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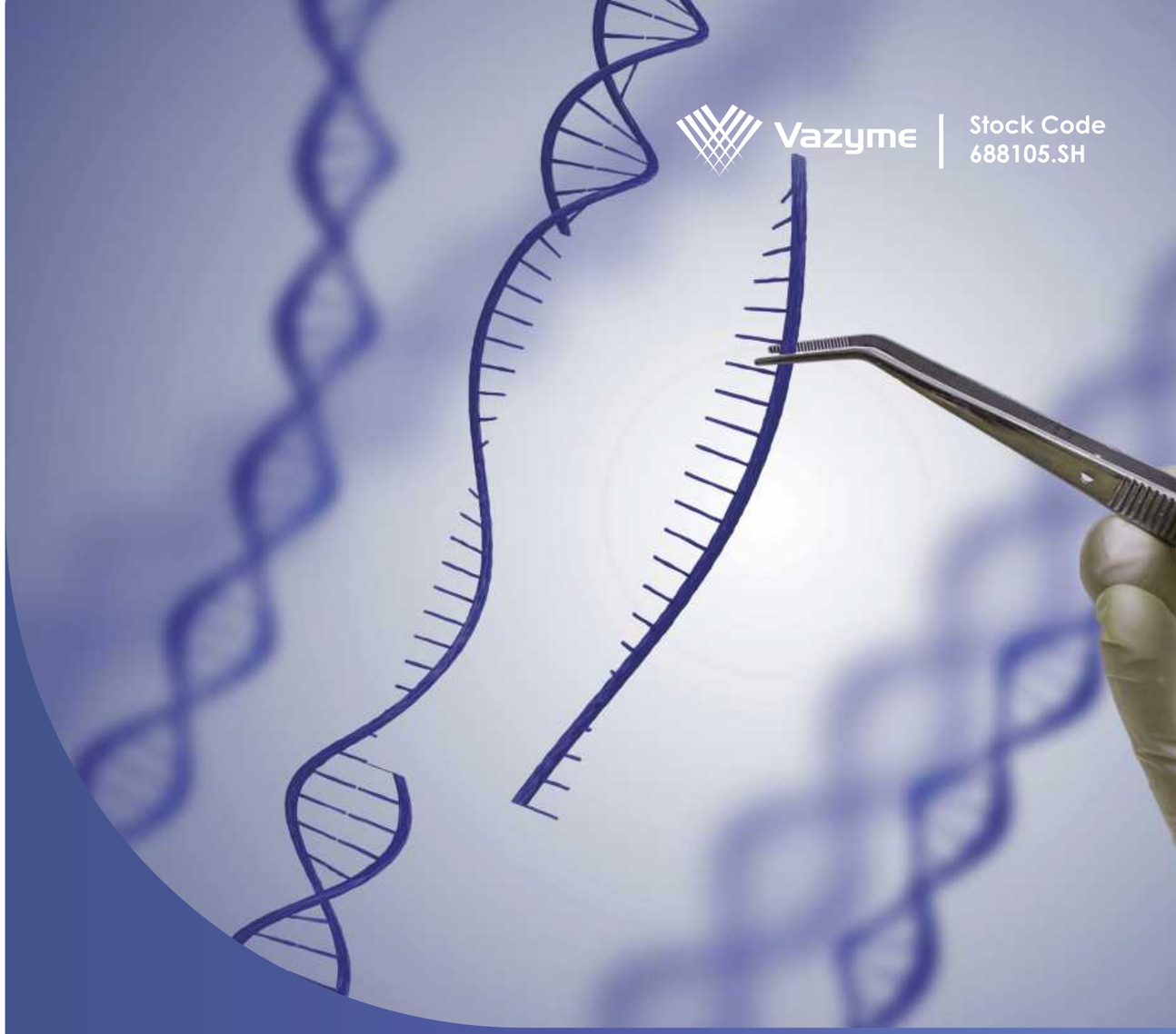


Reagents for

Molecular Diagnosis

Product Catalogue

About Us

Since the establishment in 2012, Vazyme has been dedicated to our mission "Science and Technology Make a Healthier Life" to focus on technology innovation and continuously expand the application fields of core technologies in life science, bio-medicine, and in vitro diagnostics.

