocol	65°C,60min (Fluorescence data collected every minute)

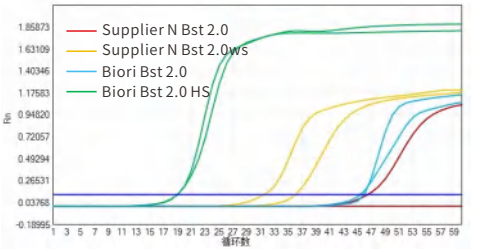


- Figure6.Bst 2.0 HS Oral Swab Template Amplification Performance Evaluation

Direct Amplification System Performance Comparison Test

Saliva Direct Amplification Performance (Fluorescent Detection, RNA Target)

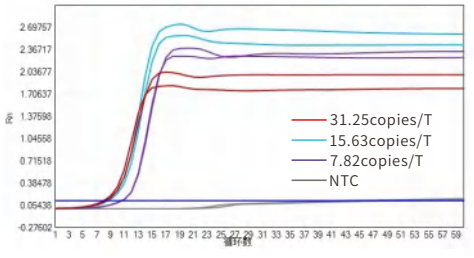
Catalog number	HW206-R02
Detection system	RT-LAMP Fluorescent Detection of β-actin Gene
Template type	Human Saliva
Template input amount	Directly add 3 μL per tube of the Saliva (25 μL reaction system)
Reaction Protocol	65°C,60min (Fluorescence data collected every minute)



- Figure7. Bst 2.0 HS Saliva Template Amplification Performance Evaluation

Fluorescent Detection of SARS-CoV-2 Pseudovirus

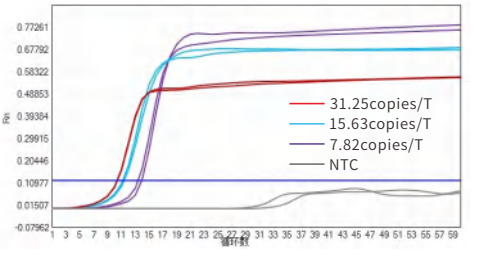
Catalog number	HW206-R02
Detection system	RT-LAMP Fluorescent Detection of SARS-CoV-2 Nucleic Acid
Template type	Extracted SARS-CoV-2 Pseudovirus Nucleic Acid
Template input amount	Approximately :31.25 copies/tube (Red), 15.63 copies/tube (Blue),7.82 copies/tube (Purple),NTC (Gray)
Reaction Protocol	65°C,60min (Fluorescence data collected every minute)



- Figure8. RT-LAMP Fluorescent Assay for SARS-CoV-2 Nucleic Acid Amplification

Probe-based Detection of SARS-CoV-2 Pseudovirus

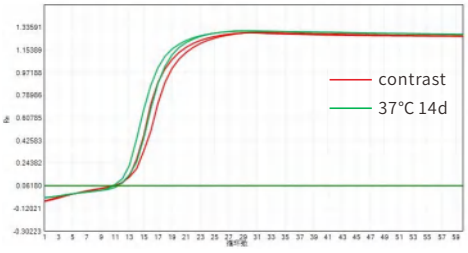
Catalog number	HW206-P01
Detection system	RT-LAMP Probe-based of SARS-CoV-2 Nucleic Acid
Template type	Extracted SARS-CoV-2 Pseudovirus Nucleic Acid
Template input amount	Approximately :31.25 copies/tube (Red), 15.63 copies/tube (Blue),7.82 copies/tube (Purple),NTC (Gray)
Reaction Protocol	65°C,60min (Fluorescence data collected every minute)



- Figure9. Probe-based RT-LAMP Amplification of SARS-CoV-2 Nucleic Acid

Accelerated Stability Data at 37°C for Bst 2.0 HotStart Lyophilized Reagent Formulation

Catalog number	FHW1008-P01
Detection system	RT-LAMP Probe-based of β-actin Gene
Template type	Human total RNA
Reaction Protocol	65°C,60min (Fluorescence data collected every minute)



- Figure10.Amplification Performance of Bst 2.0 HotStart, Neoscript RTase, and RNase H II after 14-Day Accelerated Stability Testing at 37°C.

Conclusion：The lyophilized reagent components (Bst 2.0 HotStart, Neoscript RTase, and RNase H II) each maintained full reaction system performance after individual 14-day accelerated stability testing at 37°C.

Visual Inspection Results

RY Visual Detection Method

Catalog number	HW206-M01
Detection system	RT-LAMP RY Visual Detection of β-actin Gene
Template type	Human total RNA
Reaction Protocol	65°C,60min (Fluorescence data collected every minute)

Before reaction

Post-reaction

Red：NTC；Blue：0.01ng/T；Yellow：0.1ng/T；Green：1ng/T

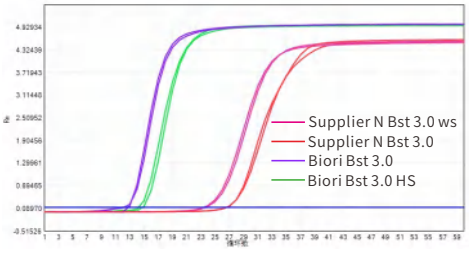
- Figure11.LAMP Red-Yellow Visual Detection Results

Bst 3.0/Bst 3.0 HS

Biori Bst 3.0 is a high-activity Bst DNA polymerase engineered through directed evolution on a high-throughput screening platform.Not only significantly improved tolerance to inhibitors (e.g., from swab samples, whole blood, and anal swabs),and exhibits superior dUTP incorporation capability for building dUTP/UNG carryover prevention systems.Bst 3.0 utilizes reversible aptamer modification technology, where its enzymatic activity is completely blocked at ambient temperature.So room-temperature reaction setup (25°C),effective prevention of non-specific amplification,enhanced reaction efficiency.Bst 3.0 HotStart requires no additional activation step and achieves highly efficient amplification.

Whole Blood Direct Amplification Performance(Fluorescent Detection, RNA Target)

Catalog number	E104/E105
Detection system	RT-LAMP Fluorescent Detection of β-actin Gene
Template type	Human whole blood
Template input amount	5% (25 μL reaction system)
Reaction Protocol	65°C,60min (Fluorescence data collected every minute)

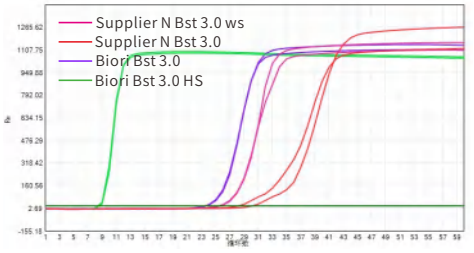


- Figure1.Bst3.0 HS Whole Blood Template Amplification Performance Evaluation.

Direct Amplification System Performance Comparison Test

Oral Swab Direct Amplification Performance (Fluorescent Detection, RNA Target)

Catalog number	E104/E105
Detection system	RT-LAMP Fluorescent Detection of β-actin Gene
Template type	Human Oral Swab
Template input amount	Directly add 5 μL per tube of the swab sampling solution (25 μL reaction system)
Reaction Protocol	65°C,60min (Fluorescence data collected every minute)

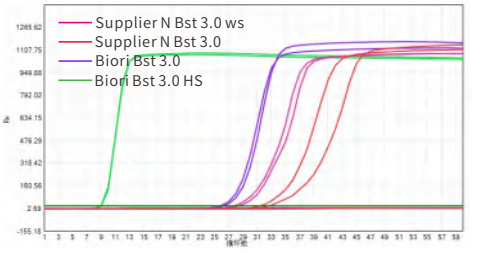


- Figure2.Bst 3.0 HS Oral Swab Template Amplification Performance Evaluation

Direct Amplification System Performance Comparison Test

Saliva Direct Amplification Performance (Fluorescent Detection, RNA Target)

