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## Molecular Research & Diagnostic Products

Professional Supplier of PCR & NGS Reagents



Guangzhou Dongsheng Biotech Co., Ltd.





# COMPANY PROFILE

Founded in 2005, located in the Science City of Guangzhou, China, Guangzhou Dongsheng Biotech Co., Ltd (GDSBio) is a high-tech enterprise focusing on R&D, production and sales of high-quality life science products and in vitro diagnostic reagents. Products related to PCR and NGS library preparation are GDSBio's key product lines and essential raw materials for molecular diagnostics. Since 2010, when GDSBio was certified with ISO9001 and ISO13485 standards in sequence, it has opened up overseas markets. Over the past 18 years, our customers have spread all over the world. GDSBio's international resource links and multi-dimensional biological research methods help it stand at the forefront of the industry. Interpret the world with high-end technology, insight into the biological mystery.

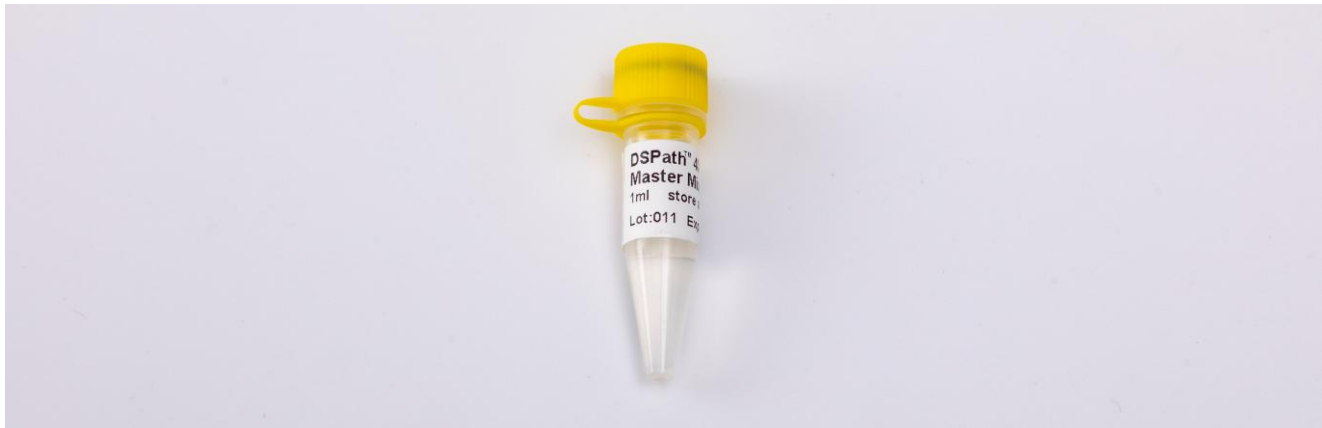
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Hot-Sale Products

Product Name	Description	Cat. No.	Spec.
DSPath™ 4X One-Step Multiplex Master Mix	4X all-in-one master mix for one-step multiplex RT-qPCR by probe method	V5005/V5006	200 rxns/5,000 rxns
Multiplex Probe qPCR Mix Plus U	For Multiplex qPCR by probe method, introduced with dUTP/UDG anti-contamination system	P2701/P2702/P2703/P2704	1 mL/1 mL×5/50 mL/100 mL



DSPath™ 4X One-Step Multiplex Master Mix

DSPath™ 4X One-Step Multiplex Master Mix is used to perform one-step multiplex real-time PCR applications with any gene-specific primer and probe sets, and is suitable for both RNA and DNA targets. This master mix is formulated with optimized buffer components to accommodate multiplex amplification of up to four RNA or DNA target sequences in a single reaction. The master mix is supplied at a 4X concentration that allows to input more sample into each reaction, increasing sensitivity even in low-volume reactions.



Multiplex Probe qPCR Mix Plus U

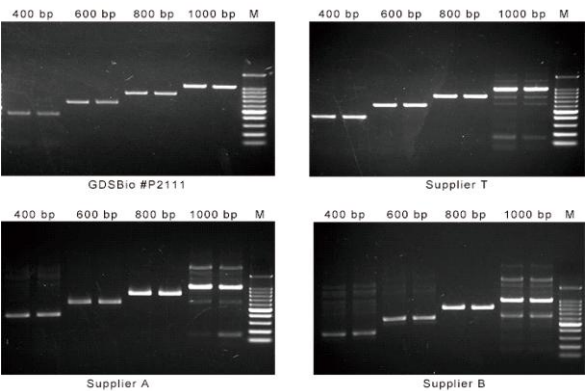
Multiplex Probe qPCR Mix Plus U is a 2X concentrated premix for real-time quantitative PCR with probe method. This product contains antibody technology modified Hotstart Taq DNA polymerase. Combined with GDSBio's special real-time PCR Buffer, it can not only effectively inhibit primers dimer and other non-specific amplification, but also improve the amplification efficiency, allowing multi-probe qPCR reaction. The target gene quantification is accurate, reliable and reproducible. This product can be used with TaqMan and other fluorescent probes, and is perfectly compatible with common quantitative PCR instruments, such as ABI, Roche, Bio-rad, etc.

PCR Products



Zero Background PCR Breakthrough with Enhanced Dual Antibody Modification  
Hotstart Technology Technical advantages:

- ① Enhanced dual antibody modification, with higher specificity than conventional dual antibody modification.
- ② Zero background products, no non-specific DNA bands, no primer dimers
- ③ No need for gel cutting, products can be directly recovered for cloning



Using the upgraded GDSBio #P2111 Super HIFI PCR Master Mix modified with dual antibodies and similar products from manufacturers T, A, and B, we amplified fragments of 400 bp, 600 bp, 800 bp, and 1000 bp using human genomic DNA as a template. The results showed that #P2111 could achieve zero background amplification in four different reactions.

Figure 1: Electrophoresis results. M: GDSBio #M1061 100bp Ladder

PCR reagents with enhanced dual antibody modification:

Application	Product Name	Cat. No.	Spec.
Ultra-high fidelity PCR	Super HIFI PCR Master Mix	P2111/P2112/P2113	1 ml/1 ml×10/10 ml×5
ARMS PCR	ARMS PCR Mix	P4011/P4012	1 ml/1 ml×5
KASP	KASP PCR Mix	P4021/P4022	1 ml/1 ml×5
High fidelity PCR	Hotstart Pfu Mix	P2051/P2052	1 ml/1 ml×5
Hotstart PCR	Optimus™ Hotstart Taq Mix	P2041/P2042	1 ml/1 ml×5
Multiplex PCR	Multiplex PCR Master Mix with UDG	PM2001/PM2002/PM2003	40rxns/400rxns/2000rxns
NGS Multiplex PCR	NGS Multiplex PCR Master Mix I	NM1001/NM1002/NM1003	40rxns/400rxns/2000rxns
NGS Multiplex PCR	NGS Multiplex PCR Master Mix II	NM2001/NM2002/NM2003	40rxns/400rxns/2000rxns
NGS Multiplex PCR	DSPath NGS Multiplex PCR Master Mix	K030-A/K030-B	80rxns/400rxns
NGS Multiplex PCR	DSPath NGS Multiplex PCR Master Mix II	K031-A/K031-B	80rxns/400rxns

Routine PCR

Product Name	Description	Cat. No.	Spec.
Taq DNA Polymerase	Classic Taq DNA Polymerase	P1011/P1012/P1013/ P1014/P1015	500 U/500 U+dNTPs/1,000 U/1,000 U+ dNTPs/18,000 U
Taq Mix	Master mix with Taq DNA Polymerase	P2011/P2012/P2013/ P2014/P2015	1 mL/1 mL×5/1 mL×10/500 mL/1 L
Taq Mix II	Higher sensitivity and specificity	P2011b/P2012b/P2013b/ P2014b/P2015b	1 mL/1 mL×5/1 mL×10/500 mL/1 L

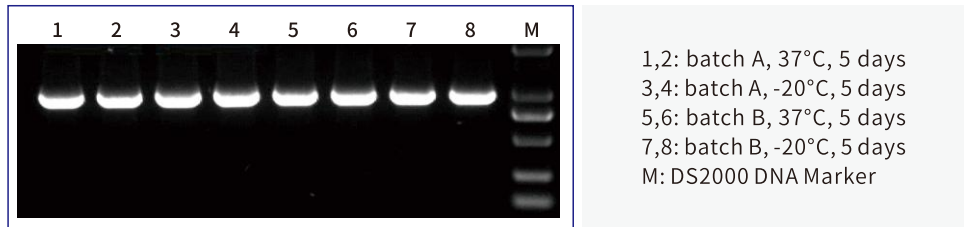
Taq Mix (P2011)

FEATURES

· Classical and conventional Taq DNA Polymerase · Elongation speed: 2kb/min · generates 3'-dA overhangs

VALIDATION DATA

The Taq Mix was able to maintain stable performance for 5 days at 37°C and successfully amplify 1000bp fragments.