As a R&D based company, we have been holding ourselves to the highest standards of ethics, accountability and professionalism. Our global research and development operations make sure we could provide quality products, solutions, and services locally to our customers, and more importantly, to do as much as it can to meet the unmet customers' needs. For now, we are present in more than 60 countries and regions worldwide to get close to local customers.

Innovation is our DNA

700+ Researchers

46% of them have master's degree or above. Our 4000+ employees make up global research and development operations with scientists, experts, bio-technicians, and engineers.

$103 Million R&D Investment

As an innovator in technology, we see the continuous investment in the R&D of innovative solutions as a top priority.

2000+ Papers

have been published cited our products in top academic journals worldwide, including more than 270 in CNS (stands for Cell, Nature, Science) and its sub-journals, as of Q2 2022.

Professional Supplier in Life Science

We own 30+ product lines through our self-developed key technology platforms. We develop 500+ reagents and solutions, and 1000+ customized products to meet the personalized and diversified needs of customers.

Molecular Biology Research Reagents

Molecular Diagnostics Solutions

NGS Library Prep Kits

Robust and Reliable Supply Chain

We are a R&D-focused innovative biotechnology company with both capabilities in developing upstream technologies in-house and manufacturing end products.

Reagents and Solutions

70+

Automatic Reagent Filling Lines

Raw Materials

Ton Class

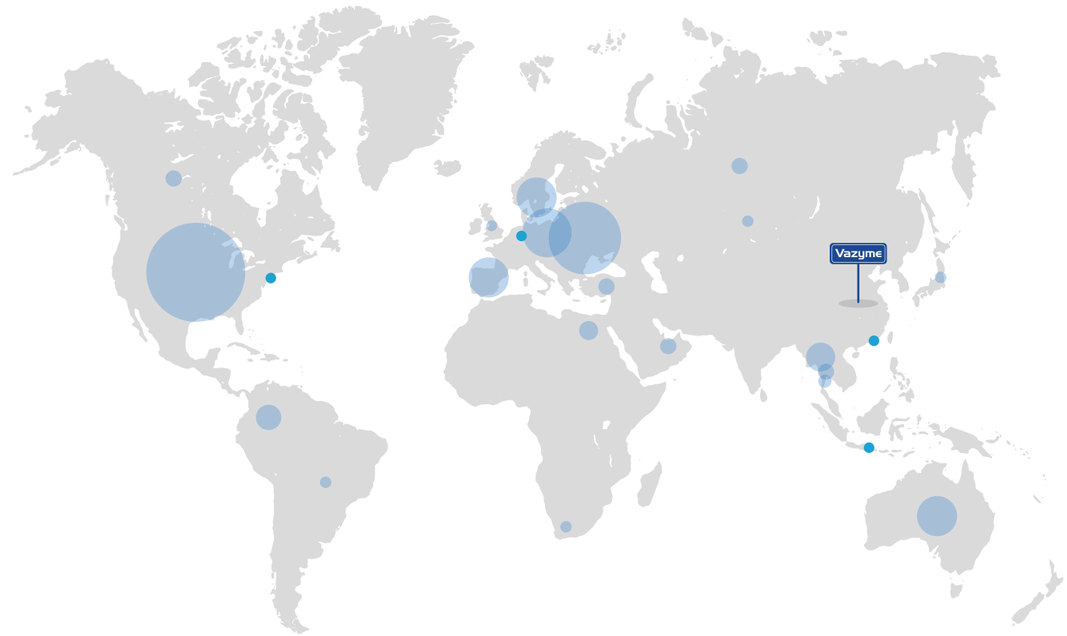
High-Density Fermentors

QC Management

We persevere that creating value for customers is the key to our business. That's why we are pursuing the highest standards in quality of products.

Global Network

In more than 60 countries and regions worldwide that's where we are present, making sure we are close to our customers to provide our products, solutions, and services locally. We have four branches in the United States, Germany, Indonesia and Hong Kong SAR of China and multiple overseas warehouses to ensure the worldwide logistics.



