

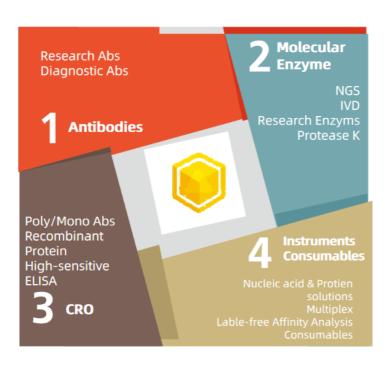
Introduction of ABclonal Molecular Enzyme Products



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Business Overview

Reagents+CRO+Instruments+Consumables Integrated Procurement Supplier



Composition of Molecular Enzyme Product lines

01

Compositions

For Research

- Extraction of Nucleic Acid
- Enzymes
- Endonuclease
- PCR
- qPCR
- RT
- Gene Clone

NGS Lib Prep

- Sample preparation
- Library Preparation
- Capture Kits
- Adapter Primer

For Diagnostic

- Taqman qPCF reagents
- Lyophilized qPCR reagents
- Directly qPCR reagents

Integrated Solutions

Whole process solution

For Research

ABclonal has a complete scientific research molecular enzyme product line, which can be divided into 5 categories

Catagories	Products	
PCR	Gloria Nova HS, PowerPol	
qPCR	Universal series, Genious series	
Reverse Transcription	ABscript III series, ABscript II series	
Gene clone	2X MultiF Seamless Assembly Mix, Endonuclease, T4 ligase	
Extraction of Nucleic Acid	Gel, Plasmid, DNA, RNA, Trizol	

NGS

ABclonal has product both for illumina and MGI platform, applied in fields of research and development of diagnostic and clinical products.

Catagories	Products
DNA Lib	Rapid series (base on sonication), FS series (based on fragmentase), One-Step series (base on Tn5 Transposase), Scale series (for Single strand DNA Lib Prep)
RNA Lib	mRNA,Stranded mRNA,fast RNA,Whole RNA,small RNA mRNA capture module,rRNA deletion module
Others	Capture reagents,Adaptors(MGI,illumina),Extraction kits,DNA Clean-up & Size-Selection magnetic-beads,Lib pooling

For Diagnostic

ABclonal provides different enzymes and kit for diagnostic, included taqman qPCR, RT-qPCR mix, and Lyophilized qPCR reagents.

分类	部分产品
Mix	taqman qPCR Mix, one step RT-qPCR Mix, Directly PCR
Core enzymes for IVD	Abs for Taq, Reverse Transcriptase, RNase inhibitor,heat-liable UDG,Proteinase K,Taq
Lyophilized reagent for IVD	High concentration core enzymes (glycerol-free), other lyophilized enzymes & service

Integrated Solutions

ABclonal has several solutions for different application

Field	İs	部分产品			
Canc	er	FFPE, ct[ONA, MRD, Auton	nation integrated so	olution for NGS
Resea	rch		ChIP-seq, Cut-Ta	g, Single-cell seque	encing
Diagno	Diagnostic		mNGS, Covid-19, Veterinary inspection		
Section	Extraction	QC for DNA	Lib Prep	Sequencing	Analysis
5/	AA				
		====			

FFPE whole process solution All kits involved could be supplied by ABclonal



Product for Research-2021

Application	Cat. No.	Products	Launch time
	RK20718/RK20719	PowerPol series PCR Mix	
PCR	RK20714 / <mark>RK20717</mark>	🜟 Gloria Nova HS series Kit & Master Mix	
	RK21203	2X Universal SYBR Green Fast qPCR Mix	
qPCR	RK21204 / RK21205/ RK21206 /RK21207	Genious series SYBR Green Fast qPCR Mix	
RT	RK21400 / RK20400 / RK20402 / RK20403	ABScript II series RT Kits&Enzymes	
кі	RK20408 / RK20428 / RK20429	ABScript III series RT Kits&Enzymes	
Gene clone	RK21501 / RK21500	T4 DNA Ligase / T4 DNA Ligase (High Conc.)	
	RK20500	DNA Quick Ligation Kit	
Extraction of Nucleic Acid		Gel, Plasmid, DNA, RNA, Trizol	Sep-Oct

PowerPol series PCR Mix (RK20718 & RK20719)

The PowerPol series PCR Mix is a widely used basic reagent that locates the most common PCR usage scenarios. It can be used for mouse tail identification, genetic marker typing, plant transgene identification, colony PCR, gene cloning and other experiments. It is very trustworthy

Features:

- •Universality: Powerpol has a high amplification success rate for different species (rats, plants, microorganisms), different GC content (high GC, low GC), different extraction methods (rough extraction, fine extraction), and different sample source (gDNA, cDNA, plasmids).
- •Multifunctional: Powerpol's fidelity is 6.5 times than wild *Taq* enzyme, which can be used for gene detection and typing, and can also meet the needs of general vector construction
- Cost-effective