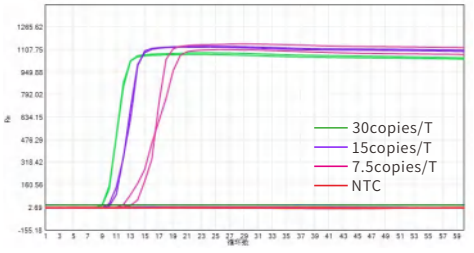
Catalog number	E104/E105
Detection system	RT-LAMP Fluorescent Detection of β-actin Gene
Template type	Human Saliva
Template input amount	Directly add 3 μL per tube of the Saliva (25 μL reaction system)
Reaction Protocol	65°C,60min (Fluorescence data collected every minute)



- Figure3. Bst 3.0 HS Saliva Template Amplification Performance Evaluation

Fluorescent Detection of SARS-CoV-2 Pseudovirus

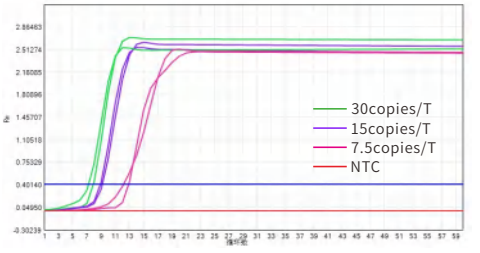
Catalog number	E104/E105
Detection system	RT-LAMP Fluorescent Detection of SARS-CoV-2 Nucleic Acid
Template type	Extracted SARS-CoV-2 Pseudovirus Nucleic Acid
Template input amount	Approximately :30 copies/tube (Green), 15 copies/tube (Purple),7.5 copies/tube (Pink),NTC (Red)
Reaction Protocol	65°C,60min (Fluorescence data collected every minute)



- Figure4. RT-LAMP Fluorescent Assay for SARS-CoV-2 Nucleic Acid Amplification

Probe-based Detection of SARS-CoV-2 Pseudovirus

Catalog number	E104/E105
Detection system	RT-LAMP Probe-based of SARS-CoV-2 Nucleic Acid
Template type	Extracted SARS-CoV-2 Pseudovirus Nucleic Acid
Template input amount	Approximately :30 copies/tube (Green), 15 copies/tube (Purple),7.5 copies/tube (Pink),NTC (Red)
Reaction Protocol	65°C,60min (Fluorescence data collected every minute)

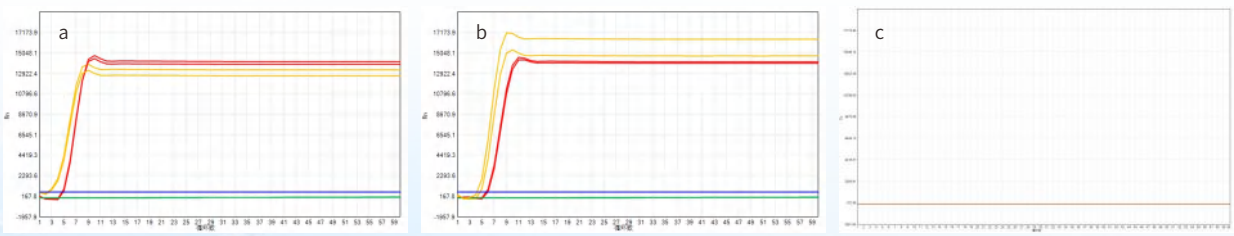


- Figure5. Probe-based RT-LAMP Amplification of SARS-CoV-2 Nucleic Acid

Contamination Resistance Test Demonstration

E104/E105 has strong beneficial effect on dUTP, and it can effectively remove 10^5copies/T of contaminated nucleic acid with temperature-sensitive UNG enzyme, which has excellent anti-pollution performance and can effectively prevent the pollution of sol products.

Catalog number	E104/E105	Detection system	dsDNA Detection System
Template type	dsDNA (T-base template) dsDNA (U-base template)	Template input amount	10^5copies/T (a) ; 10^4copies/T (b) ; NTC (c)
Reaction Protocol	65°C,60min (Fluorescence data collected every minute)		



- Red:E104/E105 with Thermolabile UNG , dsDNA (T-base Template) Yellow:E104/E105,dsDNA (U-base Template)
  Green:E104/E105 with Thermolabile UNG , dsDNA (U-base Template)

Methods: Red, green and three groups were added with corresponding templates to prepare a fully mixed reaction system, which was incubated at 25°C for 10min and then tested on the computer at the same time.

Enzyme

Products	Specification	Catalog No.	Features/Applications
AmpHifi HS DNA Polymerase Ⅰ	100U/200U/ 500U/ 1000U	BR3P101	The high-fidelity heat-stable DNA polymerase obtained through enzyme engineering directed evolution exhibits strong 3' to 5' exonuclease activity and has an extremely low mismatch rate during the PCR process. With specific antibody modification, it shows no 5' to 3' polymerase activity and 3' to 5' exonuclease activity at room temperature, enabling high-specificity HotStart PCR. Using human genomic DNA as a template, it is possible to easily obtain 15Kb long fragment amplification products, which can be used in conventional gene cloning, long fragment amplification, and other experiments.
AmpHifi HS DNA Polymerase III	100U/200U/ 500U/ 1000U	BR3P103	AmpHifi HS DNA Polymerase III is a new generation of thermally activated high-fidelity DNA polymerase, which significantly enhances DNA affinity and continuous synthesis capability through point mutations and domain recombination, increasing approximately 95 times compared to Taq polymerase. AmpHifi HS DNA Polymerase III is compatible with both regular GC-rich templates and trace templates, and its fidelity has been improved based on PCR amplification and sequencing library amplification.
T4 DNA Ligase	20000U/ 50000U	BR3P301	In the presence of ATP as an auxiliary, it can specifically catalyze the formation of phosphodiester bonds between the 5' phosphate and 3' hydroxyl of double-stranded DNA or double-stranded RNA. It is mainly used in the ligation process during library construction, connecting DNA fragments to vectors, or other experiments that require the connection of double-stranded nucleic acids.

Module reagent

Products	Specification	Catalog No.	Features/Applications
2× Multiplex PCR Master Mix	24T/96T	BR3M101	It is an ultra-multiplex PCR amplification reagent developed for ptNGS technology. It is suitable for rapid, high-specificity multiplex amplification of 20-1000-plex panels.
Script Max 1st Strand cDNA Synthesis Kit	24T/96T	BR3N701	Used for the synthesis of fragmented or full-length cDNA, the products can be used for high-throughput sequencing library construction.
One step RT PCR Mix	24T/96T	BR3M301	A one-step reverse transcription & multiplex PCR amplification reagent developed for RNA samples. Using RNA as the template, it is paired with various efficient reverse transcriptases and amplification enzymes with no nucleic acid residues. It allows for direct use of multiplex PCR to reverse transcribe RNA templates with specific primer sets and perform PCR amplification, completing the reverse transcription and PCR reaction in a single tube.
AmpHifi Mul-PCR Kit	24T/96T	BR3M104	Using high-fidelity DNA polymerase, paired with an optimized multiplex reaction buffer, reduces errors and biases introduced during the amplification process. It is more suitable for multiplex amplification where fidelity is required.
AmpSeq Library Amplification Mix	24T/96T	BR3M105	This product is a DNA amplification premix that includes essential components for amplification reactions, in addition to primers and templates. It is suitable for PCR, NGS high-throughput sequencing libraries, and other amplification applications. It is compatible with various types of clinical samples, including small quantities and FFPE. It has advantages such as a high library conversion rate and low amplification bias.