*Above is only part of countries and regions.

Vazyme

Molecular Diagnosis

For Science For Health

Content

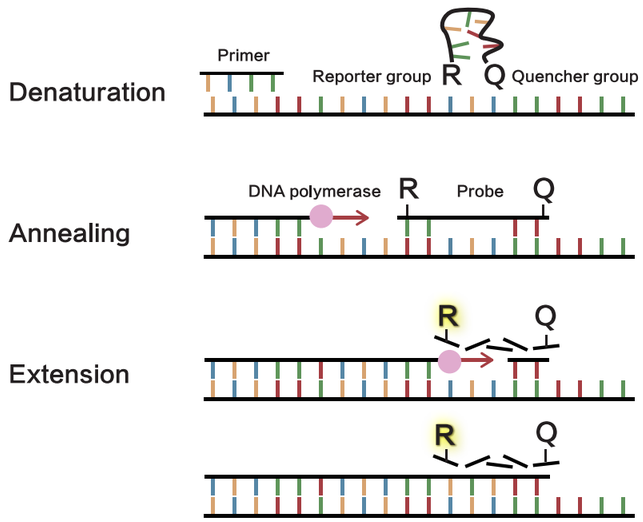
DNA detection

Background

Human diseases caused by infectious DNA virus deeply affect human health, such as commonly mentioned HPV, HBV. Fast and accurate diagnosis is essential in order to ensure a cure for the patient.

Technology platform

Real-Time PCR or quantitative PCR (also known as qPCR) is a way of finding out how much of a specific section of DNA there is in a sample, in real time. qPCR uses fluorescence signal accumulation to monitor the entire PCR process in real time, and finally quantitatively analyzes unknown templates through C_T values and standard curves. It is currently the most mature and widely used clinical technology platform. Especially in the field of infectious diseases and tumor companion diagnostics, the qPCR is still the main technology platform.



Features of probe:

- **High specificity**
- **Support for multiplex fluorescence quantification**
- Expensive
- Designed for specific purpose sequence

Taq HS DNA polymerase(P132)

Product description

Taq HS DNA Polymerase is a hot-start Taq Polymerase obtained by mixing Champagne Taq antibody with Taq DNA Polymerase in an optimal ratio. Due to the unique thermo stability of Champagne Taq antibody, the activity of Taq HS DNA polymerase is still blocked at temperature up to 55℃, which minimizes non-specific amplification during the mixing and system heating. When the reaction is kept at 95℃ for more than 30 sec. Champagne Taq antibody is completely inactivated and Taq enzyme activity is completely released, ensuring that the PCR system has extremely high amplification sensitivity and specificity. The activation of Taq HS DNA polymerase is not affected by pH, ionic strength, etc. It is applicable for various hot-start PCR and qPCR based on Taq DNA polymerase and can be used to amplify gene with low copy numbers from complex templates (genome DNA and cDNA). It is the preferred hot start Taq enzyme for PCR/qPCR molecular diagnostic reagents.