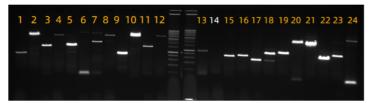
PowerPol 2X PCR Mix Catalog:RK20718



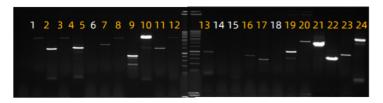
PowerPol 2X PCR Mix with Dye Catalog: RK20719

Data: high amplification success rate





Vendor B 19/24



1-2: PCR from Human gDNA, from 807bp to 3.73kb; 3-4: PCR from Rat gDNA, from 1323bp to 3648bp; 5-6: PCR from Mouse gDNA, from 1395bp to 5187bp; 7-8: PCR from Wheat gDNA, from 1149bp to 3762bp;

9-10: PCR from Rice, from 803bp to 3729bp;

11-12: PCR from Human cDNA, from1449bp to 4043bp

Vendor A 17/24



Vendor C 16/24



13-14: plant cDNA模板,from 1000bp to 2442bp

15-16: GC%: 62.7%-78.1%, from 800bp to 735bp;

17-18: AT%: 59%-77%, from 604bp to 994bp; ;

19-20: PCR from Arabiopsis gDNA, from 1000bp to 2715bp;

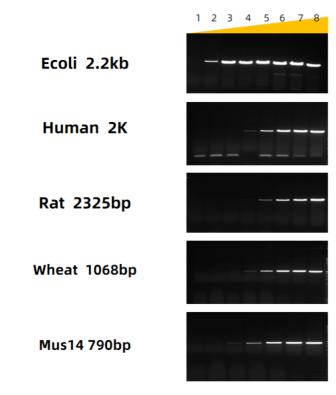
21-22: PCR from Lambda DNA, from 1000bp to 3000bp;

23-24: PCR from Zea Mays, from 1000bp to 3000bp;

Comparing the amplification success rate of PowerPol and other competing products from 24 primers

Conclusion: PowerPol 2X PCR Mix (RK20718) can successfully amplify 23 pairs of primers, and the amplification success rate is significantly higher than other competing products

Data: High sensitivity

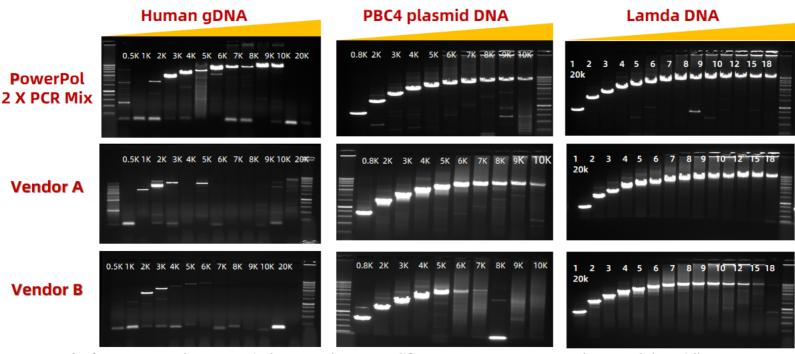


Concentration:

- 1. 1pg
- 2. 10pg
- 3. 100pg
- 4. 1ng
- 5. 10ng
- 6.50ng
- 7.100ng
- 8. 200ng

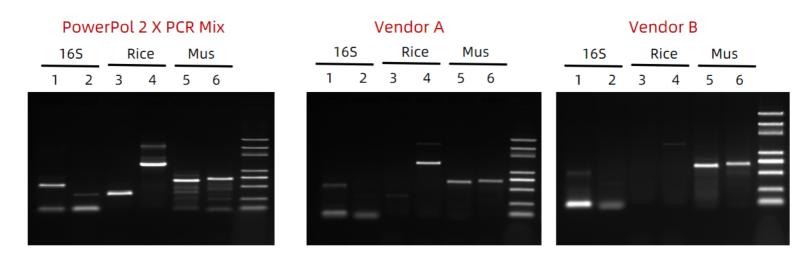
Conclusion: PowerPol 2X PCR Mix (RK20718) has a detection sensitivity of 1 ng -10 ng for complex templates (such as animal and plant gDNA), and a detection sensitivity of about 10 pg for simple templates (such as E. coli gDNA).