High Fidelity PCR

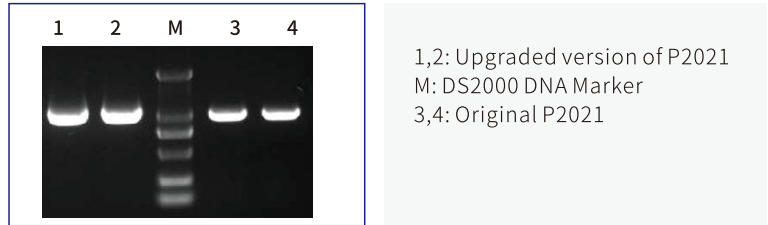
Product Name	Description	Cat. No.	Spec.
Pfu DNA Polymerase	10X fidelity of Taq DNA Polymerase	P1021/P1022/P1023/P1024	250 U/250 U+dNTPs/500 U/500 U+dNTPs
Pfu Mix	Master mix with Pfu DNA Polymerase	P2021/P2022	1 mL/1 mL×5
Hotstart Pfu Mix	Hotstart version of master mix	P2051/P2052	1 mL/1 mL×5
Super HIFI PCR Master Mix	100X fidelity of Taq DNA Polymerase	P2111/P2112/P2113	1 mL/1 mL×10/10 mL×5

Pfu Mix (P2021)

FEATURES

· 10X high fidelity of Taq · Elongation speed: 1kb/min · generates blunt ends

VALIDATION DATA



Professional Supplier of PCR & NGS Reagents

High Efficiency PCR

Product Name	Description	Cat. No.	Spec.
Taq Plus DNA Polymerase	Efficient amplification of complex/ high GC templates	P1031/P1032/P1033/P1034	250 U/250 U+dNTPs/500 U/500 U+dNTPs
Plus Mix	Master mix with Taq Plus DNA Polymerase	P2031/P2032/P2033/P2034/ P2035	1 mL/1 mL×5/1 mL×10/500 mL/1 L

Hotstart PCR

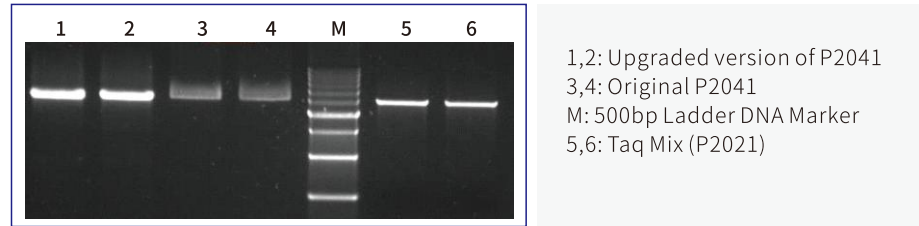
Product Name	Description	Cat. No.	Spec.
Optimus™ Hotstart Taq DNA Polymerase	Hotstart type can be selected from antibody modification or chemical modification	P1041/P1042/P1043/P1044/ P1045/P1046	250 U/1,000 U/3,000 U/18,000 U/200,000 U/500,000 U
Optimus™ Hotstart Taq Mix	Master mix with Optimus™ Hotstart Taq DNA Polymerase	P2041/P2042/P2043/P2044	1 mL/1 mL×5/100 mL/500 mL
HS Hotstart Taq DNA Polymerase	Hotstart Taq DNA Polymerase with antibody modification	P1091	500 U
qPCR HotstartTaq DNA Polymerase	Applicable to fluorescence quantitative PCR	P1101/P1102/P1103/P1104	250 U/1,000 U/3,000 U/18,000 U
ARMS PCR Mix	Gene detection by ARMS PCR	P4011/P4012	1 mL/1 mL×5
ARMS PCR Mix II	Higher ion concentration	P4011b/P4012b	1 mL/1 mL×5
KASP PCR Mix	Genotyping by KASP technology	P4021/P4022	1 mL/1 mL×5
KASP PCR Mix II	Higher ion concentration	P4021b/P4022b	1 mL/1 mL×5

Optimus™ Hotstart Taq Mix (P2041)

FEATURES

· High specificity · hotstart with antibody modification · Elongation speed: 1kb/min · generates 3'-dA overhangs

VALIDATION DATA



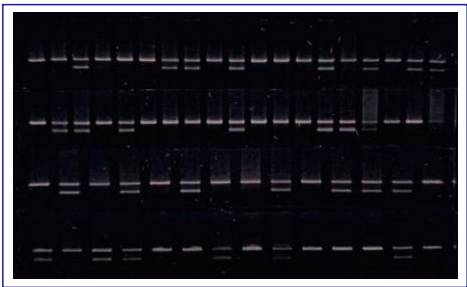
After the upgrade, Optimus™ Hotstart Taq Mix (P2041) further improves the amplification efficiency on the basis of ensuring high specificity.

ARMS PCR Mix (P4011)

FEATURES

- Enhanced dual antibody modification hotstart technology
- Simple and fast genotyping
- one-tube master mix, easy to use

VALIDATION DATA



GDSBio's customers used ARMS PCR Mix for bird sex identification, and the genetic testing results met the expected results.

Long PCR

Product Name	Description	Cat. No.	Spec.
Long Taq DNA Polymerase	Amplification of DNA fragments up to 20 kb	P1061/P1062/P1063/P1064	250 U/250 U+dNTPs/1,000 U/1,000 U+dNTPs
Long Taq Mix	Master mix with Long Taq DNA Polymerase	P2061/P2062	1 mL/1 mL×5/1 mL×10/500 mL/1 L

Fast PCR

Product Name	Description	Cat. No.	Spec.
FS Taq DNA Polymerase	Extension speed 3kb/min	P1071/P1072/P1073/P1074	250 U/250 U+dNTPs/1,000 U/1,000 U+dNTPs
FS Mix	Master mix with FS Taq DNA Polymerase	P2071/P2072	1 mL/1 mL×5

Direct PCR

Product Name	Description	Cat. No.	Spec.
FS Mix Direct for Blood	Direct amplification of blood samples without extraction of nucleic acids	P2071a/P2072a	1 mL/1 mL×5
FS Mix Direct for Tissue	Direct amplification of tissue samples without extraction of nucleic acids	P2071b/P2072b	1 mL/1 mL×5

Multiplex PCR

Product Name	Description	Cat. No.	Spec.
Multiplex PCR Master Mix with UDG	For Multiple genetic tests, compatible with complex samples	PM2001/PM2002/PM2003	40 rxns/400 rxns/2,000 rxns
NGS Multiplex PCR Master Mix	For PCR enrichment in NGS library preparation; Supports hundreds-plex of PCR amplification	NM1001/NM1002/NM1003	40 rxns/400 rxns/2,000 rxns
NGS Multiplex PCR Master Mix II	Different ion concentration; Supports thousand-plex PCR amplification	NM2001/NM2002/NM2003	40 rxns/400 rxns/2,000 rxns

Isothermal Amplification

Product Name	Description	Cat. No.	Spec.
Bst DNA Polymerase, Exonuclease Minus	Strong chain displacement activity for LAMP	P1111/P1112/P1113	200U/2,000U/10,000U
T4 gene 32 protein	Stabilizes single-stranded regions of DNA	P1121	100 μL
Bsu DNA Polymerase (Large Fragment)	Strong chain displacement activity for RPA	P1131	100 μL
T4 UvsX Recomb inase	Together with other DNA-binding proteins, nucleic acid protein complexes are formed with ssDNA to further complete the chain replacement reaction	P1141	100 μL
T4 UvsY Recombinase	Enhance the ATPase activity of UvsX protein , promoting the chain replacement reaction	P1151	40 μL

PCR Related Products

Product Name	Description	Cat. No.	Spec.
dNTPs	4 dNTPs mixture of 2.5 mM each	P9011	1 mL
dNTPs	4 dNTPs mixture of 10 mM each	P9013/P9014/P9015/P9016	1 mL/100 mL/1 L/10 L
dNTP Set	4 individual dNTPs of 100 mM each	P9061	250 μL×4
dATP	100 mM	P9071	1 mL
dTTP	100 mM	P9081	1 mL
dCTP	100 mM	P9091	1 mL
dGTP	100 mM	P9101	1 mL
dUTP	100 mM	P9111	1 mL

Product Name	Description	Cat. No.	Spec.
dNTP Mix (RNase free)	4 dNTPs mixture of 10 mM each	R2051/R2052	0.5 mL/100 mL
10X PCR Buffer (Mg <sup>2+</sup> Plus)	PCR Buffer with 15 mM Mg <sup>2+</sup>	P5011	1.25 mL×4
10X PCR Buffer(Mg <sup>2+</sup> Free)	PCR Buffer without Mg <sup>2+</sup>	P5011a	1.25 mL×4
10X PCR Buffer with Mg <sup>2+</sup> Set	PCR Buffer Set with 6 different concentrations of Mg <sup>2+</sup>	P5011b	1.25 mL×6
Water (Nuclease-free)	PCR-grade ultrapure water	P9021/P9022/P9023	1 mL×5/100 mL/500 mL
25 mM MgCl <sub>2</sub>	Applicable to PCR and other enzymatic reactions	P9031	1.25 mL×4
PCR Enhancer	Increase the sensitivity and specificity of PCR	P9041	500 μL
PCR Sample Preparation Solution	Efficient pre-treatment of samples for direct PCR	P9051/P9052	50 preps/200 preps
Heat Labile UDG	Control PCR residual contamination	R5001/R5002	500U/100 U
NA-Off Reagent	Quick and effective removal of nucleic acid contamination in the environment	P9121/P9122	250 mL/500 mL

■ qPCR Products



Probe-based qPCR Mix

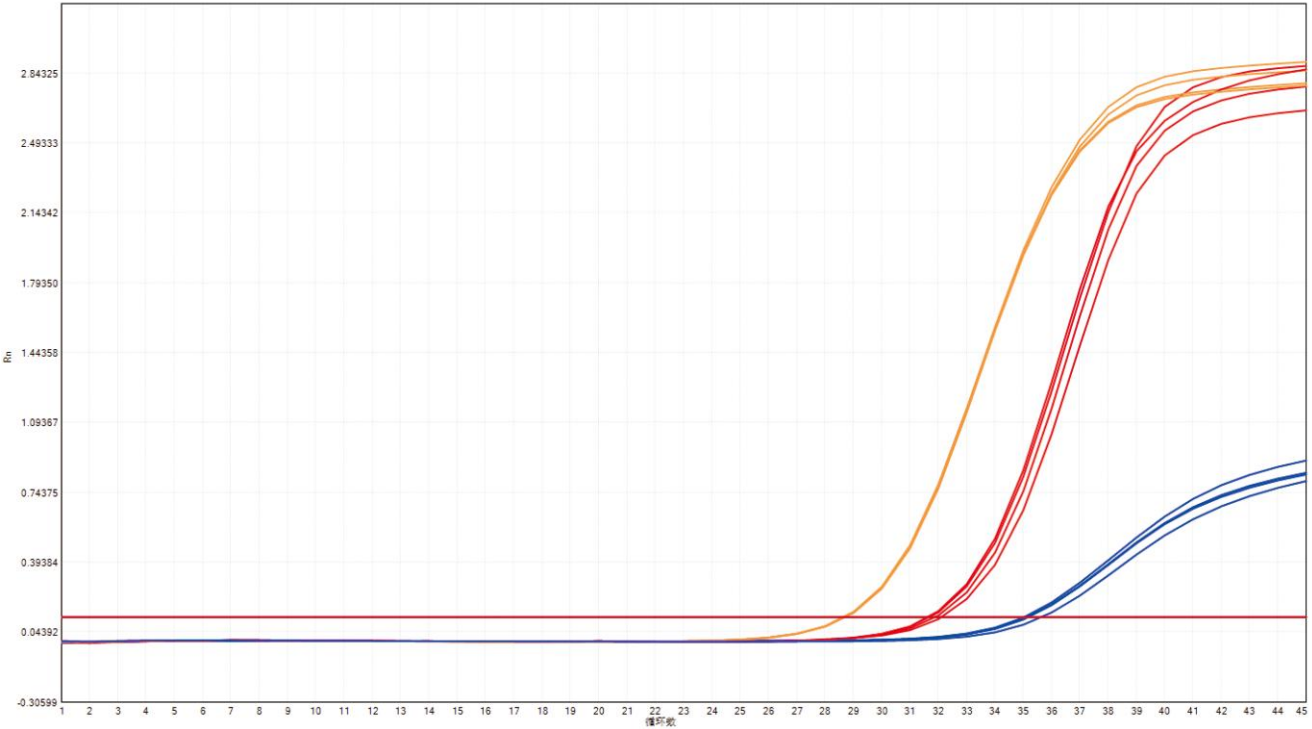
Product Name	Description	Cat. No.	Spec.
HS Probe qPCR Mix	Probe qPCR Mix with antibody modified Taq DNA polymerase	P2201/P2202	1 mL/1 mL×5
HS Probe qPCR Mix with UDG	Introduced with dUTP/UDG anti-contamination system	P2301/P2302	1 mL/1 mL×5
Multiplex Probe qPCR Mix	For Multiplex qPCR	P2601/P2602/P2603/P2604	1 mL/1 mL×5/50 mL/100 mL
Multiplex Probe qPCR Mix Plus U	Introduced with dUTP/UDG anti-contamination system	P2701/P2702/P2703/P2704	1 mL/1 mL×5/50 mL/100 mL
Direct Multiplex Probe qPCR Mix Plus U	Direct qPCR detection of crude samples such as blood, swabs, and tissue homogenates	P2801/P2802/P2803/P2804	1 mL/1 mL×5/50 mL/100 mL