Products	Specification	Catalog No.	Features/Applications
AmpHifi EXL DNA Polymerase	24T/96T	BR3M402	AmpHifi EXL DNA Polymerase is a genetically engineered, high-fidelity DNA polymerase with a heat-start capability. It features extremely high DNA affinity and continuous synthesis ability, showing good compatibility with complex templates and partially degraded templates. Its fidelity has also been enhanced compared to the original version, approximately 96 times that of Taq polymerase. The buffer contains extension auxiliary factors and co-stabilizing components to maintain stable and efficient amplification processes. Using human genomic DNA as a template, it can achieve the amplification of fragments longer than 20Kb, making experiments such as gene cluster cloning and ultra-long fragment assembly straightforward.
2× Multiplex PCR Master Mix V2	24T/96T	BR3M106	2×Multiplex PCR Master Mix V2 is an ultra-multiplex PCR amplification reagent developed for ptNGS technology, an upgrade to NM201. It is suitable for rapid and high-specificity multiplex amplification of 20-1000 targets. The products obtained after multiplex amplification using 2×Multiplex PCR Master Mix V2 can be purified and applied to subsequent experiments such as library amplification.
Neoscript One Step RT-PCR Kit	24T/96T	BR3M321	The NeoScript One Step RT-PCR Kit is a terminal method PCR detection reagent for RNA templates. It uses gene-specific primers, and the RNA → cDNA → PCR process is carried out continuously in the same reaction system without the need for additional reagents, simplifying the experimental procedure. This kit utilizes high-temperature reverse transcriptase, a novel hot-start enzyme, and RNase inhibitors, paired with an optimized buffer system, allowing for an amplification fragment length of over 10kb.
2×Super-Fidelity Master Mix (Dye Plus)	24T/96T	BR3M121	2×Super-Fidelity Master Mix is a ready-to-use 2× high-fidelity PCR premix, utilizing a thermostable high-fidelity DNA polymerase that has been genetically engineered. It exhibits extremely high DNA affinity and continuous synthesis capability, with excellent compatibility for complex templates and partially degraded templates, achieving fidelity approximately 96 times that of Taq polymerase. The reagent includes unique extension factors and specificityenhancing factors, significantly improving amplification capability over long fragments, amplification specificity, and amplification yield. When using simple templates like λDNA and plasmids, 2×Super-Fidelity Master Mix can effectively amplify fragments up to 30 kb; with complex templates such as genomic DNA, it can amplify fragments up to 20 kb. Additionally, 2×Super-Fidelity Master Mix demonstrates good resistance to PCR inhibitors, making it suitable for direct PCR from bacteria, fungi, plant tissues, or whole blood samples. This product mix already contains a hot-start high-fidelity DNA polymerase, dNTPs, and an optimized buffer system, allowing for amplification with just the addition of primers and templates, minimizing pipetting operations, and enhancing detection throughput and result reproducibility. There is also a version that contains electrophoresis indicators, allowing for direct loading for electrophoresis after the PCR reaction is complete. It facilitates experiments such as gene cluster cloning and ultra-long fragment assembly.

Library construction reagent kit

Products	Specification	Catalog No.	Features/Applications
DNA&RNA Library Prep Kit For Illumina V2	8T/48T/96T	BR3C102	This product can be used for the construction of DNA & RNA libraries on Illumina®/MGI® sequencing platforms. Compared to traditional library construction methods, this product allows for one-tube construction of DNA & RNA libraries, enabling simultaneous high-efficiency cDNA synthesis, library amplification, and other reactions.
Fast DNA Library Preparation Kit	8T/48T/96T	BR3D503	This product uses an improved methodology based on random primer chain displacement amplification (MDA), utilizing a thermally stable DNA polymerase with high strand displacement activity that has been directionally evolved, along with restricted random primers. It can quickly achieve unbiased whole-genome amplification of 1 to 500 cells or ultra-trace samples within 2.5 hours.
Infectious disease multi-pathogen targeting library reagent kit	8T/48T/96T	BR3C202	The respiratory pathogen targeted library kit is a multiplex amplification sub-library method based on two rounds of PCR, designed for the efficient detection of DNA and RNA pathogenic microorganisms in the upper and lower respiratory tracts. This product allows for reverse transcription and the first round of PCR to be completed simultaneously in a single tube, meaning that pathogen RNA does not need to be reverse transcribed separately before being combined with pathogen DNA for library construction. It can quickly and specifically enrich multiple target regions, completing the library construction for various pathogens. This kit is suitable for the Illumina high-throughput sequencing platform.

Nucleic acid extraction and purification reagents

Products	Specification	Catalog No.	Features/Applications
DNA&RNA extraction reagents	50T/100T	BR2C101	This kit uses magnetic beads with a unique separation function and a specialized buffer system to isolate and purify high-quality pathogenic microbial DNA/RNA from serum, plasma, lymphatic fluid, urine, pleural and abdominal effusion, bronchoalveolar lavage fluid, cerebrospinal fluid, saliva, swabs, tissues, feces, sputum, acellular body fluids, cell culture supernatants, or various virus preservation solutions.

Targeted library construction solutions service

Products	Specification	Catalog No.	Features/Applications
tNGS Product Customization	Customizable	/	According to customer needs, combined with our company's targeted multi-technology platform, we use our self-developed semi-nested single-primer ultra-multiplex PCR patented technology to provide users with high-performance raw enzyme systems, multiplex primer design, and/or exceptionally performing targeted sequencing series products for overall product design and development.

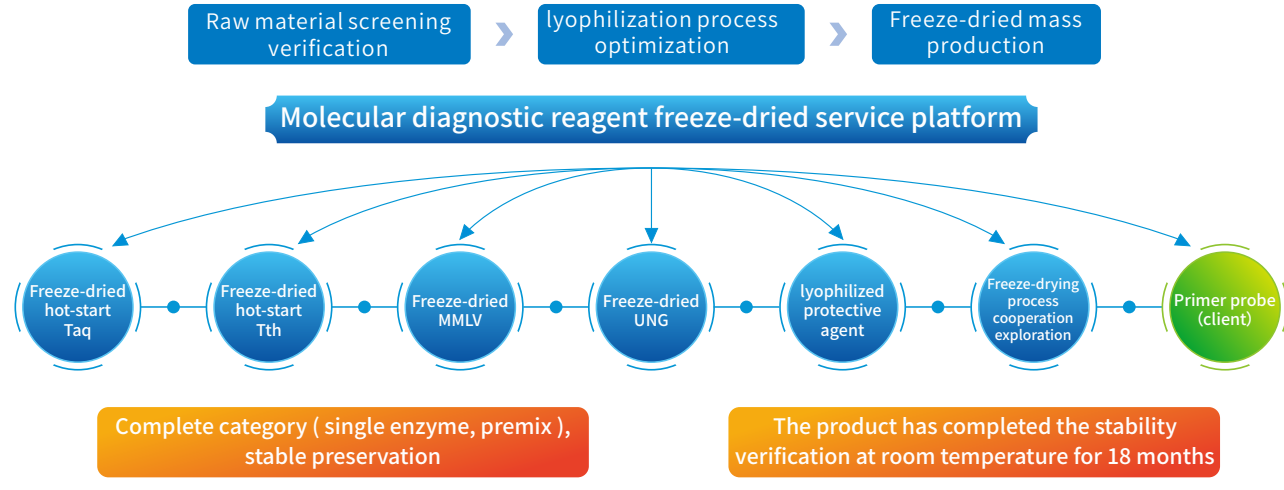
Supporting reagents

Products	Specification	Catalog No.	Features/Applications
NGS DNA Clean Beads	5mL/60mL/250mL	BR3N401	NGS DNAClean Beads are based on superparamagnetic microspheres, combined with an optimized buffer system, to recover nucleic acid fragments of different molecular weights from a specific proportion of magnetic bead suspension. This product is suitable for DNA and RNA library preparation kits of various brands and is used in the same way as the widely used AMPureXP Beads. This product can be operated manually and can also be applied for high-throughput experimental operations in automated liquid handling workstations.

Lyophilization Services

Since 2014, Biori has been developing the freeze-dried raw materials for diagnostic reagents. It is the first to develop and complete the freeze-dried special enzyme and freeze-dried premix for DNA and RNA detection in China. A complete set of freeze dried special raw materials suitable for fluorescence quantitative detection of DNA and RNA has been available , including many series of freeze-dried special raw material products, such as freeze-dried enzyme, pre-mixed liquid, freeze-dried protectant agent, freeze-dried rapid amplification and direct amplification reagent, freeze-dried LAMP isothermal amplification reagent and so on.

The above-mentioned freeze-dried special raw materials have been put into the accelerated stability verification period, which can provide more powerful support for the research and development of freeze-dried reagents. The freeze-dried reagent products of our company have been registered and approved by NMPA , and have established a good cooperative relationship with many molecular diagnostic clients in freeze-drying technology, products and services.



⚠ The stability verification is sufficient, and the products are diverse and customizable. There are already customers approved by NMPA registration.