Data: Amplifing long fragments



Conclusion: PowerPol 2X PCR Mix (RK20718) can amplify Human gDNA up to 10Kb, PBC4 (plasmid) DNA up to 10Kb, and Lambda DNA up to 20Kb, Powerpol has the best performance comparing to 2 other vendors

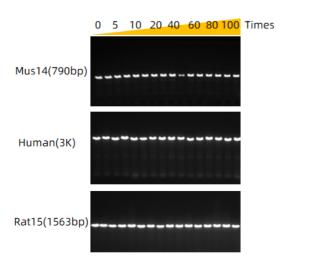
Data: Compatibility for rough templates



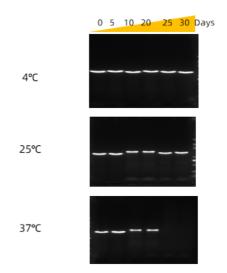
PCR detection of crude extracts from soil (16S), rice (Rice) and rat tail (Mus)

Conclusion: PowerPol 2X PCR Mix (RK20718) is better than other competitors in terms of product and amplification success rate

Data: Stability



PowerPol 2X PCR Mix (RK20718) has been repeatedly frozen and thawed for 100 times, and its performance is very stable in different species and batches.



PowerPol 2X PCR Mix (RK20718) can be stored at 4°C and 25°C for 1 month, and can be stored at 37°C for 2 weeks. Instability appears at 3 weeks. The sample used is Rat gDNA, 1563 bp

Gloria Nova HS series Kit & Master Mix

Gloria Nova HS series highfidelity enzymes have excellent amplification effects on various complex templates and low starting amount templates, could be used for gene cloning and genotyping.

Features:

- Modified enzymes, with higher fidelity performance and yielding;
- Antibody blocked for greatly specificity;
- Wide adaptability, it can overcomes high GC templates and ordinary templates;
- •High tolerance for inhibitors such as humic acid, cations, and ethanol,

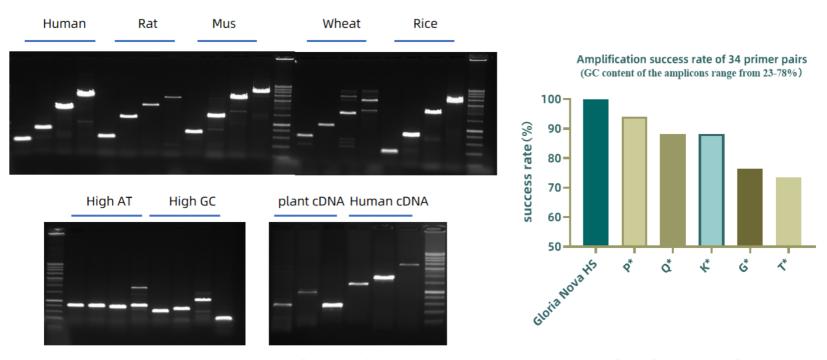


Gloria Nova HS PCR Kit Catalog:RK20714



Gloria Nova HS 2X Master Mix Catalog:RK20717

Data: high amplification success rate



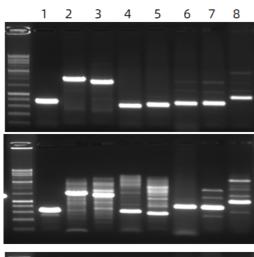
RK20717 has a 100% success rate for templates with d23%-78% GC content fromf 34 pairs of primers . The corresponding amplicon GC content is.

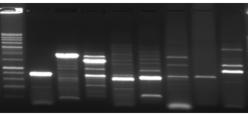
Data: High specificity

Gloria nova HS 2X Master Mix(RK20717)

Vendor-N

Venfor-T





1: Human cDNA

2: Human

3: Human

4: Mus

5: Mus

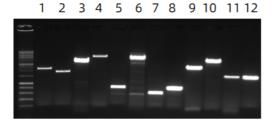
6: Mus

7: Wheat cDNA

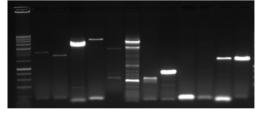
8: Zea Mays

Data: High yeilding

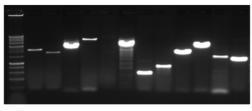
Gloria nova HS 2X Master Mix(RK20717)