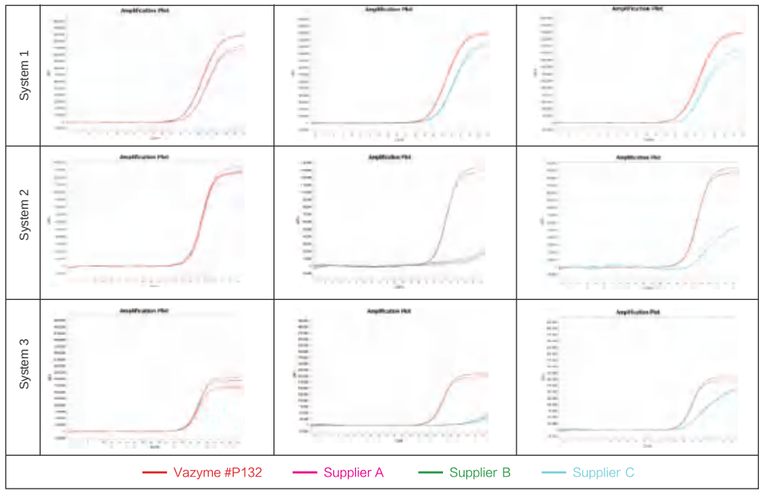
Components

Components	P132-d1 500 U (5 U/μl)	P132-d2 1,000 U (5 U/μl)	P132-d3 5,000 U (5 U/μl)
10 × Taq HS Buffer (Mg^{2+} plus)	2 × 1 ml	4 ml	20 ml
dNTP Mix (10 mM each)	400 μl	800 μl	4 ml
Taq HS DNA polymerase (5 U/μl)	100 μl	200 μl	1 ml

Features

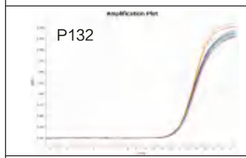
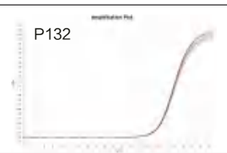
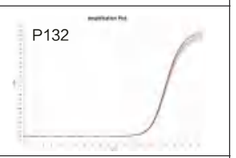
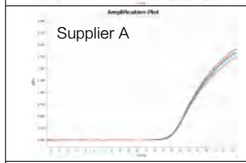
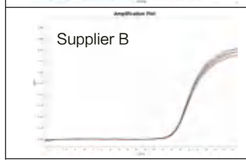
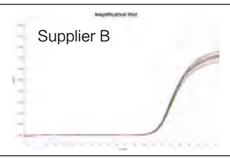
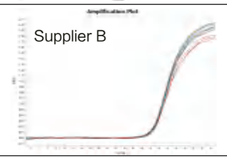
Excellent amplification curve and amplification plateau phase

Taq HS DNA polymerase (Vazyme #P132) together with Hot start DNA polymerase from Brand A, B and C was performed amplification experiments in three different systems, and the result showed that the amplification sensitivity and plateau phase of P132 were better than those of other brands' reagents.



Superior Stability

The treatment group of P132 , Supplier A and supplier B was subjected to repeated freeze-thaw, 37℃ acceleration,4℃ acceleration and round-trip transportation. The control group was kept at -20℃ normally. Comparing the amplification performance of the treatment group and the control group.

Freeze-thaw(10, 20, 30 times) Control: -20℃ preseved	37℃ Acceleration Test (1, 3, 5, 7, 9d) Control: -20℃ preseved	4℃ Acceleration Test (1, 2, 3, 4w) Control: -20℃ preseved	Transport Stability Test Control: -20℃ preseved
			
			
			

The results showed that the amplification curve of the treatment group and the control group is a standard "S" shape, the amplification performance is stable, and the upgraded version of the hot-start enzyme P132 reagent has superior storage stability.

Taq Pro Multiple Probe qPCR Mix(QN213)

Product description

Taq Pro Multiple Probe qPCR Mix is a special master mix for probe-based qPCR for DNA templates (such as DNA viruses). The core component, Taq Pro HS DNA Polymerase, is a hot-start DNA polymerase based on antibody modification and upgraded to improve template affinity. Equipped with the most suitable buffer, it significantly improves amplification performance with multiple targets, amplification specificity, sensitivity of low-copy genes detection and amplification line.

It accurately quantifies and detects target genes with good repeatability and reliability. It has a broad compatibility with different template types, template GC content and primers' Tm values. The product is a 2 × master mix. You only need to add primers, probes and templates. It is easy to use and compatible with fast program to reduce test time.