Multiplex Probe qPCR Mix (P2601)/Multiplex Probe qPCR Mix Plus U (P2701)

FEATURES

- Hotstart DNA Polymerase with antibody modification
- Special reaction buffer
- High specificity
- Suitable for multiplex qPCR
- High amplification efficiency
- Introduced with dUTP/UDG anti-contamination system (P2701)

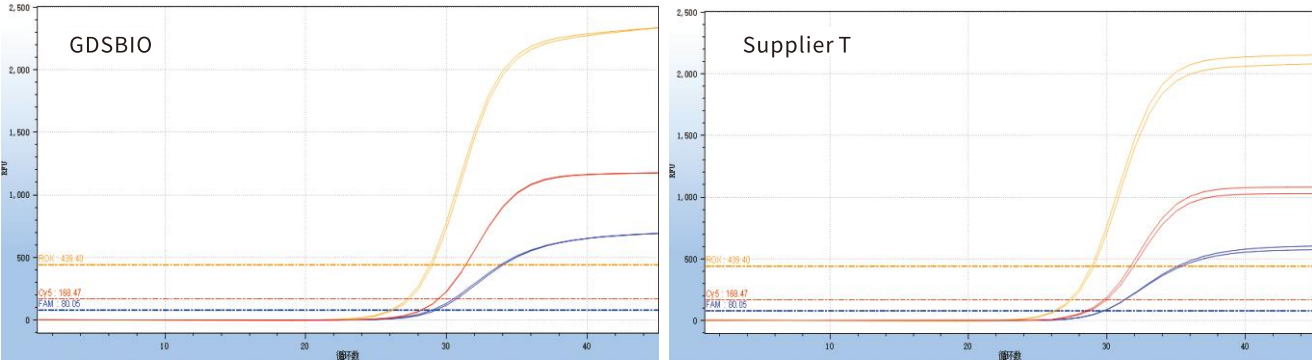
VALIDATION DATA



FEATURES

- Crude samples such as blood, swab and tissue homogenate can be amplified directly
- Simplified detection process
- Hotstart DNA Polymerase with antibody modification
- Special reaction buffer
- High specificity
- Suitable for multiplex qPCR
- High amplification efficiency
- Introduced with dUTP/UDG anti-contamination system

VALIDATION DATA



Human hair follicle samples were directly tested for 3-plex amplification, respectively, and compared with supplier T. The results showed that GDSBio performed better in terms of sensitivity and multiple amplification.



Dye-based qPCR Mix

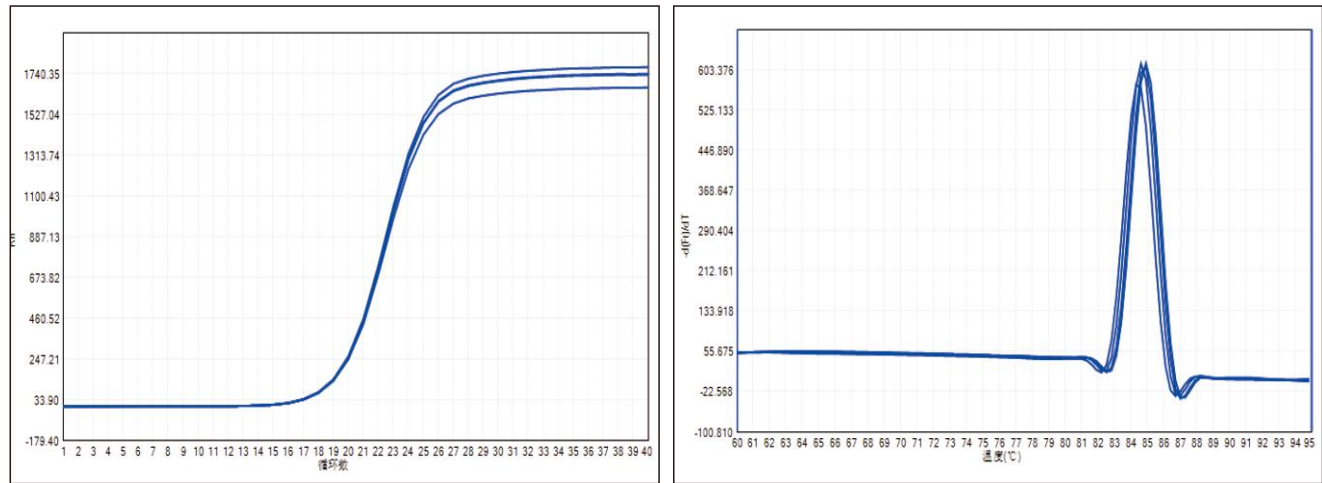
Product Name	Description	Cat. No.	Spec.
SYBR Green qPCR Mix (NO ROX)	Balanced amplification efficiency and specificity; hotstart Taq DNA polymerase with antibody modification	P2091/P2092	1 mL/1 mL×5
SYBR Green qPCR Mix (Low ROX+)	Premixed with ROX reference dye of low concentration; hotstart Taq DNA polymerase with antibody modification	P2091a/P2092a	1 mL/1 mL×5
SYBR Green qPCR Mix (High ROX+)	Premixed with ROX reference dye of high concentration; hotstart Taq DNA polymerase with antibody modification	P2091b/P2092b	1 mL/1 mL×5
SYBR Green qPCR Mix (with ROX+)	Individual ROX reference dye of both low and high concentrations; hotstart Taq DNA polymerase with antibody modification	P2091c/P2092c	1 mL/1 mL×5
Power Green qPCR Mix (NO ROX)	Further optimized specificity; hotstart Taq DNA polymerase with antibody modification	P2101/P2102	1 mL/1 mL×5
Power Green qPCR Mix (Low ROX+)	Premixed with ROX reference dye of low concentration; hotstart Taq DNA polymerase with antibody modification	P2101a/P2102a	1 mL/1 mL×5
Power Green qPCR Mix (High ROX+)	Premixed with ROX reference dye of high concentration; hotstart Taq DNA polymerase with antibody modification	P2101b/P2102b	1 mL/1 mL×5
Power Green qPCR Mix (with ROX+)	Individual ROX reference dye of both low and high concentrations; hotstart Taq DNA polymerase with antibody modification	P2101c/P2102c	1 mL/1 mL×5

Power Green qPCR Mix (P2101)

FEATURES

- Hotstart DNA Polymerase with antibody modification
  - Balanced amplification efficiency and specificity
- SYBR Green I dye
  - Further optimized specificity

VALIDATION DATA



Power Green qPCR Mix has excellent amplification curve efficiency and specificity.

RT-qPCR/RT-PCR & RT Products



One-step RT-qPCR Kit/Mix (probe-based)

Selection Guide

Cat. No.	V5001/V5002	V5005/V5006	V5005L/V5006L	V5007/V5008	V5007L/V5008L	V5009/V5010	V5011/V5011-2
Product Name	One-step Probe RT-qPCR Kit	DSPath™ 4X One-Step Multiplex Master Mix	DSPath™ 4X One-Step Multiplex Master Mix (Lyophilized)	2X One Step Prime RT-qPCR Mix	2X One Step Prime RT-qPCR Mix (Lyophilized)	One-step Probe RT-qPCR Kit V2	One-step Probe RT-qPCR Kit V3
Spec.	200 rxns/ 5,000 rxns	200 rxns/ 5,000 rxns	200 rxns/ 5,000 rxns	200 rxns/ 5,000 rxns	200 rxns/ 5,000 rxns	200 rxns/ 5,000 rxns	200 rxns/ 1,000 rxns
Mixture Format	Enzyme Mix+ 2X Buffer Mix	4X All-in Mix	4X All-in Lyophilized Powder	2X All-in Mix	2X All-in Lyophilized Powder	Enzyme Mix+ 2X Buffer Mix	Enzyme Mix+ 5X Buffer Mix
Mode/Time	F: ~60 min/ S: ~120 min	F: ~60 min/ S: ~120 min	F: ~60 min/ S: ~120 min	F: ~60 min/ S: ~120 min	F: ~60 min/ S: ~120 min	F: ~60 min/ S: ~88 min	F: ~45 min/ S: ~80 min
RT TEMP	48~55°C	48~55°C	48~55°C	48~55°C	48~55°C	50~55°C	50~55°C
PCR Enzyme	Antibody-modified hotstart Taq	Antibody-modified hotstart Taq	Antibody-modified hotstart Taq	Antibody-modified hotstart Taq	Antibody-modified hotstart Taq	Antibody-modified hotstart Taq	Antibody-modified hotstart Taq
Heat-labile UDG	+	+	+	+	+	+	+
Sensitivity	Very high	Ultra high	Ultra high	Very high	Very high	Ultra high	Ultra high
Specificity	Ultra high	Ultra high	Ultra high	Very high	Very high	Very high	Ultra high

F: fast mode; S: standard mode

### DSPath™ 4X One-Step Multiplex Master Mix (V5005)

We offer 4 formulations of this master mix, which have different buffers to meet amplification requirements of different primers:

Product Name	Cat. No.	Spec.	Quantity
DSPath™ 4X One-Step Multiplex Master Mix	V5005	200 rxns	1 mL × 1
	V5006	5000 rxns	25 mL × 1
DSPath™ 4X One-Step Multiplex Master MixB	V5005B	200 rxns	1 mL × 1
	V5006B	5000 rxns	25 mL × 1
DSPath™ 4X One-Step Multiplex Master MixC	V5005C	200 rxns	1 mL × 1
	V5006C	5000 rxns	25 mL × 1
DSPath™ 4X One-Step Multiplex Master MixD	V5005D	200 rxns	1 mL × 1
	V5006D	5000 rxns	25 mL × 1

The performance is comparable to the international well-known brand T, and avoids the problem that the solution of T is viscous, difficult to pipette, and cannot be quickly and accurately sampled in large-scale rapid detection. The viscosity of the DSPath™ master mix is optimized for accurate pipetting.