In the process of cooperation, the customer only needs to provide the relevant primer probe to complete the feasibility study of freeze-drying. Biori will help the cooperative customer to optimize the freeze-drying process and guide the customer to carry out the freeze-drying operation.

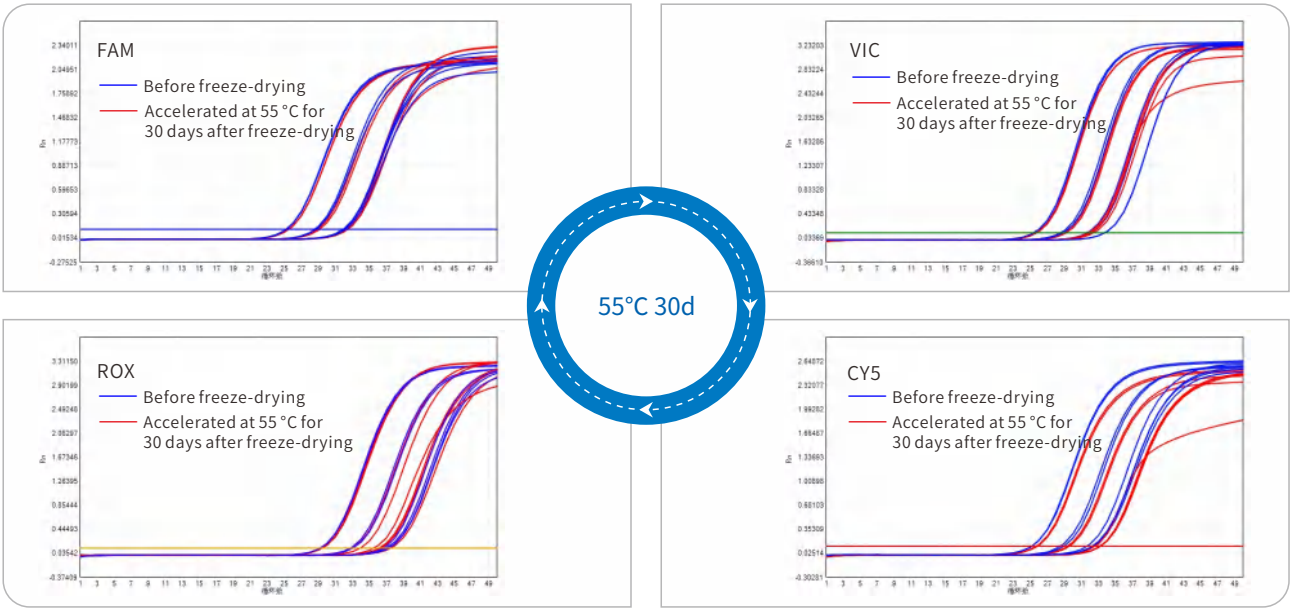
In order to cooperate with the customer 's research and development work, Biori also undertakes freeze-drying services. The freeze-drying forms available to customers include 8-Tube strips, penicillin vial and Lyophilized Beads, helping customers quickly achieve the most credible project results.

8-Tube Strips Freeze-drying Stability Data

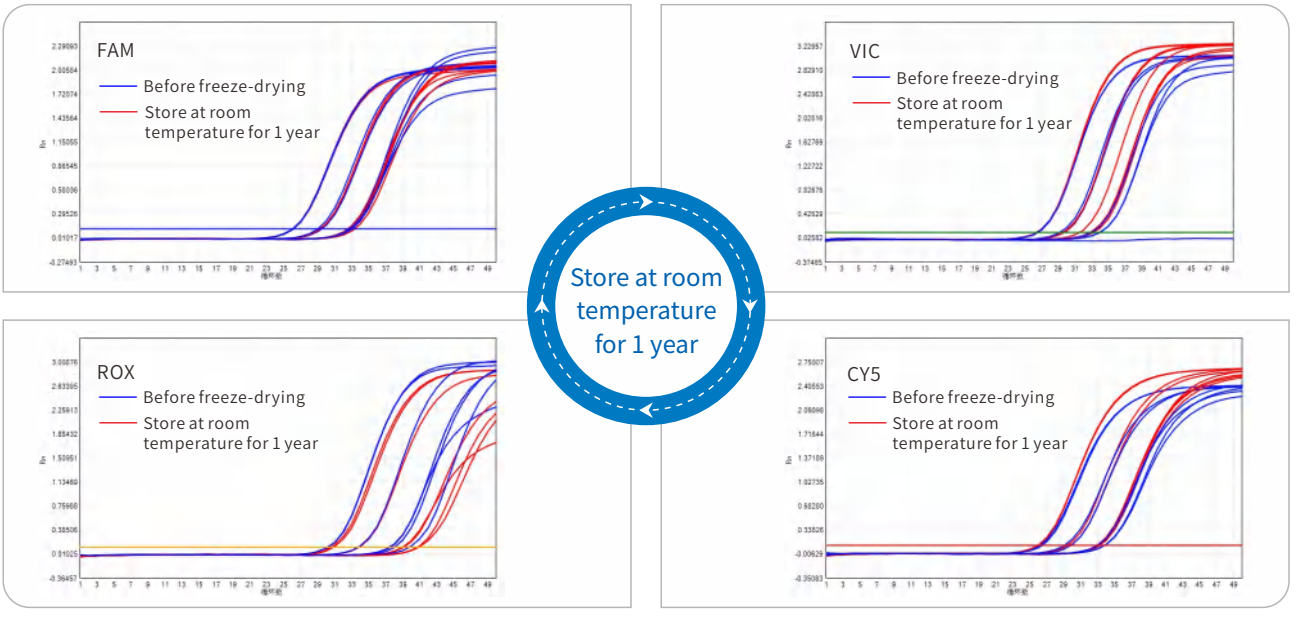
DNA amplification reagent freeze-dried products

The detection system of genome purification template accelerated (55 °C) stability verification

Catalog number	FM5071	Detection system	Genome quadruple detection system
Template type	Genome purification template	Reaction Protocol	50°C 2min；95°C 5min；50 Cycles (95°C 10s，55°C 40s)



• Figure 1. The results of DNA freeze-drying system at 55 °C for 30 days



• Figure 2. Amplification results of DNA freeze-dried system stored at room temperature for 1 year

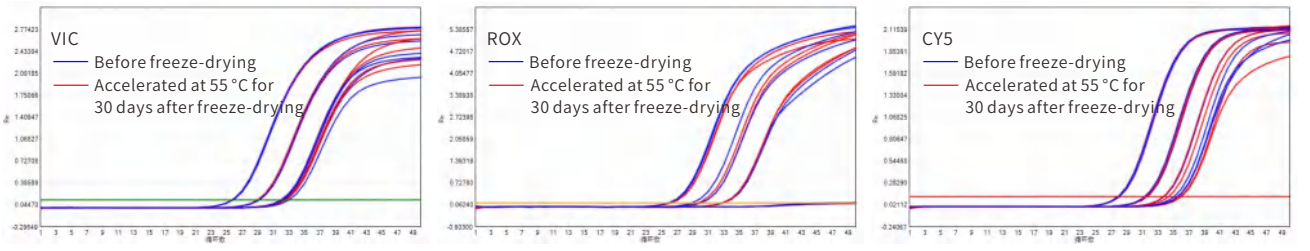
RNA amplification reagent freeze-dried products

Accelerated stability (55 °C) verification of human total RNA purification template triple detection system

Catalog number	FM5134	Detection system	Human Total RNA
Template type	Human Total RNA Purification Template	PCR program	50°C 15min;95°C 1min;50 Cycles (95°C 15s, 56°C 45s)

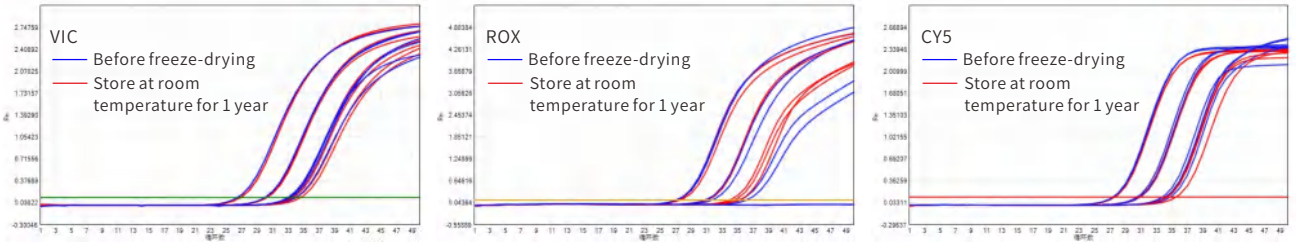
⚠ Note : The liquid reagents of the same batch of freeze-dried reagents were prepared immediately in the control group. After the freeze-dried reagents were taken out of the freeze-dryer, the aluminum foil bags were vacuum-packed and accelerated at 55 °C.