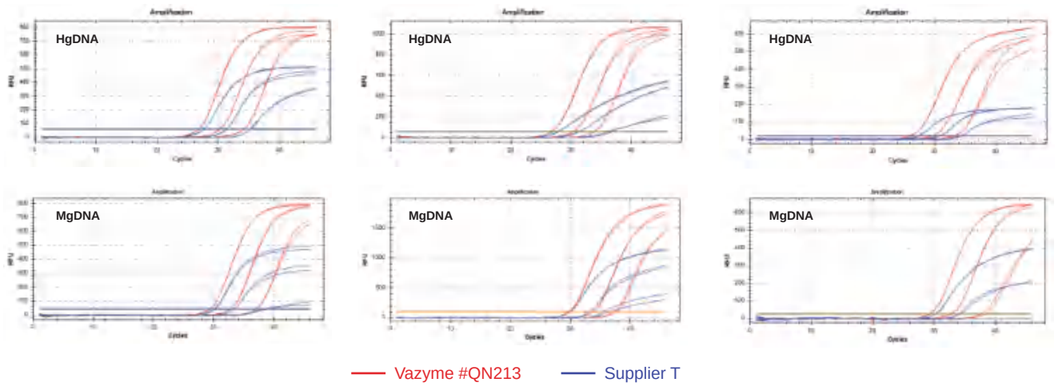
Components

Components	QN213-EN01 (100 rxns/20 μl reaction)	QN213-EN02 (500 rxns/20 μl reaction)	QN213-EN03 (2,500 rxns/20 μl reaction)
2 × Taq Pro Multiple Probe qPCR Mix	1 ml	5 × 1 ml	5 × QN213-02
50 × ROX Reference Dye 1	100 μl	200 μl	
50 × ROX Reference Dye 2	100 μl	200 μl	

Features

Superior amplification performance

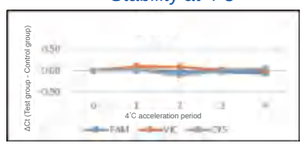
Use Vazyme #QN213 and supplier T to perform qPCR amplification experiments under different types of templates in different systems, and compare the amplification performance.



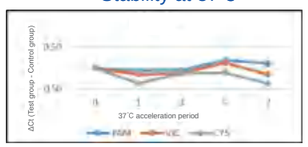
Superior stability

After accelerated destruction experiments, Vazyme #QN213 still maintains good amplification performance.