#### FEATURES

- Robust one-step, all-in-one master mix system for easy reaction assembly
- Detect multiple targets in one reaction
- High sensitivity to detect low-copy targets
- Tolerance of inhibitors commonly found in clinical samples
- Eliminates the risk of cross contamination associated with two-step RT-qPCR protocols

#### Easy to use

Simply add primers, probes, and RNA/DNA templates for rapid reactions.



Figure 1. One-Step RT-qPCR workflow using DSPath™ 4X One-Step Multiplex Master Mix

#### Comparable to first-line brands

Compare with 6 different brands of similar products to detect samples containing the SARS-CoV-2 simulated sample at low or high concentrations, DSPath™ 4X One-Step Multiplex Master Mix has excellent detection rate and accuracy for all 3 targets simultaneously.

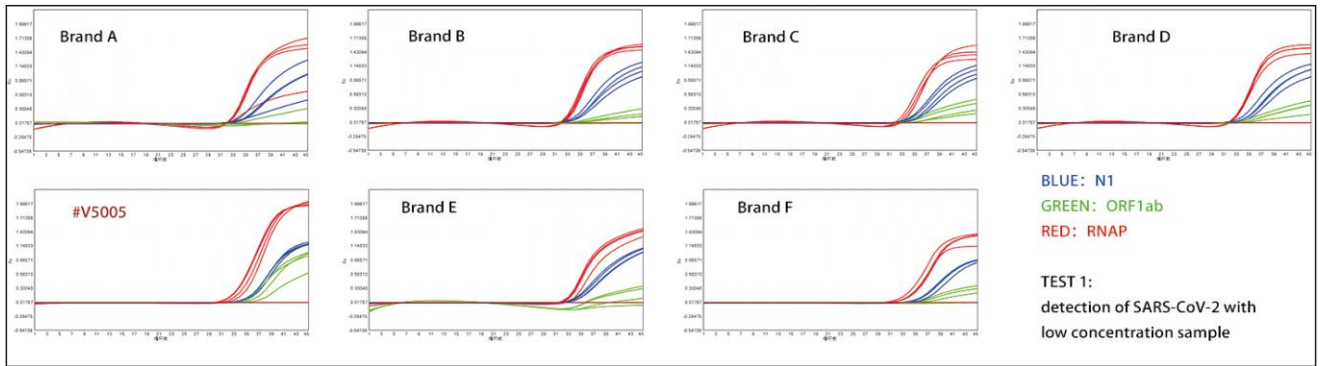


Figure 2. detection of low SARS-CoV-2 sample (compared with other brands)

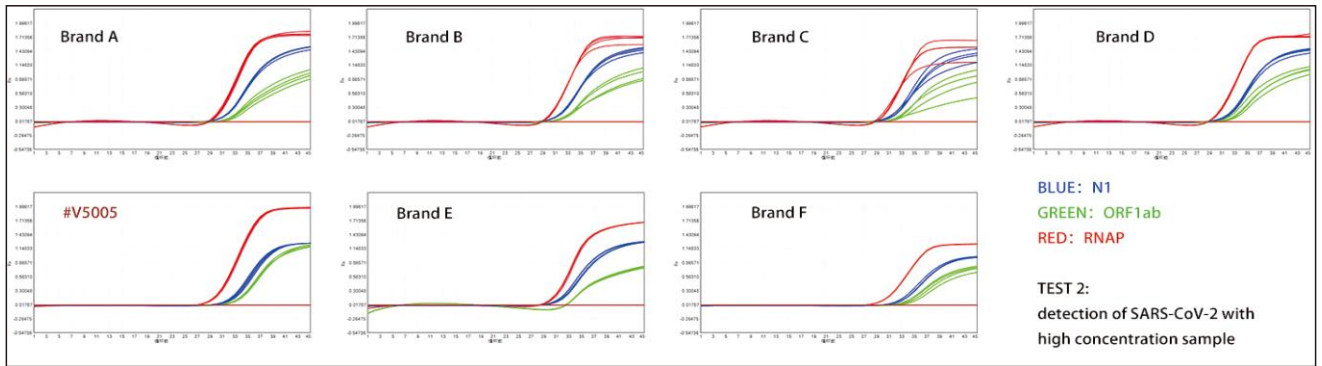


Figure 3. detection of high SARS-CoV-2 sample (compared with other brands)

#### Stable performance

DSPath™ 4X One-Step Multiplex Master Mix is very stable, and you can get the benefit from high stability: keep the master mix in the refrigerator for up to 4 weeks and profit from a quick setup without thawing first.

The stability test of DSPath™ 4X One-Step Multiplex Master Mix/MixB/MixC/MixD was performed at 37°C for 8 days by detecting four targets of SARS-CoV-2. The amplification efficiency of the four products did not change significantly, which means all of them could maintain high stability, and are easy to be transported and stored for a long time.

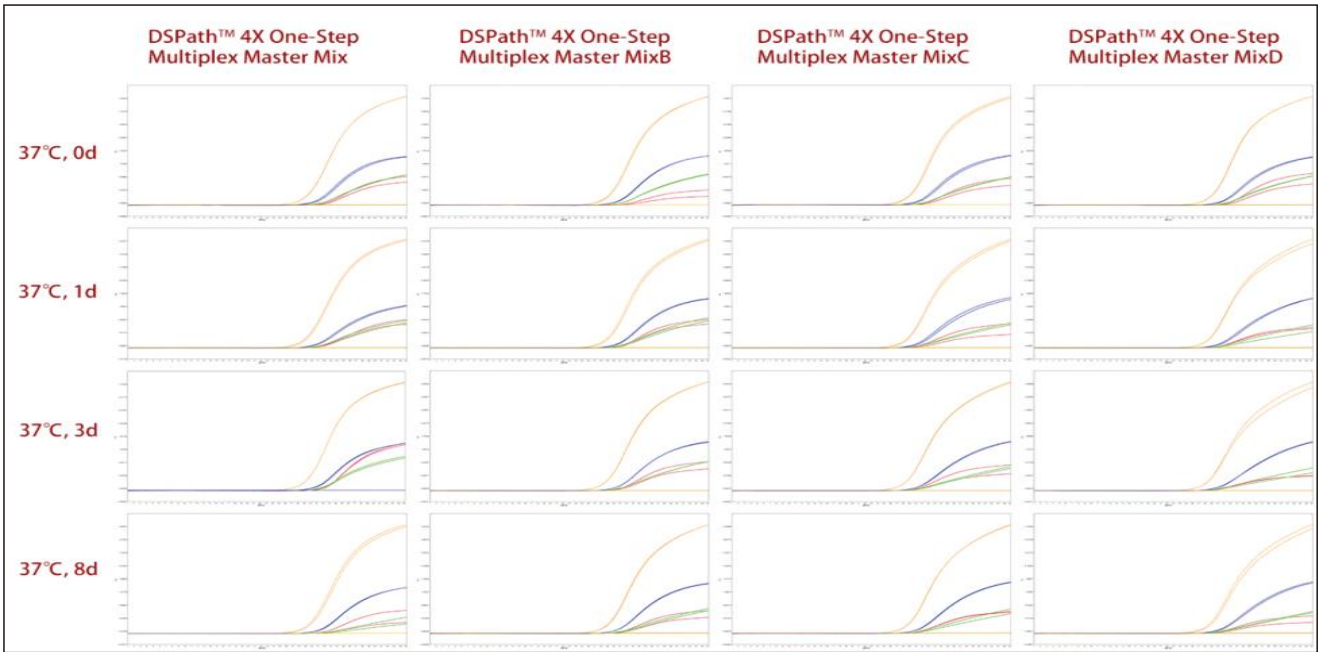


Figure 4. amplification curve of stability test of DSPath™ 4X One-Step Multiplex Master Mix/MixB/MixC/MixD



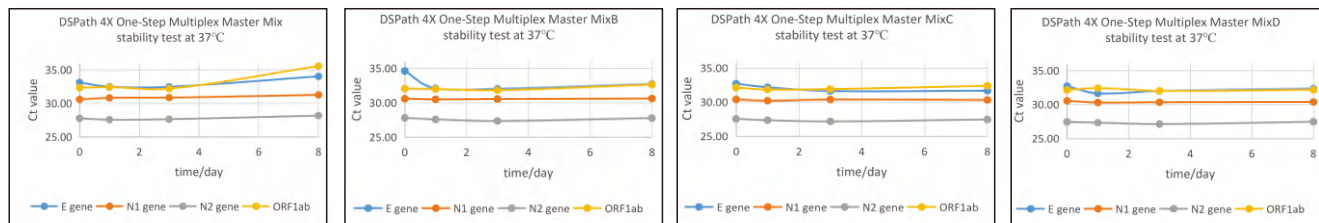


Figure 5. Ct value of stability test of DSPath™ 4X One-Step Multiplex Master Mix/MixB/MixC/MixD