Vendor-N



Venfor-T



1: Rat

2: Rat

3: Rice

4: Zea Mays

5: Human

6: Human

7: Zea Mays cDNA

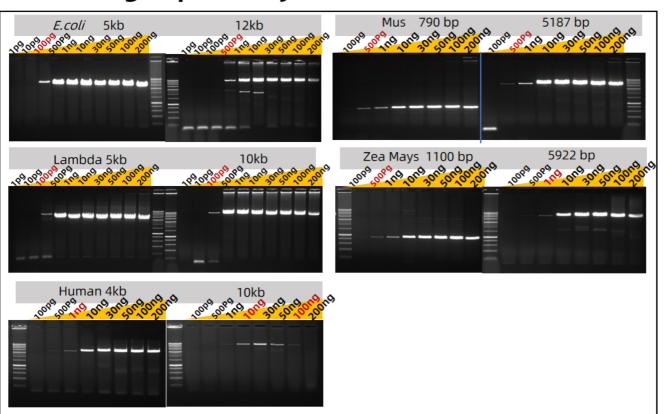
8: Human cDNA

9: Mus 10: Mus

11:Rat cDNA

12:Human cDNA

Data: High specificity

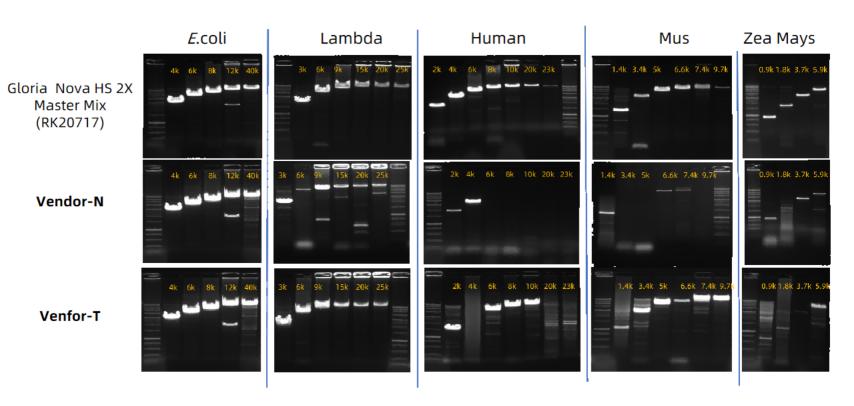


For simple samples, such as E. coli, the minimum starting amount can reach 100 pg. For more complex samples, such as Zea Mays, the minimum starting amount is 1 ng.
Gloria Nova HS series high-fidelity enzymes show High

sensitivity to different

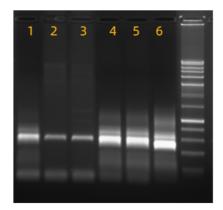
samples.

Data: Amplifing long fragments



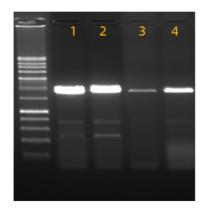
Data: Amplifing crude templates





- 1 Flower bed soil (rough extraction)
- 2 Farmland soil (rough extraction)
- 3 Silt (rough extraction)
- 4 Flower bed soil (fine extracted)
- 5 Farmland soil (fine extraction)
- 6 Silt (fine extraction)

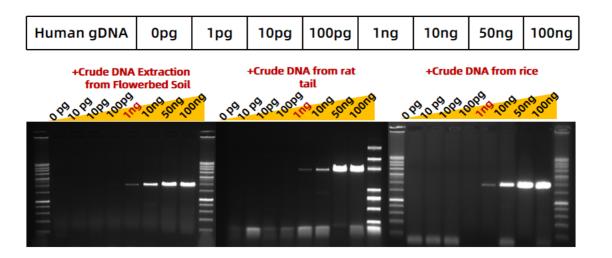
rice 45 (2100bp)



- 1 Rice leaf (crude extraction by CTAB method)
- 2 Rice leaves (Rough extraction by PVP non-toxic method)
- 3 Rice leaves (crude extraction by boiling method)
- 4 Rice seeds (crude extraction by CTAB method)

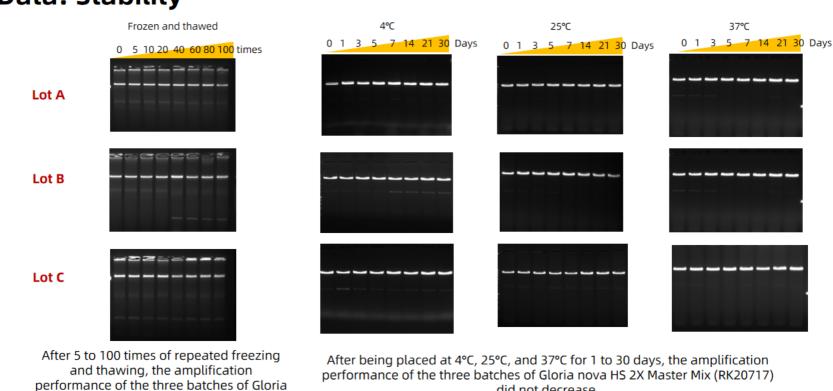
Gloria nova HS 2X Master Mix (RK20717) is suitable for the amplification of crude samples. Different crude extraction methods were used to extract DNA from soil and plant samples, and they all showed good amplification performance.

Data: High tolerance



The soil crude extracts, rat tail crude extracts, and rice leaf crude extracts were used as pollution scenarios, and different input amounts of Human gDNA (amplified fragment 2kb) were mixed as amplification templates (final input amounts). The results show that under the interference of other non-template DNA, RK20717 only needs 1 ng of the target template to successfully amplify.