55°C 30d



• Figure3.The results of RNA freeze-drying system at 55 °C for 30 days

Store at room temperature for 1 year



• Figure4.Amplification results of RNA freeze-dried system stored at room temperature for 1 year

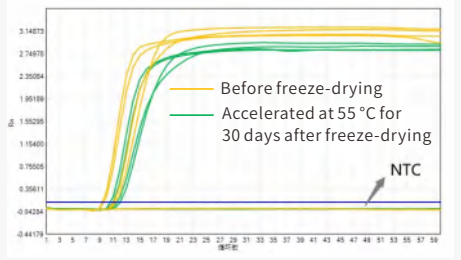
LAMP isothermal amplification reagent freeze-dried products

LAMP dye assay system accelerated stability (55 °C)

Catalog number	PFHW1007-R02-O25
Detection system	Detection of GAPDH gene
Template type	Genome purification template
PCR program	65°C, 60min (Collect fluorescence per minute)

⚠ Note : The liquid reagents of the same batch of freeze-dried reagents were prepared immediately in the control group. After the freeze-dried reagents were taken out of the freeze-dryer, the aluminum foil bags were vacuum-packed and accelerated at 55 °C

55°C 30d



• Figure5.LAMP dye system after freeze-dried 55 °C accelerated 30 days of amplification results

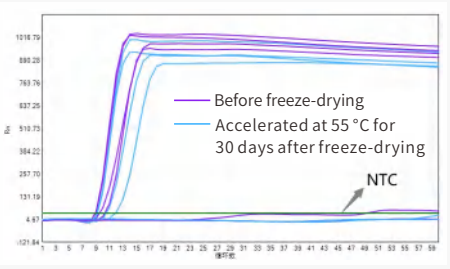
LAMP isothermal amplification reagent freeze-dried products

LAMP probe assay system accelerated stability (55 °C)

Catalog number	PFHW1007-P01-O25
Detection system	Detection of GAPDH gene
Template type	Genome purification template
PCR program	65°C, 60min (Collect fluorescence per minute)

⚠ Note : The liquid reagents of the same batch of freeze-dried reagents were prepared immediately in the control group. After the freeze-dried reagents were taken out of the freeze-dryer, the aluminum foil bags were vacuum-packed and accelerated at 55 °C.

55°C 30d



• Figure6.LAMP probe system after freeze-dried 55 °C accelerated 30 days of amplification results

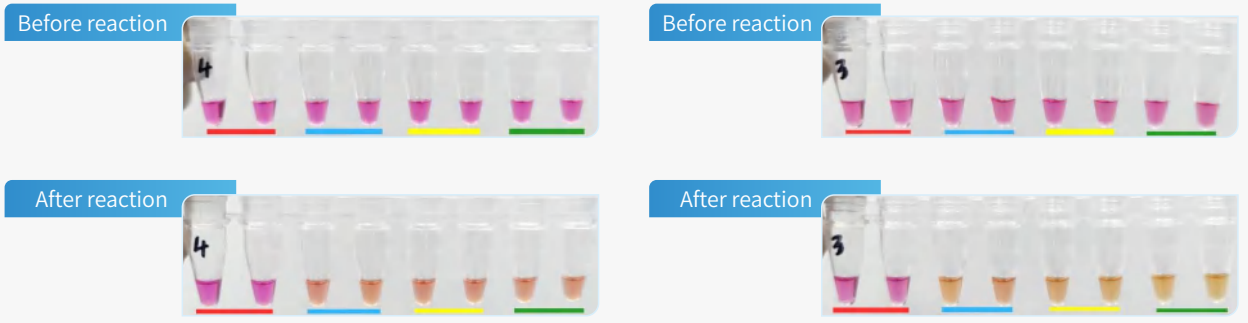
LAMP isothermal amplification reagent freeze-dried products

RT-LAMPVerification of accelerated stability (37 °C) of red-yellow visual detection system

Catalog number	PFHW1008-M01-O25	Detection system	RT-LAMPRed- Yellow visual detection system
Template type	Human Total RNA Purification Template	PCR program	65°C, 60min

⚠ Note : The liquid reagents of the same batch of freeze-dried reagents were prepared immediately in the control group. After the freeze-dried reagents were taken out of the freeze-dryer, the aluminum foil bags were vacuum-packed and accelerated at 37 °C

55°C 30d



Red：NTC；Blue：0.002ng/μL；Yellow：0.02ng/μL；Green：0.2ng/μL ▲

• Figure7.LAMP visual system freeze-dried after 37 °C accelerated 30 days of amplification results

Penicillin Vial Freeze-drying Stability Data

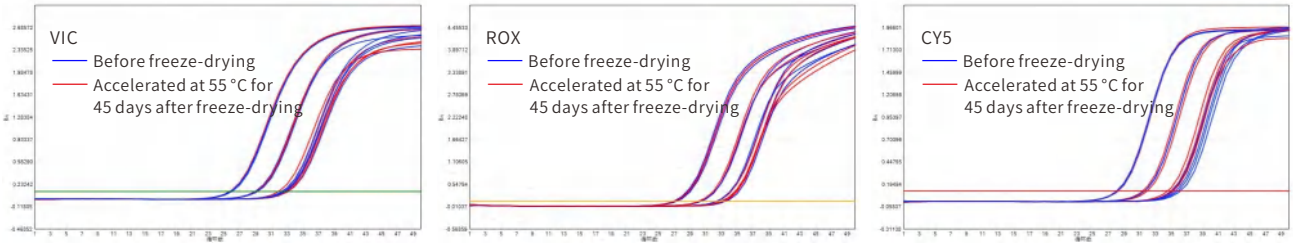
RNA amplification reagent freeze-dried products

Accelerated stability (55 °C) verification of human total RNA purification template triple detection system

Catalog number	FM5134	Detection system	Human Total RNA
Template type	Human Total RNA Purification Template	PCR program	50°C 15min；95°C 1min；50 Cycles (95°C 15s, 56°C 45s)

⚠ Note : The liquid reagents of the same batch of freeze-dried reagents were prepared immediately in the control group. After the freeze-dried reagents were taken out of the freeze-dryer, the aluminum foil bags were vacuum-packed and accelerated at 55 °C.