**One-step Probe RT-qPCR Kit V2 (V5009)** Enzyme mix + 2X Buffer

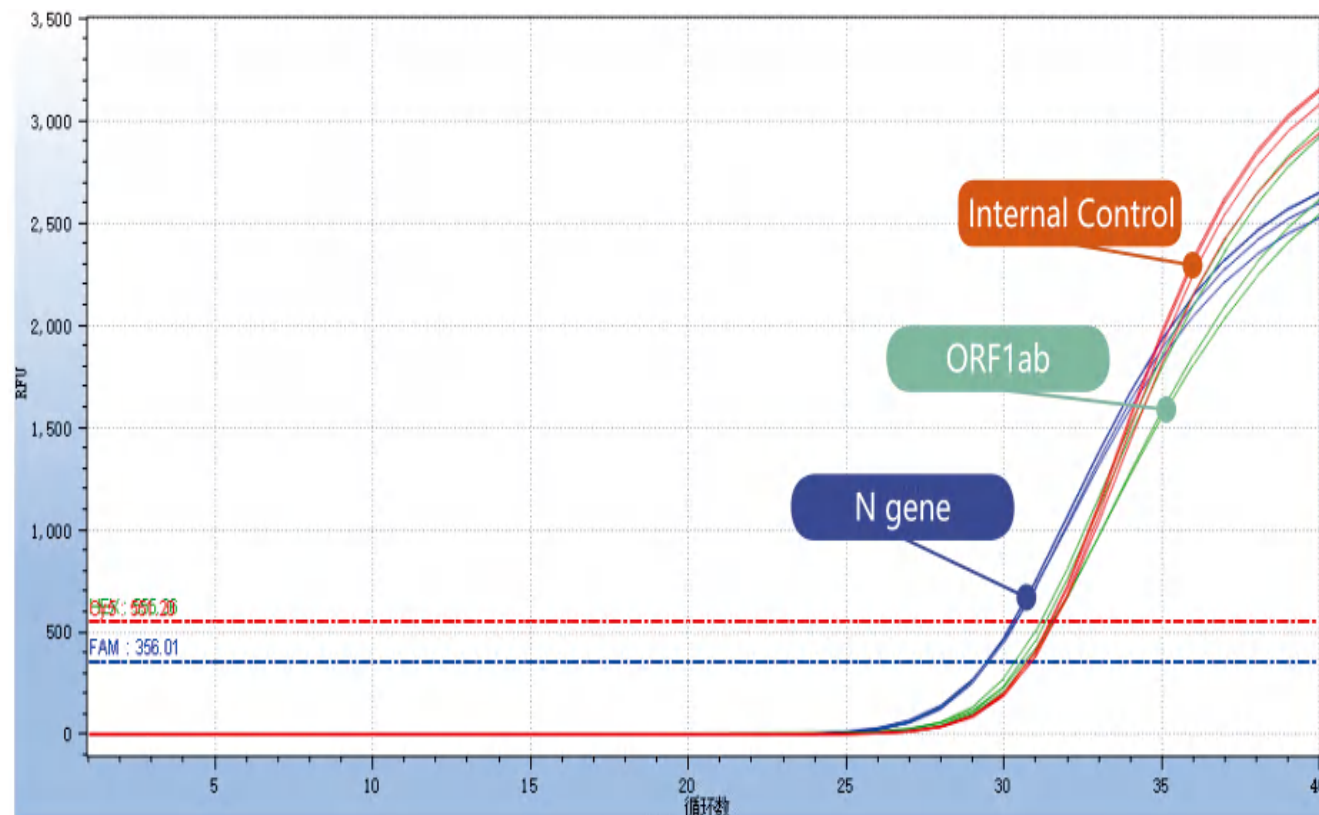
**One-step Probe RT-qPCR Kit V3 (V5011)** Enzyme mix + 5X Buffer

#### FEATURES

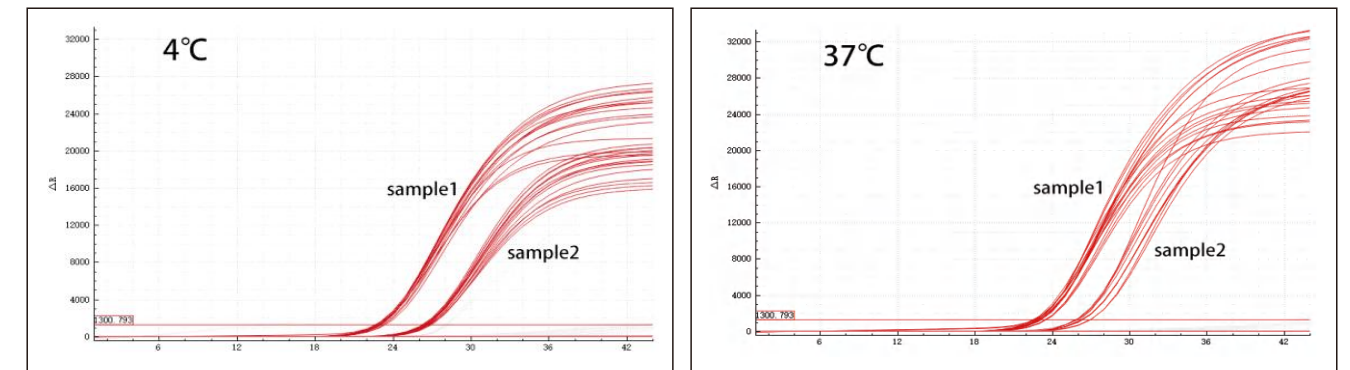
- Fast start-up, 30s hot start
- Reverse transcription at 55 °C to accommodate complex RNA templates
- Contains heat-labile UDG to reduce false-positive contamination
- High sensitivity for detection of low-abundance genes
- High stability, unchanged performance at 4°C and 37°C for one week
- The reaction system can be formulated up to 30 minutes in advance without changing performance
- Saves time by supporting fast program

#### VALIDATION DATA

A. Sensitivity: The LOD of Novel Coronavirus is up to 200 copies/ml



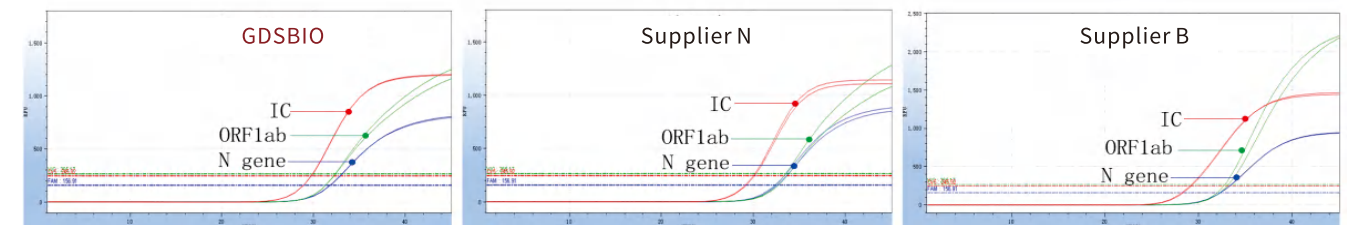
B. Stability: when stored at 4°C and 37°C for a week, the performance does not change significantly:



C. Performance comparison test with other suppliers:

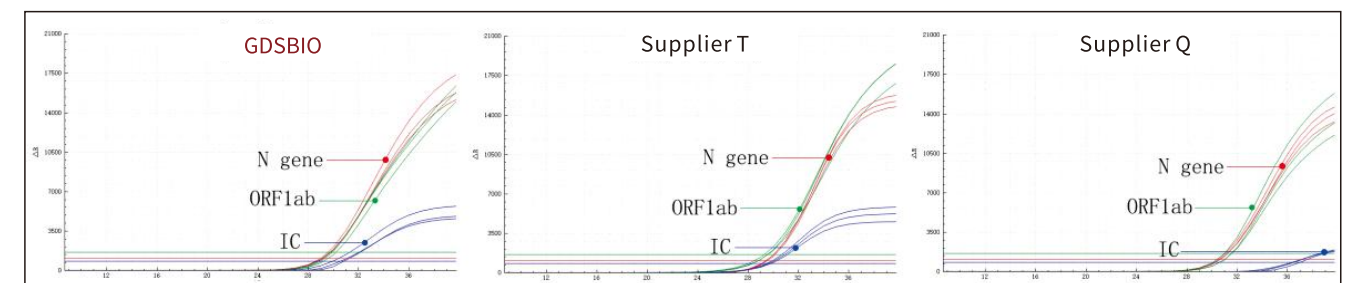
- compared with Chinese manufacturers: better performance than the supplier N and supplier B.

**Test sample: pseudovirus of SARS-CoV-2**

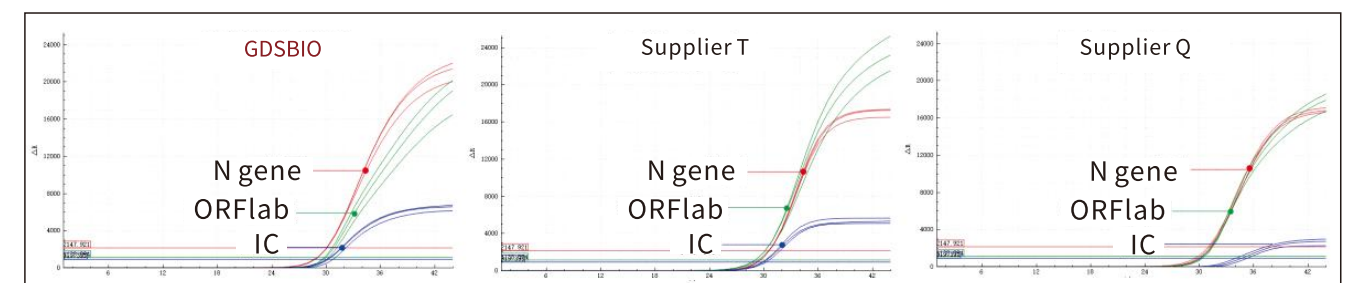


- Comparison with international suppliers: no matter the use of standard mode, or fast mode, performance is not lost to international well-known brands.

**Test sample: pseudovirus of SARS-CoV-2**



Standard Mode



Fast Mode

· No immediate reaction is required after the reaction system is formulated. The system can be stored at RT before reaction, and the performance has no obvious effect within 30 minutes.