Data: Stability



decrease.
The amplified sample is Human gDNA

nova HS 2X Master Mix (RK20717) did not

did not decrease. The amplified sample is Zea Mays gDNA

ABScript III RT Master Mix for qPCR with gDNA remover(RK20429)

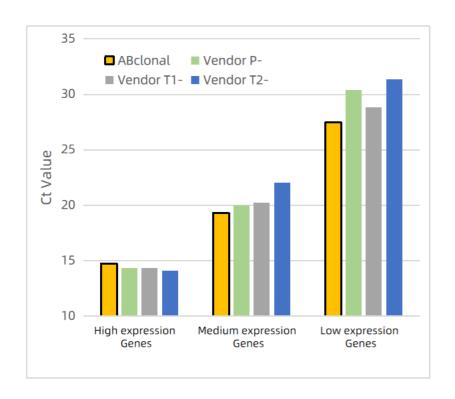
ABScript III RT Master Mix for qPCR with gDNA removeris a one-step reverse transcription reagent suitable for RT-qPCR. It only needs addition of sample once, and it can be used in the same tube to remove gene DNA contamination and reverse transcription reaction

- •Features:
- •Higher reverse transcription efficiency
- •High Efficient of gDNA removal, one tube reaction for gDNA removal and cDNA synthesis
- •Easy to operate
- Tolerance to inhibitors, improve cDNA production
- •improved performance for low abundance expression genes, higher reversal efficiency and sensitivity



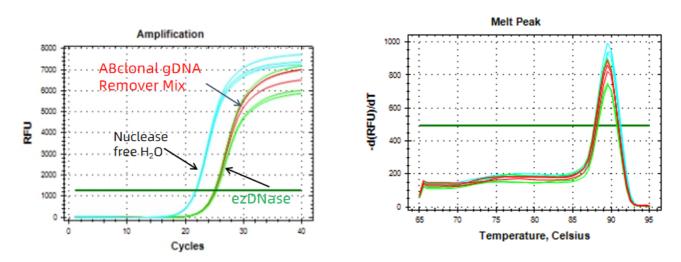
ABScript III RT Master Mix for qPCR with gDNA Remover Catalog:RK20429

Data: High effciency for low abundance gene



Taking 1 µg tomato RNA as a template, using ABScript III RT Master Mix for qPCR with gDNA remover and other three vendors, following the protocals, and detection of the expression level with qPCR from cDNA. The results showed ABScript III's reverse transcription efficiency is higher and sensitivity is better.

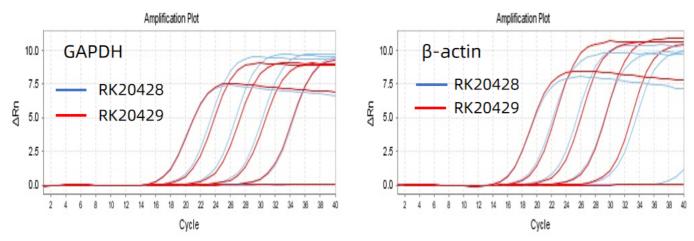
Data: High efficiency for gDNA removal



Mix 100 ng gDNA into 100 ng RNA, and treat them with Nuclease free H2O (fluorescent blue), ABclonal gDNA Remover Mix (red), and ezDNase (T-brand green) for 2 minutes, and then use the same reverse transcription reagent for RNA reverse transcription.

The results show that gDNA Remover Mix can quickly digest gDNA in the system without effecting RNA, and the digestion efficiency is equivalent to T-brand ezDNase.

Data: ABScript dsDNase has no affection on RT effeciency



Using rat Total RNA (without gDNA) as a template, reverse transcription was performed with RK20428 ABScript III RT Master Mix (blue curve) and RK20429 ABScript III RT Master Mix with gDNA remover (red curve), and the reverse transcription products were detected by qPCR. The results show that there is no significant difference between the two, indicating that the addition of ABScript dsDNase will not significantly affect the efficiency of reverse transcription.

Products for Diagnostic 03

Products for Diagnostic-2021

Application	Cat. No.	Products	Features
	RK21208	Entrans 2X qPCR Probe Master Mix	Antibody blocking+Chemical modification
	RK21209	Entrans qPCR Probe Kit	Antibody blocking
qPCR	RK21210	Entrans qPCR Probe Set	Antibody blocking
	RK21212	Entrans 2X qPCR Probe Master Mix V2-High sensitivity	Antibody blocking+Chemical modification
	RK21222	Entrans 2X qPCR Probe Master Mix with UDG-High sensitivity	Antibody blocking+Chemical modification
RT-qPCR	RK20411	ABScript III One Step RT-qPCR Probe Kit with UDG V2	ABScript III, Antibody blocking taq RT+taq+buffer+UDG
	RK20412	ABScript III One Step RT-qPCR Probe Kit with UDG V5	ABScript III, Antibody blocking taq Enzyme+buffer
	BM0176	2X One Step RT-qPCR Probe Master Mix	Reation in one tube