55°C 45d



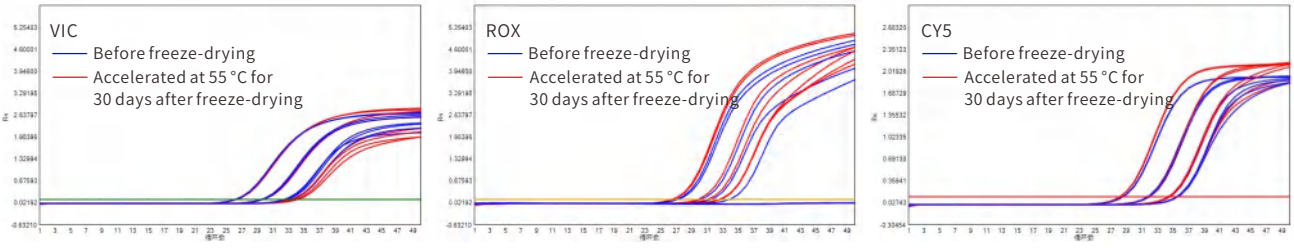
• Figure1.The amplification results of RNA system at 55 °C for 45 days after freeze-drying in Penicillin vial

Lyophilized Beads Freeze-drying Stability Data

RNA amplification reagent freeze-dried products

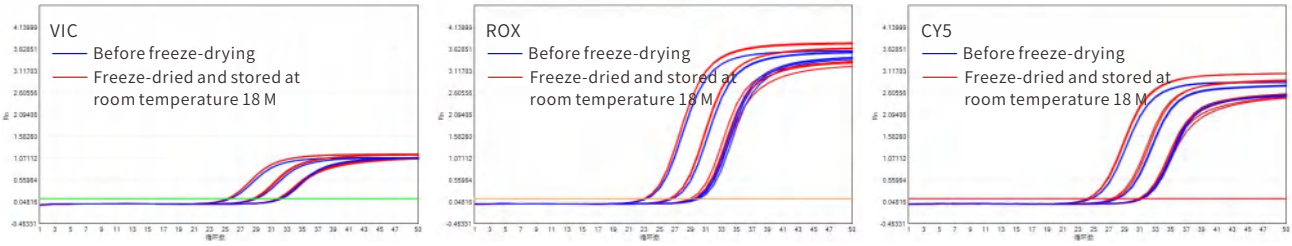
Catalog number	PFM5134-S25	Detection system	Human Total RNA
Template type	Human Total RNA Purification Template	Concentration	0.464、4.64、46.4pg/μL
PCR program	50°C 15min；95°C 1min；50 Cycles (95°C 15s, 56°C 45s)		

55°C 30d



Conclusion：PFM5134-S25 was accelerated at 55 ° C for 30 days, and the amplification performance was stable with the liquid reagent.

Room-temperature storage



Conclusion：PFM5134-S25 was placed at room temperature for 18 M, and the amplification performance was stable with the liquid reagent.

Anti-hygroscopic Lyophilized Protective Agent

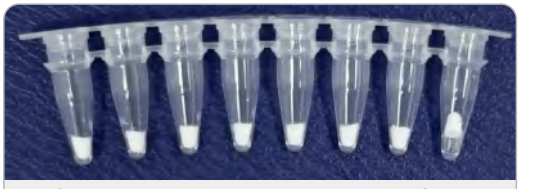
Catalog number：AS212-17

Genome quadruple detection system temperature stability (55 °C)

Catalog number	FM5071	Detection system	Genome quadruple detection system
Template type	Genome purification template	Concentration	0.0025、0.025、0.25ng/μL
PCR program	50°C 2min；95°C 5min；50 cycles (95°C 10s，55°C 40s)		

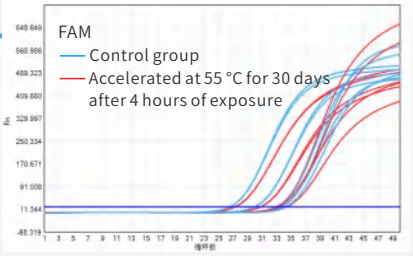
⚠ Note : 1. The control group was liquid reagent without lyophilized protective agent. 2. Open 4h acceleration group : refers to the 25 °C, 20-25 % humidity, open the lid open for 4h, then cover the lid, put into the aluminum foil bag vacuum sealing packaging, and then put into the 55 °C oven to accelerate the sample.

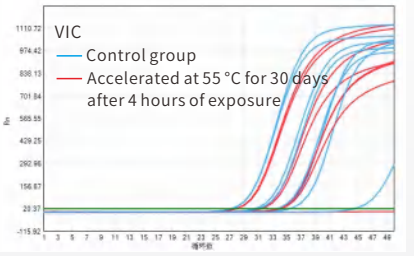
- Out of the freeze-drying box

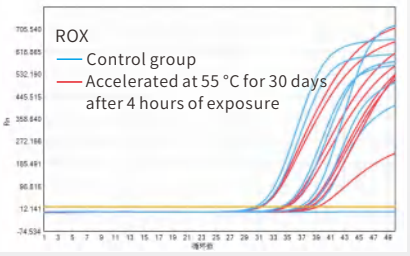


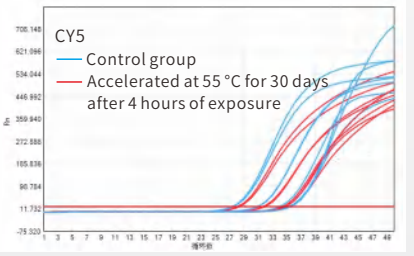
- After exposure to 20 % -25 % humidity for 4 h, 55 °C accelerated for 30 d

55°C 45d







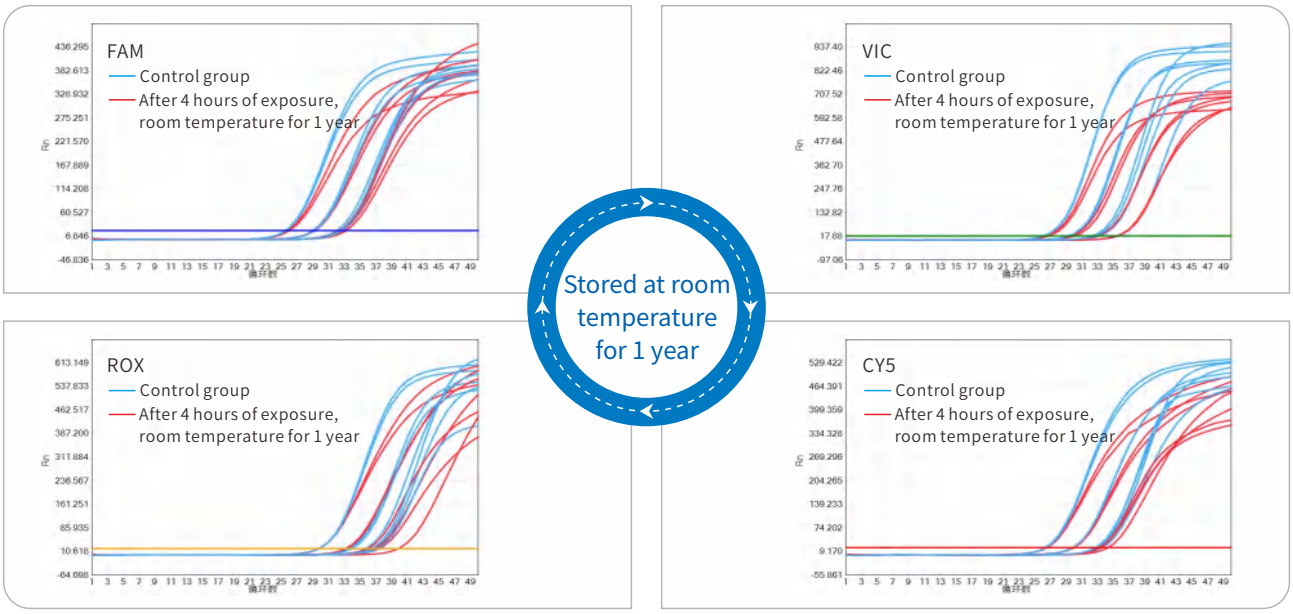


The stability of human genome quadruple detection system at room temperature (25 °C)

Catalog number	FM5071	Detection system	Human genome quadruple detection system
Template type	Genome purification template	Concentration	0.0025、0.025、0.25ng/μL
PCR program	50°C 2min；95°C 5min；50 cycles(95°C 10s，55°C 40s)		

⚠ Note : 1. The control group was liquid reagent without lyophilized protective agent. 2. Open 4h acceleration group : refers to the 25 °C, 20-25 % humidity, open the lid open for 4h, then cover the lid, put into the aluminum foil bag vacuum sealing packaging, and then put into the 25 °C oven to accelerate the sample.