Test sample: pseudovirus of SARS-CoV-2

Sheet 1: perform reaction immediately after the reaction system is ready

Dilution fold		1			2			10		
Supplier	Gene	CT	SD	n	CT	SD	n	CT	SD	n
GDSBIO	N	35.53	0.49	10	36.86	0.58	10	39.25	0.75	8
B		36.33	0.56	10	37.54	0.89	10	39.69	1.29	5
GDSBIO	RNaseP	35.97	0.51	10	36.41	0.89	10	38.86	0.62	9
B		35.51	0.46	10	36.69	1.17	10	38.34	0.98	9
GDSBIO	ORF1ab	35.22	0.74	10	36.37	1.09	10	37.29	0.63	4
B		35.74	0.66	10	37.23	2.38	8	38.52	0.20	2

Sheet 2: perform reaction 30min after the reaction system is ready and placed at RT

Dilution fold		1			2			10		
Supplier	Gene	CT	SD	n	CT	SD	n	CT	SD	n
GDSBIO	N	34.88	0.56	10	35.48	0.59	10	39.25	0.75	8
B		35.65	0.81	10	38.24	2.67	7	39.69	1.29	5
GDSBIO	RNaseP	35.80	0.44	10	35.76	0.59	10	38.86	0.62	9
B		34.80	0.27	10	36.00	1.06	10	38.34	0.98	9
GDSBIO	ORF1ab	35.65	0.62	10	37.53	1.06	8	37.29	0.63	4
B		null	null	0	null	null	0	38.52	0.20	2

The performance of V5009 does not change when the reaction system is prepared 30 minutes in advance. However, the testing performance of Company B product decreased significantly after it was left at room temperature for 30min after reaction system was ready.

One-step RT-qPCR Kit (dye-based)

Product Name	Description	Cat. No.	Spec.
Power Green One-step RT-qPCR Kit	One-step completion of RNA reverse transcription and SYBR green I dye-based qPCR	V6001-A/V6001-B	200 rxns/5,000 rxns

RT-PCR Products

Product Name	Description	Cat. No.	Spec.
2X One Step RT-PCR Mix	One-step completion of RNA reverse transcription and end-point PCR; One-tube Mix	RP1001	50 rxns
2X One Step RT-PCR Mix	Separated Enzyme Mix and Reaction Mix	RP1001B	50 rxns
RT-PCR Kit	Non-premixed RNA reverse transcription kit	R1011/R1012	20 rxns/100 rxns
RT-PCR Mix for qPCR	Form: reverse transcriptase + highly premixed reaction buffer	R1031	100 rxns
PowerScript RT SuperMix	All-in-one reverse transcription mix	R1081/R1082/R1083	100 rxns/500 rxns/2,500 rxns

Reverse Transcription Related Products

Product Name	Description	Cat. No.	Spec.
M-MLV Reverse Transcriptase	Optimal activity temperature 37~42°C	R1041/R1042	5,000 U/10,000 U
Gold Reverse Transcriptase	Optimal activity temperature 50~55°C	R3001/R3002	2,000 U/10,000 U
RNase Inhibitor (Murine)	Recombinant protein of murine origin	R4001	20,000 U
Oligo d(T)15 Primer	Reverse transcription using eukaryotic mRNA as template	R2021	20 µL
Random Primer	Reverse transcription using all types of RNA as template	R2031	20 µL

NGS Library Preparation Products





## GDSBio NGS Library Preparation Solution

NGS Library Preparation Workflow	Hybrid Library Preparation						Amplicon Library Preparation Module		
	Common Kit		Enzyme Digestion Kit		Fast Kit (Illumina platform)	Module			
	Illumina platform	MGI platform	Illumina platform	MGI platform					
cDNA First-Strand Synthesis	/	/	/	/	/	#K020	/		
cDNA Second-Strand Synthesis	/	/	/	/	/	#K021 #K022	/		
Fragmentation	/		/			#K024	#K023		
End Repair/dA-Tailing	#K001							#K025	
Adaptor Ligation	#K001S		#KM001			#K004	#K009	#K026	#K031
Cleanup/Size Selection	#K002		#KM001S			#K002	#KM004	#K211	#K026
	#K003	#KM001S	#K003	#KM004	#K211	#K211	#K031		
Enrichment	#K003	#NC1011	#K003	#NC1011	#K211	#K211	#K031		
	#K003	#NC1011	#K003	#NC1011	#K211	#K211	#K031		
Enrichment	#K003	#NC1011	#K003	#NC1011	#K211	#K211	#K031		
	#K003	#NC1011	#K003	#NC1011	#K211	#K211	#K031		
Cleanup	#NC1011		#NC1011			#K006 #K007			
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## NGS Library Prep Kit

Product Name	Description	Cat. No.	Spec.
Fast DNA Library Prep Kit	Common library preparation kit for Illumina platform	K001-A/K001-B	24 rxns/96 rxns
Fast DNA Library Prep Kit V2	The enzyme and buffer for end repair are separated	K001S-A/K001S-B	24 rxns/96 rxns
Fast DNA Library Plus Prep Kit	Enzyme digestion library preparation kit for Illumina platform	K004-A/K004-B	24 rxns/96 rxns
ShortSeq Library Prep Kit	Fast library preparation kit for Illumina platform	K009-A/K009-B	24 rxns/96 rxns
Fast DNA Library Prep Kit for MGI	Common library preparation kit for MGI platform	KM001-A/KM001-B	24 rxns/96 rxns
Fast DNA Library Prep Kit for MGI V2	The enzyme and buffer for end repair are separated	KM001S-A/KM001S-B	24 rxns/96 rxns
Fast DNA Library Plus Prep Kit for MGI	Enzyme digestion library preparation kit for MGI platform	KM004-A/KM004-B	24 rxns/96 rxns

### FEATURES

Library Preparation Kits	#K001/K001S/KM001/KM001S	#K004/KM004	#K009
Features	1 Wide sample compatibility 2 High efficiency in library preparation 3 Compatible with PCR-free workflow 4 Complete Fragmentation and End Repair simultaneously(#K004/KM004)		1 Short time for library preparation 2 Easy to operate 3 No need to design and synthesize primers

### VALIDATION DATA (#K001/K004)

1. High conversion rate of library.

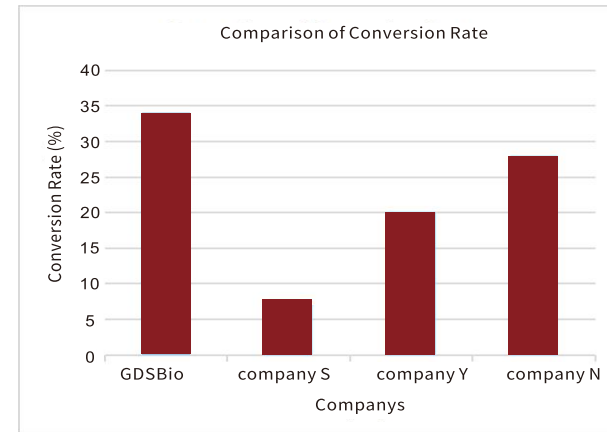


Figure 1 Library conversion rate when DNA input was 60ng.

2. Whether before or after amplification, compared with other manufacturers, the amplification is very superior.

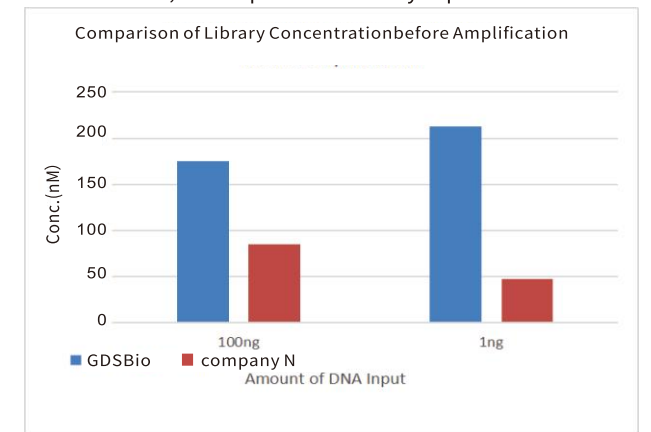


Figure 2 The concentration of unamplified library obtained when the DNA sample was 100ng and 1ng, and the end repair and adaptor ligation were performed with the library construction kits of different manufacturers.

3. The time of fragmentation is flexible and controllable. (#K004)

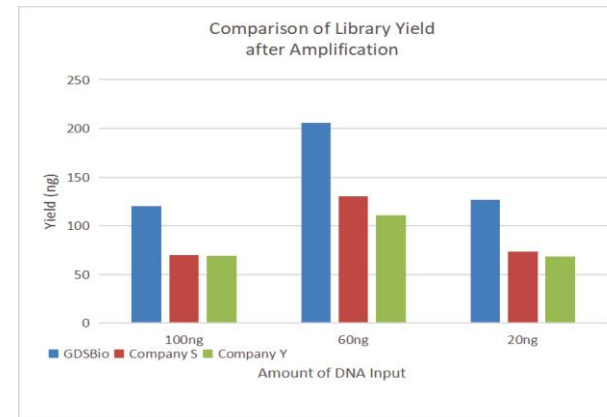


Figure 3 The total amount of library obtained after amplified with the same cycles when the DNA sample was 100ng, 60ng, and 20ng, and the end repair and adaptor ligation were performed with the library construction kits of different manufacturers.

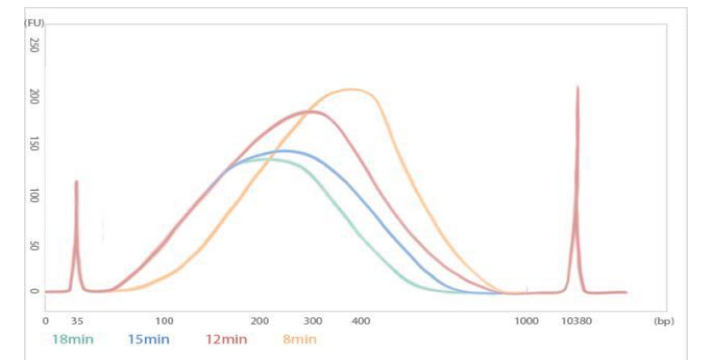


Figure 4 The input DNA was 500ng, and the fragmentation time was 8min, 12min, 15min, 18min, respectively. Image obtained by fragment size analysis and processing with Agilent Bioanalyzer 2100.

4. Strong product stability. The fragmentation effect is equally significant whether compared with the same batch or across batches. (#K004)

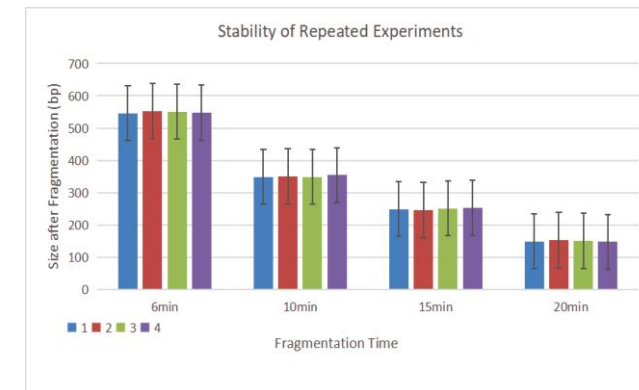


Figure 5 Fragmentation effect between the same batch for 6min, 10min, 15min and 20min respectively.