Products for Diagnostic-2021

Application	Cat. No.	Products	Size
RT	RK21400	ABScript II Reverse Transcriptase	200,000 U/mL
KI	RK20408	ABScript III Reverse Transcriptase	200,000 U/mL
RI	RK21401	RNase Inhibitor, Mammalian	40,000 U/mL
UDC	RK20543	Heat-labile UDG (1,000 U/mL)	1,000 U/mL
UDG	RK20527	Uracil-DNA Glycosylase (UDG)	5,000 U/mL
Taq antibody	RK20545	Taq Antibody (5,000 U/mL)	5,000 U/mL

Applications

Fields	Applications
Infectious diseases	Molecular diagnosis of DNA and RNA pathogens in the direction of human medicine For example: Sars-Cov-2, HIV, HPV, HBV, etc
Tumors and genetic diseases	Detection of specific genes for tumors and genetic diseases For example: gene expression, mutation, deletion, rearrangement, tetc
Animal diseases	Molecular diagnosis of DNA and RNA pathogens in the direction of animal diseases For example: swine fever, African swine fever, pseudorabies virus, blue ear virus, etc
Food safety	Food safety pathogenic microorganism detection and genetically modified crop detection
Environmental	Water quality and air pollution inspection
Customs quarantine	Molecular diagnosis of pathogens of imported and exported goods

ABScript III One Step RT-qPCR Probe Kit with UDG V5 (RK20412)

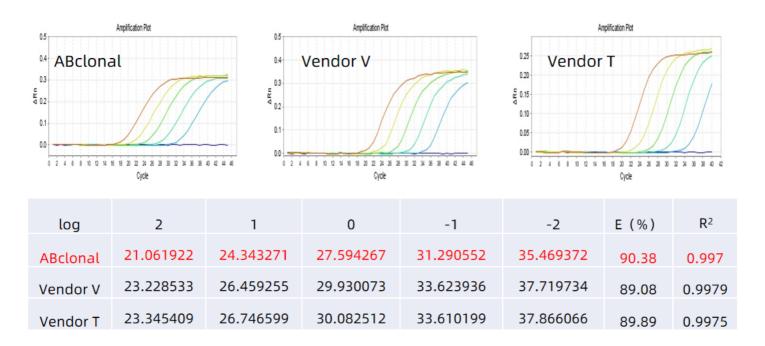
ABScript III One Step RTqPCR Probe Kit with UDG V5 is a universal kit that uses the probe method for RTqPCR reactions. This kit introduces a dUTP/UDG antifouling system, which is very suitable for the detection of RNA viruses and other trace RNAs.

- •RT+qPCR in one tube
- Contains dUTP/UDG anti-fouling system;
- Compatible with multiple probe systems;
- Suitable for SARS-Cov-2 detection;
- •Good stability, the activity will not be significantly affected when stored at 37°C for a week



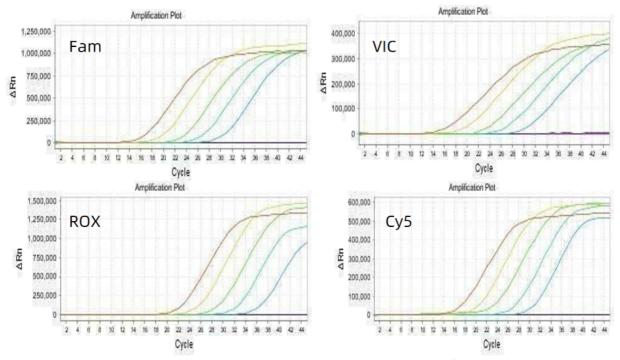
ABScript III One Step RTqPCR Probe Kit with UDG V5 Catalog:RK20412

Data: High sensitivity



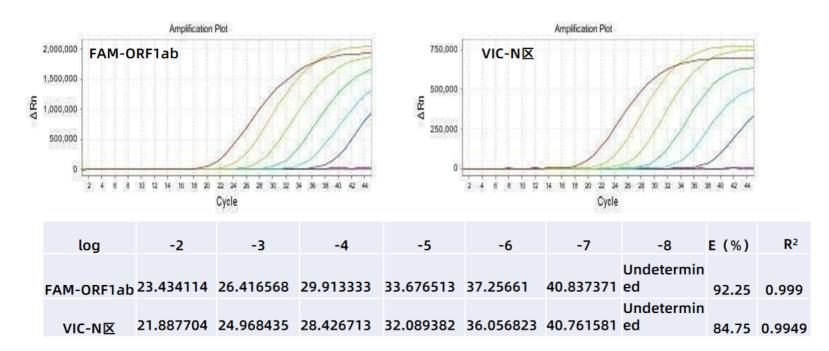
Using mouse RNA as a template (100 ng/µl as the starting concentration), 5'-end TAMRA fluorescently labeled probe, 10-fold dilution, can detect the target gene very well, and has a higher level than othe vendors.