- After exposure to 20 % -25 % humidity for 4 h, storage at room temperature for 1 year



Anti-hygroscopic Lyophilized Protective Agent

Catalog number:AS212-156-5

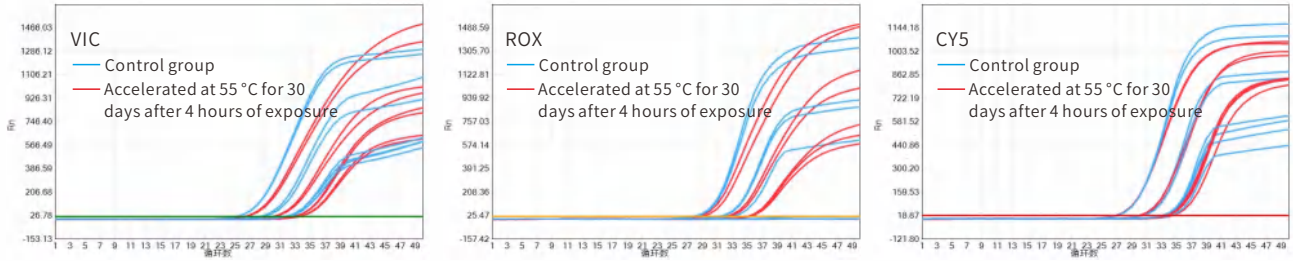
Accelerated stability (55 °C) verification of human total RNA purification template triple detection system

Catalog number	FM5144	Detection system	Human Total RNA
Template type	Human Total RNA Purification Template	Concentration	0.464、4.64、46.4pg/μL
PCR program	50°C 15min;95°C 1min;50 cycles(95°C 15s, 56°C 45s)		

⚠ Note : 1. The control group was liquid reagent without lyophilized protective agent. 2. Open 4h acceleration group : refers to the 25 °C, 20-25 % humidity, open the lid open for 4h, then cover the lid, put into the aluminum foil bag vacuum sealing packaging, and then put into the 55 °C oven to accelerate the sample.

- Out of the freeze-drying box
- After exposure to 20 % -25 % humidity for 4 h, 55 °C accelerated for 30 d

55°C 30d



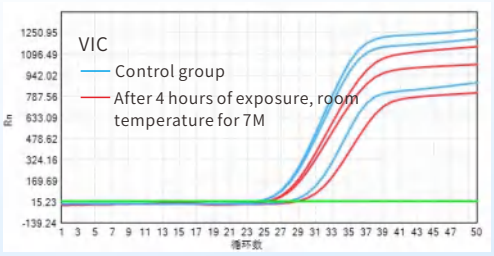
Stability of triple detection system for human total RNA at room temperature (25 °C)

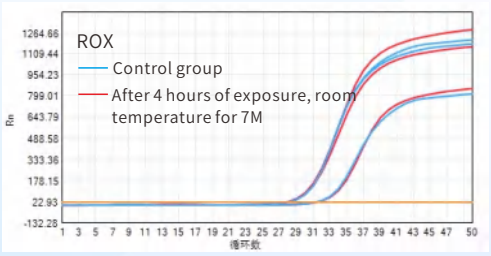
Catalog number	FM5144	Detection system	Human Total RNA
Template type	Human Total RNA Purification Template	Concentration	0.464、4.64、46.4pg/μL
PCR program	50°C 15min；95°C 1min；50 cycles (95°C 15s，56°C 45s)		

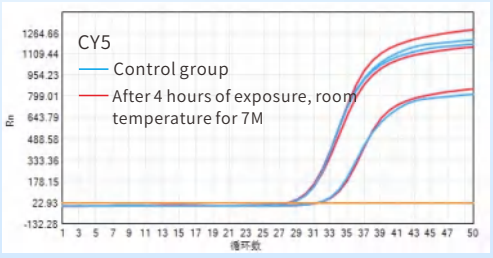
⚠ Note : 1. The control group was liquid reagent without lyophilized protective agent. 2. Open 4h acceleration group : refers to the 25 °C, 20-25 % humidity, open the lid open for 4h, then cover the lid, put into the aluminum foil bag vacuum sealing packaging, and then put into the 25 °C oven to accelerate the sample.

- After exposure to 20 % -25 % humidity for 4 h, storage at room temperature for 7 M

Room Temperature for 7M







Sample Pretreatment Products

Nucleic Acid Releaser

Products	Specification	Catalog No.	Model	Features/Applications
Universal nucleic acid releaser	/	AS17	/	①The pretreatment of biological samples, such as swabs, anticoagulant whole blood, feces, etc., has a swab sample loading ratio of 20%, an anticoagulant whole blood sample loading ratio of 20%, and a fecal liquid sample loading ratio of 20%. ②Highly efficient and time-saving, one-step cracking and instant release, no heating or centrifugation during the processing. ③It is used for the detection of DNA/RNA viruses related to humans and animals. It is suitable for rapid amplification and point-of-care testing (POCT) scenarios.
Nucleic acid releaser used in RY visual method	/	AS18	/	①Pre-treatment of biological samples,such as nasopharyngeal swabs and buccal swabs; The proportion of swabs can be as high as 90%. ②Efficient and time-saving,one-step lysisis released instantaneously, and there is no heating and centrifugation in the treatment process. ③It is used for the detection of human and animal related DNA/RNA viruses;It is used for rapid amplification and POCT application scenarios.

Swabs

Products	Specification	Catalog No.	Model	Features/Applications
Magnetic bead swab nucleic acid extraction kit III	IME-DR0101 - III			①Efficient and time-saving: the process of extracting swab samples by Magnetic bead swab nucleic acid extraction kit III automated equipment only takes 10.5 minutes. ②High sensitivity:RNA virus extraction concentrations can be as low as 200 copies/mL. ③Easy operation:one-step lysis binding,one-step cleaning,one-step elution,three-step method Complete nucleic acid purification. ④All components are alcohol-free:All components of the reagent are alcohol-free,free to dry,and safer.
	Bottled-32/48/64/96T	IME-DR0101- III-B32T/48T/64T/96T		
	Pre-packaged-32/48/64/96T	IME-DR0101- III-W32T/48T/64T/96T		

Virus

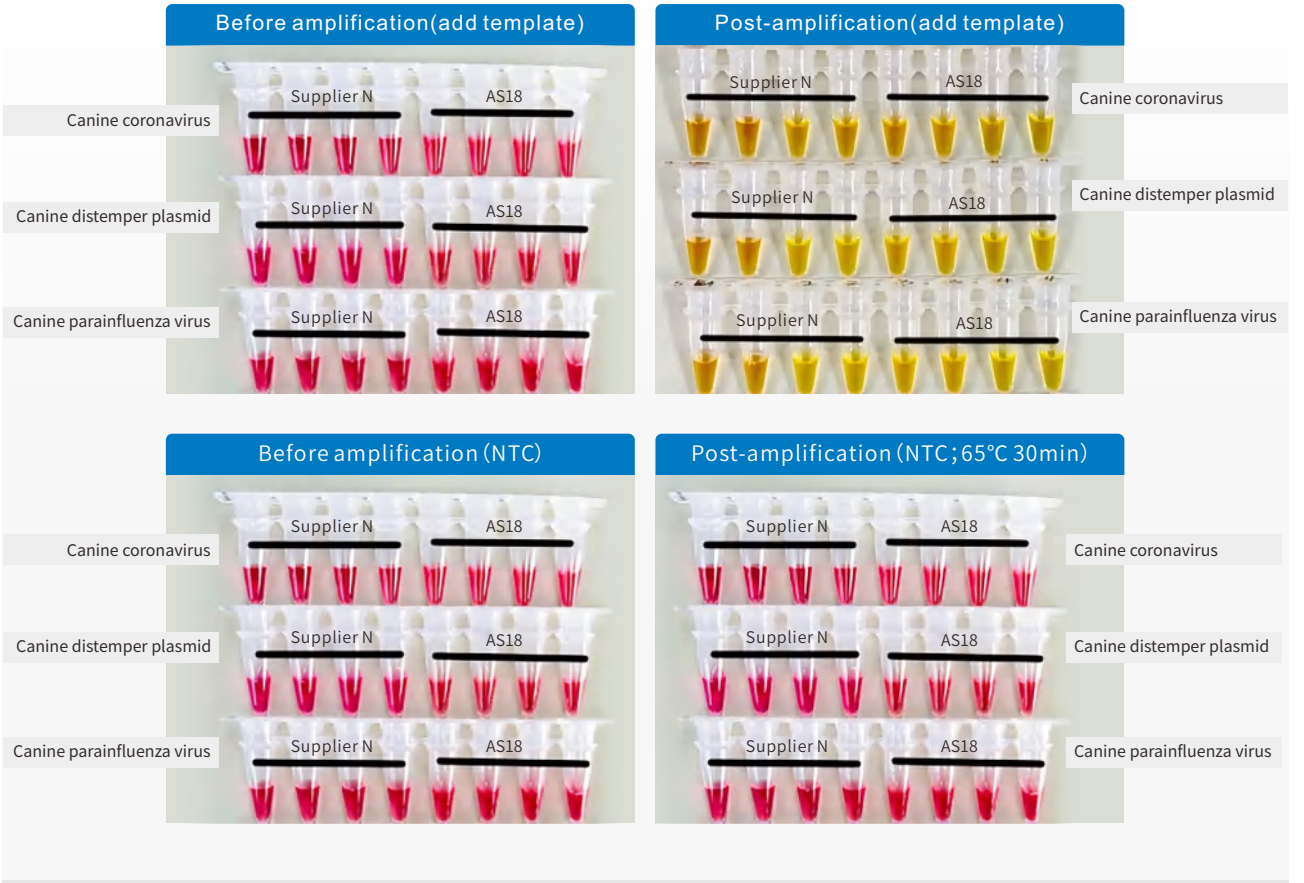
Products	Specification	Catalog No.	Model	Features/Applications
Magnetic Bead Virus Nucleic Acid Extraction Kit I	IME-DR0601- I			①High sensitivity:the concentration of DNA virus nucleic acid extraction can be as low as 10 IU/mL;RNA viral nucleic acid extraction concentrations can be as low as 50 IU/mL. ②Widely applicable:suitable for the extraction of various DNA and RNA; It can be easily extracted from the mouth/Nasopharyngeal swab wash,whole blood,plasma,serum,saliva,alveolar lavage fluid and other liquid samples Nucleic acids in this book. ③Simple and safe:avoid centrifugation,easy to operate; It does not contain chloroform,phenol and other toxic tests agent,high safety.
	Bottled-32/48/64/96T	IME-DR0101- III-B32T/48T/64T/96T		
	Pre-packaged-32/48/64/96T	IME-DR0101- III-W32T/48T/64T/96T		