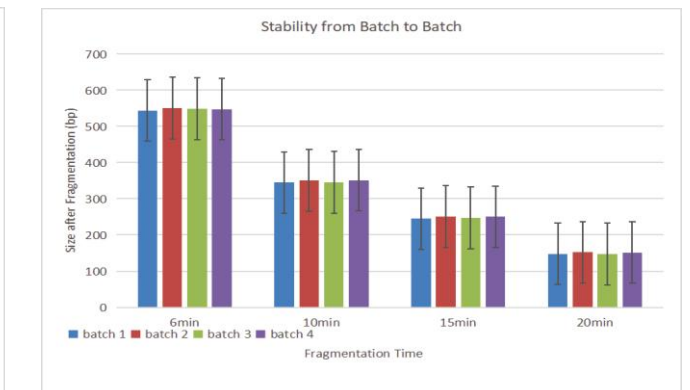


Figure 6 Fragmentation effects between four different batches for 6min, 10min, 15min and 20min respectively.

NGS Library Prep Module

Product Name	Description	Cat. No.	Spec.
GDS RNA First Strand Synthesis Module	cDNA first strand synthesis	K020-A/K020-B	24 rxns/96 rxns
GDS Directional RNA Second Strand Synthesis Module	cDNA second strand synthesis	K021-A/K021-B	24 rxns/96 rxns
GDS Non-Directional RNA Second Strand Synthesis Module	cDNA second strand synthesis	K022-A/K022-B	20 rxns/100 rxns
GDS Fragmentation & End Prep Module	DNA fragmentation & end repair/dA-tailing	K023-A/K023-B	24 rxns/96 rxns
GDS dsDNA Fragmentase	DNA fragmentation	K024-A/K024-B	50 rxns/250 rxns
GDS End Preparation Module	End repair/dA-tailing	K025-A/K025-B	24 rxns/96 rxns
GDS Ligation Module	Adaptor ligation	K026-A/K026-B	24 rxns/96 rxns
HIFI Multiplex RT-PCR Master Mix	PCR enrichment of RNA template	K006-A/K006-B/K006-C	100 rxns/1,000 rxns/ 5,000 rxns
HIFI Library PCR Master Mix	PCR enrichment	K007-A/K007-B/K007-C	40 rxns/400 rxns/ 2,000 rxns
NGS Multiplex PCR Master Mix	PCR enrichment	NM1001/NM1002/ NM1003	40 rxns/400rxns/ 2,000 rxns
NGS Multiplex PCR Master Mix II	Different ion concentration	NM2001/NM2002/ NM2003	40 rxns/400rxns/ 2,000 rxns
DSPath NGS Multiplex PCR Master Mix	Amplicon library preparation	K030-A/K030-B	80 rxns/400 rxns
DSPath NGS Multiplex PCR Master Mix II	Higher ion concentration	K031-A/K031-B	80 rxns/400 rxns
GDSPure DNA Selection Magbeads	DNA size selection and cleanup	NC1011/NC1012/ NC1013	5 mL/60 mL/450 mL

DSPath NGS Multiplex PCR Master Mix (K030/K031)

Applications

pathogenic microorganism tNGS; cancer gene tNGS; genetic disease tNGS; scientific research

FEATURES

Excellent amplification performance: low mismatch rate and high specificity, capable of conducting super multiple amplification to construct high-quality DNA libraries.

Easy to use: all-in-one master mix, reducing operation and saving time in library preparation.

Wide applicability: compatible with various samples such as blood, nasal / throat swabs, viral cultures, and is widely used in pathogenic microorganism detection, cancer gene detection, scientific research, and other fields.

VALIDATION DATA

The DNA pathogen library constructed using GDSBio DSPath NGS Multiplex PCR Master Mix was tested using 480-plex pathogen panel, with a target read detection rate of 65 %, significantly higher than other similar products; the ratio of primer dimer reads is as low as 2.5 %, significantly lower than other similar products; at the same time, the homogeneity of the library is good.

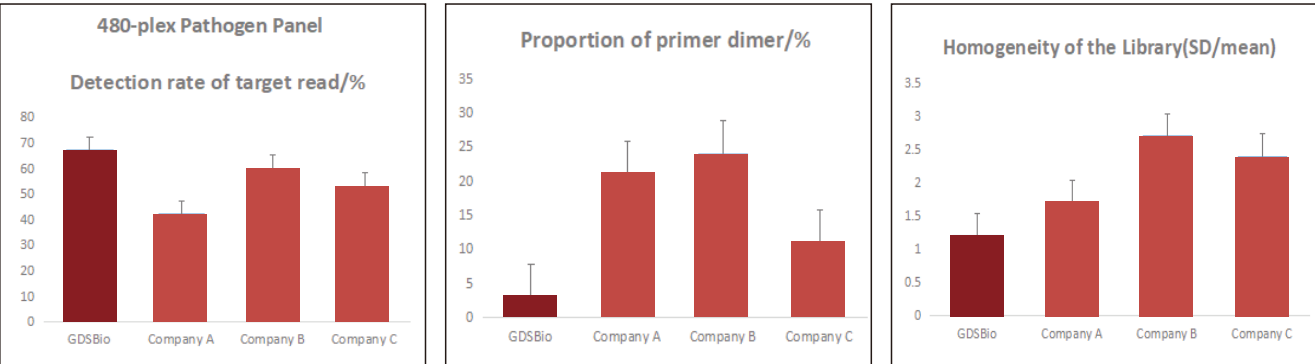


Fig. 1 Detection rate of target reads

Fig. 2 Proportion of primer dimer

Fig. 3 Homogeneity of the Library

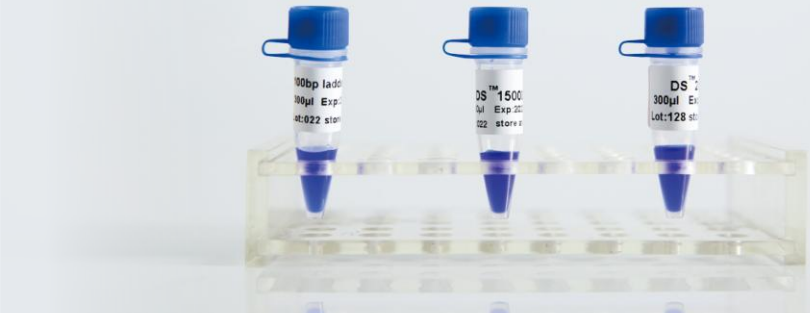
NGS Library Prep Adaptor

Product Name	Description	Cat. No.	Spec.
Multiplex Oligos 1 for Illumina	Short Adapter for different combinations of dual index libraries	K002-A02/K002-A	24 rxns/192 rxns
Multiplex Oligos 2 for Illumina	For another 96 different combinations of dual index libraries	K002-B	192 rxns
UDI UMI Adapters Primers for Illumina	UDI UMI Adapter	K003-A/K003-B/K003-C/ K003-D	96 rxns/96 rxns/ 96 rxns/96 rxns
TN Primer Index list-A	Primers for ShortSeq Library Prep Kit	K211-A	100 rxns

NGS Library Prep Enzyme

Product Name	Description	Cat. No.	Spec.
Klenow Fragment (3´→5´ exo-)	5U/μL	K010-A/K010-B/K010-C	100 U/200 U/1,000 U
T4 DNA Polymerase (5U/μL)	End repair	K011-A/K011-B/K011-C/K011-D	100 U/500 U/2,000 U/ 5,000 U
T4 DNA Ligase (Fast) (5U/μL)	Adaptor ligation	K012	1,000 U
T4 Polynucleotide Kinase (10U/μL)	Phosphorylation of DNA or RNA 5' terminal	K013-A/K013-B/K013-C	50 U/2,500 U/10,000 U

DNA Electrophoresis Products





GDSBio provides two series of DNA Markers/Ladders (DNA Molecular Weight) to indicate the base pairs and the concentration of DNA at the range of 25bp~23kb: Classic DNA Marker, and LD DNA Marker, they are designed to be used with different electrophoretic nucleic acid dyes.

Suggestions on Staining Method

Type of DNA Marker	Suggested staining method of DNA gel	
	Traditional staining dye (such as EB)	Novel staining dye (such as GelRed)
Classic DNA Marker	Precast or post-electrophoresis gel staining	Post-electrophoresis gel staining
LD DNA Marker	Not suggested	Precast