Data: Suitable for multiplex reaction



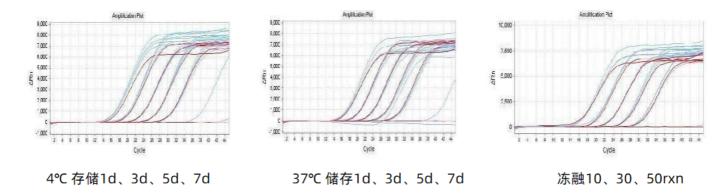
Using mouse RNA as a template (100 ng/ μ l as the starting concentration), 10-fold serial dilutions were used for amplification with a quadruple amplify system. The results show that ABScript III One Step RT-qPCR Probe Kit with UDG V5 is compatible with quadruple amplify system

Data: applied for detection of SARS-Cov-2



Using 10-fold diluted synthesised Sars-Cov-2 fragment as template, ABScript III One Step RT-qPCR Probe Kit with UDG V5 shows good performance of detecting ORF1 gene and N gene.

Data: Stability



37°C for 7 days, or frozen and thawed 50 times, ABScript III One Step RT-qPCR Probe Kit with UDG V5's performance did not be affected (inner reference was red)

Entrans 2X qPCR Probe Master Mix with UDG (RK21222)

Entrans 2X qPCR Probe
Master Mix with UDG is
developed for qPCR reaction
based on the probe method.
The Taq is blocked by
antibody and chemical
modified, with UDG for antipollution.

- •Thermal stability: 37°C
- •High sensitivity: 10 copies/25ul
- Anti-pollution system: UDG antipollution performance
- Multiple detection: 3-4 repeats
- •Rapid amplification: reduce the pre-deformation time, shorten the reaction time, amplification finished within 50 minutes



Entrans 2X qPCR Probe Master Mix with UDG Catalog: RK21222

Data: High sensitivity

	RK21222
P72-FAM(copies/ul)	1
CD2V-VIC(copies/ul)	0.6
MGF-ROX(copies/ul)	1.6

25ul reaction system with 5ul template

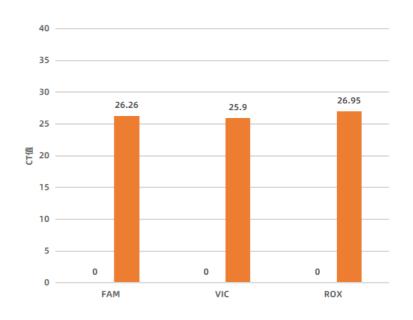
The number of copies converted to the entire system is as follows:

	RK21222
P72-FAM(copies/25ul)	5
CD2V-VIC(copies/25ul)	3
MGF-ROX(copies/25ul)	8

The start amount reached 10copies/25ul

Data: Anti-aerosol pollution with UDG

It can be seen intuitively from the chart that the Entrans 2X qPCR
Probe Master Mix with UDG
RK21222 reaction system UDG
enzyme has a very obvious antipollution effect in the three channels.





NGS Lib Prep Kits - 2021

Platform	Cat. No.	. Name	
	RK20254	Rapid CE DNA Lib Prep Kit for Illumina V2	
	RK20255	Rapid Plus DNA Lib Prep Kit for Illumina V2	
F	RK20208	Rapid Plus DNA Lib Prep Kit for Illumina	
illumina	RK20223	Rapid Plus DNA Lib Prep Kit (no DDREs) for Illumina	
	RK20217	Rapid Max DNA Lib Prep Kit for Illumina	
	RK20228	Scale ssDNA-seq Lib Prep Kit for Illumina V2	
	RK20220	Scale Methyl-DNA Lib Prep Kit for Illumina	

NGS Lib Prep Kits - 2021

Platform	Sample	Cat. No.	Name	
	mRNA	RK20341	Poly(A) mRNA Purification Module	
		RK20353	First Strand Synthesis Module	
		RK20346	Second Strand Synthesis Module	
		RK20367	First Strand Synthesis Module V2 (Stranded)	
		RK20368	Second Strand Synthesis Module V2 (Stranded)	
		RK20349	Stranded mRNA-seq Lib Prep Module for Illumina	
illumina		RK20350	mRNA-seq Lib Prep Module for Illumina	
		RK20301	Stranded mRNA-seq Lib Prep Kit for Illumina	
		RK20302	mRNA-seq Lib Prep Kit for Illumina	
		RK20340	Poly(A) mRNA Capture Module	
		BK0028	Fast RNA-seq Lib Prep Kit V2	
	RNA	BK0015	rRNA Depletion Module (H/M/R) V2	
		RK20303	Whole RNA-seq Lib Prep Kit for Illumina	

ABclonal Rapid series NGS Lib Prep Kits

The Rapid DNA Lib Prep kit provides a streamlined and efficient method to construct DNA library for next generation sequencing (NGS) with Illumina platforms. The entire protocol can be completed in 2 hours.

Rapid CE V2 improves the cost performance.