Blood

Products	Specification	Catalog No.	Model	Features/Applications
Magnetic Bead Whole Blood Nucleic Acid Extraction Kit II	IME-DR0901- II			①Simple and safe:avoid centrifugation,easy to operate;It does not contain toxic reagents such as chloroform and phenol,and has high safety. ②High sensitivity:DNA virus extraction concentrations can be as low as 50 IU/mL in whole blood samples. ③Alcohol-freewashingliquid:alcohol-freecleaning,nodrying,morestable.
	Bottled-32/48/64/96T	IME-DR0901- II -B32T/48T/64T/96T		
	Pre-packaged-32/48/64/96T	IME-DR0901- II -W32T/48T/64T/96T		

Example of RY visual test

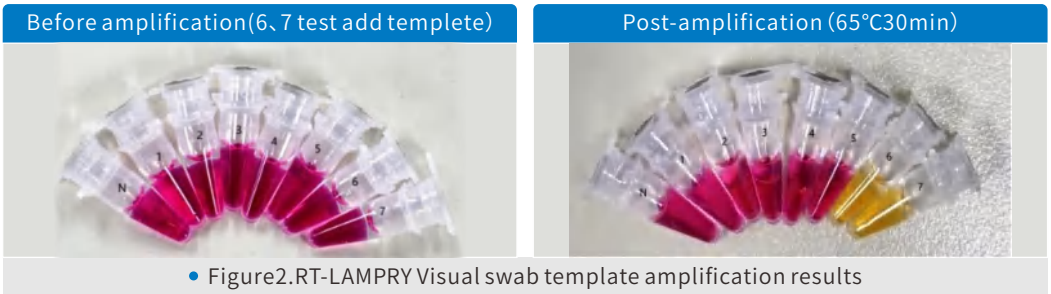
Catalog number	AS18	Detection system	RT-LAMP
Template type	Canine coronavirus、Canine parainfluenza virus、Canine distemper plasmid	volume	45μL releaser+5μL plasmid (E2copies/μL)
Reaction procedure	65°C 30min		



• Figure1.RT-LAMP RY Visual plasmid template amplification results

Example of RY visual test

Catalog number	AS18	Detection system	RT-LAMP
Template type	Negative buccal swab + Canine parainfluenza plasmid	volume	45μL releaser+5μL Canine parainfluenza plasmid (E2copies/μL)
Reaction procedure	65°C 30min		



• Figure2.RT-LAMPRY Visual swab template amplification results

Scientific Research Instruments

Products	Catalog No.	Features/Applications
Centrifugal mixing machine	CM-8	Centrifugation and shaking are combined to improve the efficiency of PCR experiments.
	CM-8 Plus	
Automatic nucleic acid extractor	BTE-8	1-8 samples are flexible and efficient to operate,rotary mixing, efficient and silent,and compatible with large-volume extraction.

CM-8 / CM-8 Plus Centrifugal Mixing Machine

Ingenious design

Exquisite appearance
drill-cut design high quality

Patent No.: 202130389474.0

Graded ocking Smooth operation
Small size and portable

Patent No.: 202110698687.0

Integrated pallet design
Good uniformity between tubes Stable baseline in PCR

A new option to improve PCR hands-on efficiency and uniformity between tubes

Intelligent actions

Compound knob Smart Halo

Patent No.: 202121409450.8

Easy-to-use with start/stop combo button Low-noise operation
Polarization shutdown Automatically operation and reliable Inductive control

Patent No.: 202121406810.9

Opencover protection
Smart and versatile

CM-8 Technical Specifications	
Specifications	Parameter
Centrifugation RPM	1500-4000rpm
Minimum Speed Regulation	100rpm
Operating mode	Centrifugal and mix
Mixing Intensity Level	Strong,medium and soft
Rotor Capacity	8-strip tubes
Lock Mode of Rotor	Quick-release knob
Lock Force	Multilevel adjustment
Procedural memory	Yes
Program Cycle	1-999
Abnormal vibration Halting	Yes
Input	AC 100～240V, 1.4A, 50/60HZ
Maximum input power	60W
Size(mm)	218×234×136mm
Weight	≦1.5kg

CM-8 PlusTechnical Specifications	
Specifications	Parameter
Centrifugation RPM	1500-4000rpm
Minimum Speed Regulation	100rpm
Operating mode	Centrifugal,mix,Centrifugal and mix
Mixing Intensity Level	Strong,medium and soft
Rotor Capacity	8-striptubes,1.5/2mLCentrifugetube
Lock Mode of Rotor	Quick-release knob
Lock Force	Multilevel adjustment
Procedural memory	Yes
Program Cycle	1-999
Abnormal vibration Halting	Yes
Input	AC 100～240V, 1.4A, 50/60HZ
Maximum input power	60W
Size(mm)	218×234×136mm
Weight	≦1.5kg

BTE-8 Full Automatic Nucleic Acid Extractor

High-effciency operation
Operating 1-8 samples flexibly
Rotary mix, efficient and mute

Hardcore system
High precision& high efficiency
temperature control
80μl-3200μl huge operating volume

Convenient operation
The consumables compartment
ejects automatically

Intelligent design
Operation by one smart knob
Novel vertical design to save space

BTE-8 Technical Specifications	
Specifications	Parameter
Sample throughput	1~8
Process volume	80μL~1000uL(standard),1000~3200μL
Product name	Automatic nucleic acid extraction instrument
Code	BTE-8
Inter-pore uniformity	Cv＜3%
Rotate speed	Multi-position
Extracting time	8-20mins/time (typicalvalue)
Illuminating system	Internal LED
Sterilization	Ultravioletray
Lysis/elution temperature	Roomtemperature~120℃
Maximum output power	90W
Power input	DC24V
Size(mm)	170×360×356
Weight	＜7kg

Corporate Mission

Protecting Life and Health
Creating a Better Life

Corporate Vision

Leader in the Life Sciences Field

Core Values

Integrity Responsibility
Proactiveness Innovation

Pursuing Excellence in Quality
Providing Prompt and Thorough Service

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