DNA Molecular Weight

Indicating Range	Classic DNA Marker			LD DNA Marker		
	Product Name	Cat. No.	Spec.	Product Name	Cat. No.	Spec.
80~300bp	10bp Ladder	M1011/M1012	50 µg/50 µg×5	/	/	/
60~300bp	20bp Ladder	M1021/M1022	50 µg/50 µg×5	/	/	/
25~700bp	Low Ladder	M1031/M1032	50 µg/50 µg×5	LD Low Ladder	LM1031/LM1032	300 µL/300 µL ×3
50~500bp	50bp Ladder	M1041/M1042	50 µg/50 µg×5	LD 50bp Ladder	LM1041/LM1042	300 µL/300 µL ×3
50~1000bp	50bp Ladder Plus	M1051/M1052	50 µg/50 µg×5	LD 50bp Ladder Plus	LM1051/LM1052	300 µL/300 µL ×3
100~1,500bp	60bp Ladder	M1061/M1062	50 µg/50 µg×5	LD 60bp Ladder	LM1061/LM1062	300 µL/300 µL ×3
100~3,000bp	60bp Ladder Plus	M1071/M1072	50 µg/50 µg×5	LD 60bp Ladder Plus	LM1071/LM1072	300 µL/300 µL ×3
100~600bp	Marker 1	M1081/M1082	50 µg/50 µg×5	LD Marker 1	LM1081/LM1082	300 µL/300 µL ×5
100~1200bp	Marker 2	M1091/M1092	50 µg/50 µg×5	LD Marker 2	LM1091/LM1092	300 µL/300 µL ×3
100~2,000bp	DS2000	M1101/M1102	50 µg/50 µg×5	LD DS2000	LM1101/LM1102	300 µL/300 µL ×5
100~5,000bp	DS5000	M1111/M1112	50 µg/50 µg×5	LD DS5000	LM1111/LM1112	300 µL/300 µL ×5
200~4,500bp	Marker 3	M1121/M1122	50 µg/50 µg×5	LD Marker 3	LM1121/LM1122	300 µL/300 µL ×5
200~1,500bp	Marker 11	M1131/M1132	50 µg/50 µg×5	/	/	/
200~2,000bp	Marker 12	M1141/M1142	50 µg/50 µg×5	/	/	/
200~4,000bp	200bp Ladder	M1151/M1152	50 µg/50 µg×5	LD 200bp Ladder	LM1151/LM1152	300 µL/300 µL ×3
250~15,000bp	DS15000	M1161/M1162	50 µg/50 µg×5	LD DS15000	LM1161/LM1162	250 µL/250 µL ×5
500~10,000bp	1kb Ladder	M1181/M1182	50 µg/50 µg×5	LD 1kb Ladder	LM1181/LM1182	250 µL/250 µL ×5
100~10,000bp	1kb Ladder Plus	M1191/M1192	50 µg/50 µg×5	LD 1kb Ladder Plus	LM1191/LM1192	300 µL/300 µL ×3
125~2,3130bp	Lambda DNA/Hind III	M1201/M1202	50 µg/50 µg×5	LD Lambda DNA/Hind III	LM1201/LM1202	300 µL/300 µL ×3
250~10,000bp	DS10000	M1221/M1222	50 µg/50 µg×5	LD DS10000	LM1221/LM1222	300 µL/300 µL ×5
500~15,000bp	Marker 4	M1231/M1232	50 µg/50 µg×5	LD Marker 4	LM1231/LM1232	250 µL/250 µL ×5
100~1,5000bp	DS15000+2000	M1241/M1242	50 µg/50 µg×5	/	/	/
500~5,000bp	500bp Ladder	M1251/M1252	50 µg/50 µg×5	LD 500bp Ladder	LM1251/LM1252	300 µL/300 µL ×3

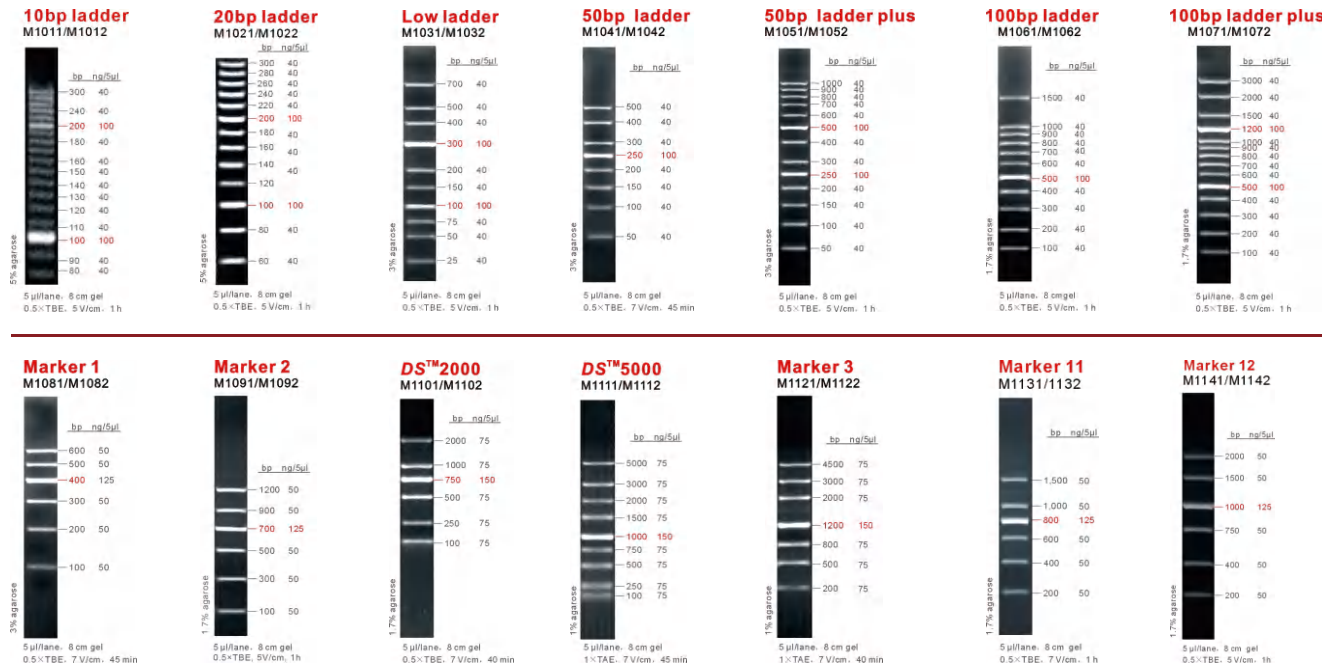
DSRed+LD \*

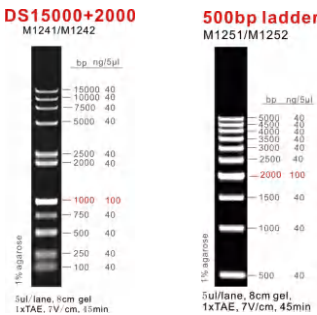
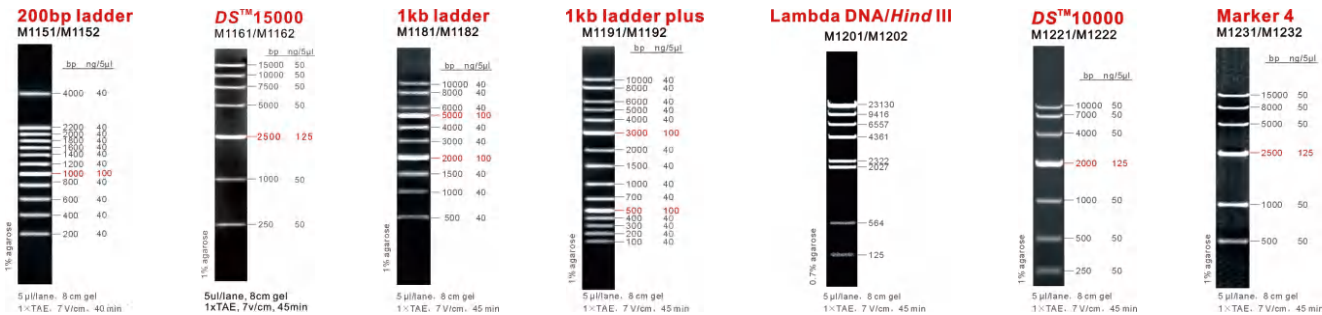
Match the Dye with Marker to Obtain Perfect Electrophoresis Results

\*DSRed refers to GDSBio DSRed Nucleic Acid Stain; LD refers to GDSBio LD DNA marker “DSRed+LD” significantly reduces the impact of large molecular dyes in pre-stained gels on DNA fragment migration, achieving effective separation of DNA fragments in electrophoresis results.



Electrophoresis Band Pattern of DNA Markers





Product Customization



GDSBio provides DNA Marker/Ladder customization services, we have the following advantages:

- 1. Nearly 20 years of production experience, mature technology
- 2. Clear and bright bands, accurate molecular weight
- 3. Stable quality, suitable for use at room temperature
- 4. Support personalized customization with different DNA band numbers, molecular weight, concentration and others

Electrophoresis Related Products

Product Name	Description	Cat. No.	Spec.
50X TAE Buffer	Suitable for isolation of nucleic acids larger than 1,500bp	M9021	500 mL
10X TBE Buffer	Suitable for isolation of nucleic acids small than 1,500bp	M9031	500 mL
6X Gel Loading Dye	Indicating dye: bromophenol blue, xylene gyand FF	M9041	1 mL×5
6X Gel Loading Dye, Blue	Indicating dye: bromophenol blue	M9051	1 mL×5
6X Gel Loading Dye, Three-color	Indicating dye: orange G, bromophenol blue, xylene gyand FF	M9061	1 mL×5
6X Gel Loading Dye, Orange	Indicating dye: orange G, xylene gyand FF	M9071	1 mL×5
6X Gel Loading Dye, SDS+	Electrophoresis of DNA with high protein; Indicating dye: bromophenol blue, xylene gyand FF	M9081	1 mL×5
DSView Nucleic Acid Stain 20,000X	Suggested Marker: Classic DNA Makers (precast or post-electrophoresis gel staining)	M7011/M7012	1 mL/10 mL
DSRed Nucleic AcidStain 10,000X	Suggested Marker: LD DNA Makers (precast)	M7021/M7022	0.5 mL/0.5 mL×5
Agarose	High purity and Low EEO	N9051/N9052	500g/100g

Nucleic Acid Extraction Products





**RNA Extraction**

Product Name	Description	Cat. No.	Spec.
TRAzol Reagent	Classic RNA Lysis Solution	R1021/R1022	20 mL/100 mL
General RNA Extraction Kit	High-efficiency extraction of RNA using TRAzol and silica gel purification column	R1051	50 preps

**Specimen Collection**

Product Name	Description	Cat. No.	Spec.
Disposable Virus Sampling Tube (Non-inactivation Type)	CE certified, classic virus preservation solution	F6001a/F6002a/ F6003a	50 pcs/box (2 mL/ 5 mL/10 mL tube)

**Nucleic Acid Extraction Related Products**

Product Name	Description	Cat. No.	Spec.
Proteinase K Solution	20 mg/mL	N9011	1 mL
Proteinase K Solution	100 mg/mL	N9012	1.6 L
Proteinase K Powder	Specific activity $\geq 30$ U/mg	N9016/N9017	100 mg/1 g
Lysozyme	50 mg/mL	N9021	1 mL $\times$ 5
Lyticase	10 U/ $\mu$ L	N9031/N9032	150 $\mu$ L/300 $\mu$ L
RNase A	10 mg/mL	N9041	1 mL
RNase A	100 mg/mL	N9042	1 mL
RNase A Powder	Specific activity $\geq 3,000$ U/mg	N9046/N9047	100 mg/1 g
DEPC-treated Water	RNase-free ultrapure water	R2042	100 mL
RNA Stabilization Solution	Transportation at RT and long-term storage of RNA samples	R2072	100 mL
Mag Beads A/B/C/B	Fast magnetic response, High yields nucleic acid with high purity	N8011/N8021/ N8031/N8041	380 mL/380 mL/ 380 mL/100 mL
DS Carrier	Improve the binding and elution efficiency of trace RNA	R6001	1 mL
DS Carrier		R7001	200 $\mu$ g