Rapid Plus V2 contains the Damage DNA Repair Module (DDRE), increasing the library constucting succesful rate for difficult sample

Features:

- Easy for operating
- •Starting from fragmented input-DNA (1 1000 ng)
- significant cost performance (Rapid CE V2)
- •Damage DNA Repair Module (Rapid Plus V2)

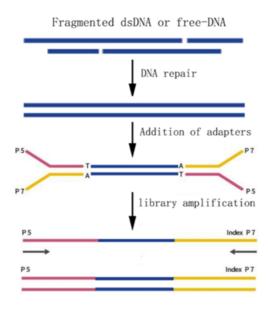


Rapid CE DNA Lib Prep Kit for Illumina V2 Catalog:RK20254

Rapid Plus DNA Lib Prep Kit for Illumina V2 Catalog:RK20255

8 RXN/24 RXN/96 RXN

Workflow



Applications

	Rapid CE V2	Rapid Plus V2	
Cat. No.	RK20154	RK20255	
Starting amount	1 ng~1000 ng	1 ng~1000 ng	
DDRE	No	Yes	
Features	Cost performance	High performance, suitable for tumor research	
Applications	WGS, NIPT, mNGS	WGS, tumor analysis, ChIP-seq	

Customer Needs Analysis 05

ABclonal RT-qPCR/RT-PCR Products

RNA extraciton: Trizol

Reverse Transcription:

ABscript II: RK21400 RK20400 RK20402 RK20403

ABscript III: RK20408 RK20428 RK20429

qPCR: Universal RK21203, Genious RK21204- RK21207 (RT-qPCR for analysing gene expression levels)

PCR: Gloria Nova RK20717

(RT-PCR: gene clone from cDNA)

DNA extraction: gel extraction kit

For Research

ABclonal has a complete scientific research molecular enzyme product line, which can be divided into 5 categories

Catagories	Products
PCR	Gloria Nova HS, PowerPol
qPCR	Universal series, Genious series
Reverse Transcription	ABscript III series, ABscript II series
Gene clone	2X MultiF Seamless Assembly Mix, Endonuclease, T4 ligase
Extraction of Nucleic Acid	Gel, Plasmid, DNA, RNA, Trizol

Abclonal gene clone products

Ligation: T4 ligase High conc: RK21500

Normal conc: RK21501

Quick ligation kit: RK20500

HF DNA polymerase: Gloria Nova RK20717

Extraction kits: gel, plasmid

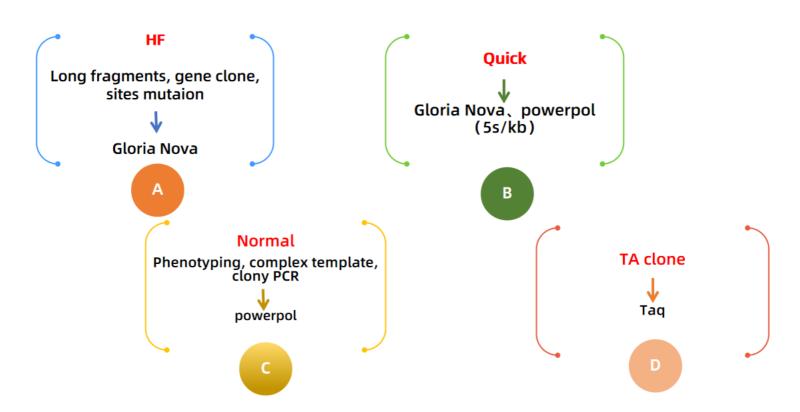
Electrophoresis: DNA marker

Nucleic acid dye

Agrose

Product	Cat. No,		
Agel	RK21125		
BamHI	RK21101		
BsiWI	RK21107		
EcoRI	RK21102		
EcoRV	RK21106		
HindIII	RK21108		
Kpnl	RK21104		
Nhel	RK21111		

ABclonal DNA Polymerase



Customers Needs

Application	Needs	Products	Comment
Sanger sequencing	PCR	Powerpol series	ABI: 3730/Sanger
	Tumor analysis	RK20255 Rapid plus V2/ RK20208 Rapid plus RK30112 AFTSpin FFPE DNA Isolation Kit RK20229 FFPE DNA QC Kit RK20257 AFTMag NGS DNA Clean Beads	
NGS	Research	DNA: RK20254 Rapid CE V2/RK20255 Rapid plus V2 Methylation: RK20220 Scale series 16s rDNA: RK20717 Gloria Nova HS 2X Master Mix	NGS
Genetic disease analysis		RK20254 Rapid CE V2	
	NIPT	RK20254 Rapid CE V2	
Diagnostic	qPCR	RK20412 ABScript III One Step RT-qPCR Probe Kit with UDG V5 RK21222 Entrans 2X qPCR Probe Master Mix with UDG	qPCR(ABI、Biorad or Roche)
Bio-pharmacy	Gene clone	RT, ligation, MultiF Seamless Assembly Mix, HF DNA polymerase, qPCR	