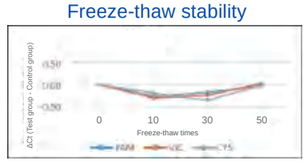
Stability at 4℃



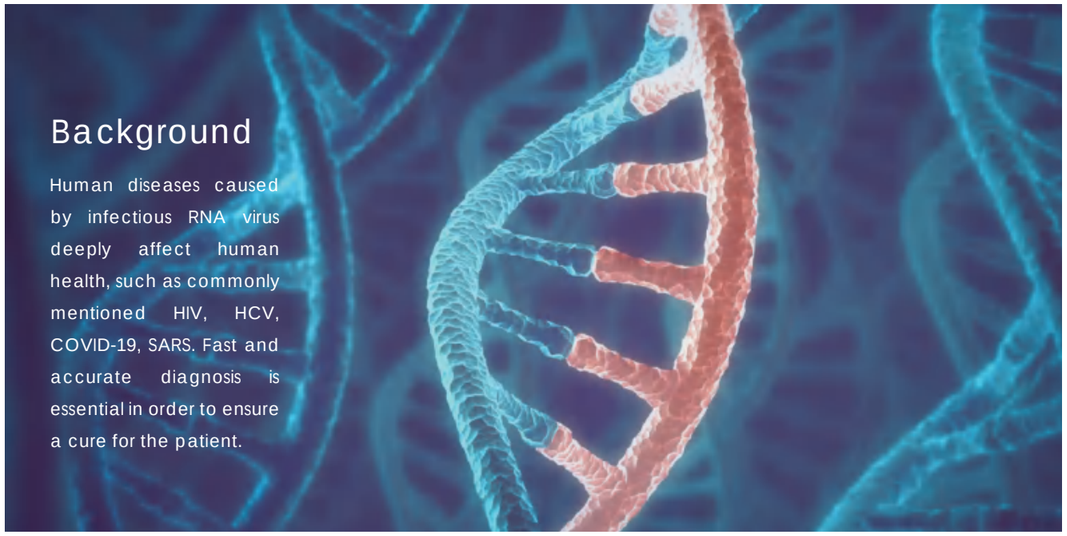
Stability at 37℃



Freeze-thaw stability

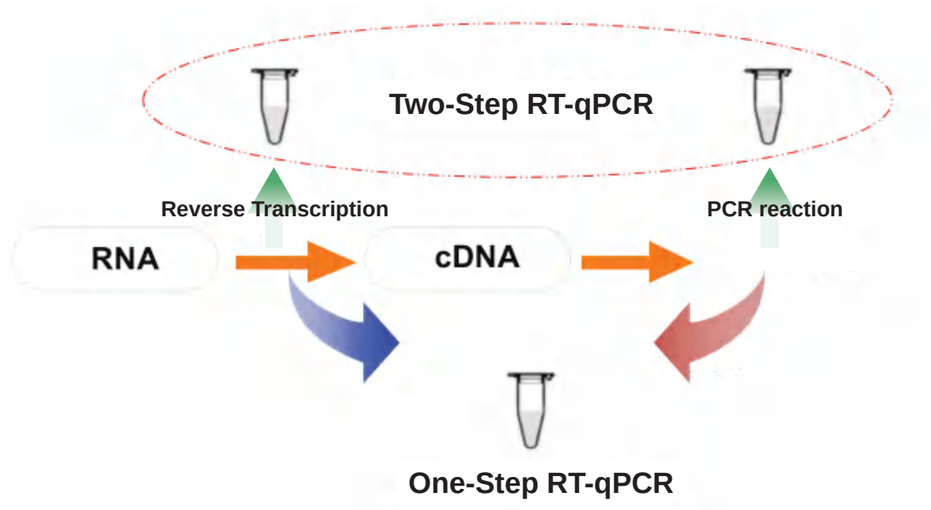


RNA detection



Technology platform

RT-qPCR is a powerful method to detect RNA pathogens. Using gene specific primers (GSP), the reverse transcription and qPCR can be finished in one tube. There is no need to add reagents and there is no need to open the cap of the tube during the reaction, which avoids cross-contamination between samples and improves the detection sensitivity and efficiency.



HiScript III One Step qRT-PCR Probe Kit(Q225)

Product description

The HiScript III One Step qRT-PCR Probe Kit (Vazyme #Q225) is designed for qPCR detection using RNA as a template (RNA virus). Integrating the superior performance of HiScript III Reverse Transcriptase, RNase inhibitor and hot-start Champagne Taq DNA Polymerase, with the optimized buffer, reverse transcription and qPCR reactions are completed in one tube without additional tube opening/pipetting operations, greatly improving detection throughput and reduces the risk of contamination. This product is suitable for highly specific detection systems of fluorescently labeled probes such as TaqMan.

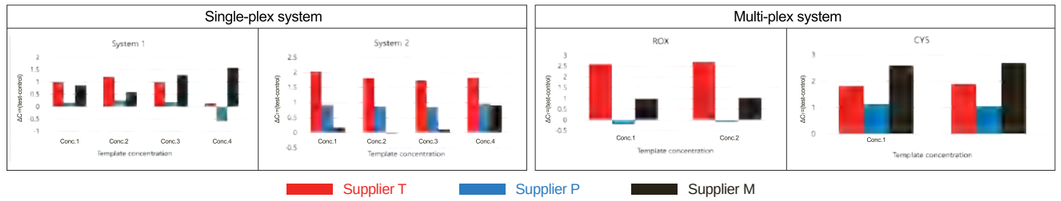
Components

Components	Q225-EN01 100 rxns (30 μl/rxn)	Q225-EN02 1,000 rxns (30 μl/rxn)	Q225-EN03 5,000 rxns (30 μl/rxn)
RNase-free ddH_2O	2 × 1 ml	20 ml	100 ml
5 × One Step Mix	600 μl	6 × 1 ml	30 ml
One Step Enzyme Mix	150 μl	2 × 750 μl	7.5 ml
50 × ROX Reference Dye 1	60 μl	600 μl	3 × 1 ml
50 × ROX Reference Dye 2	60 μl	600 μl	3 × 1 ml

Features

High sensitivity

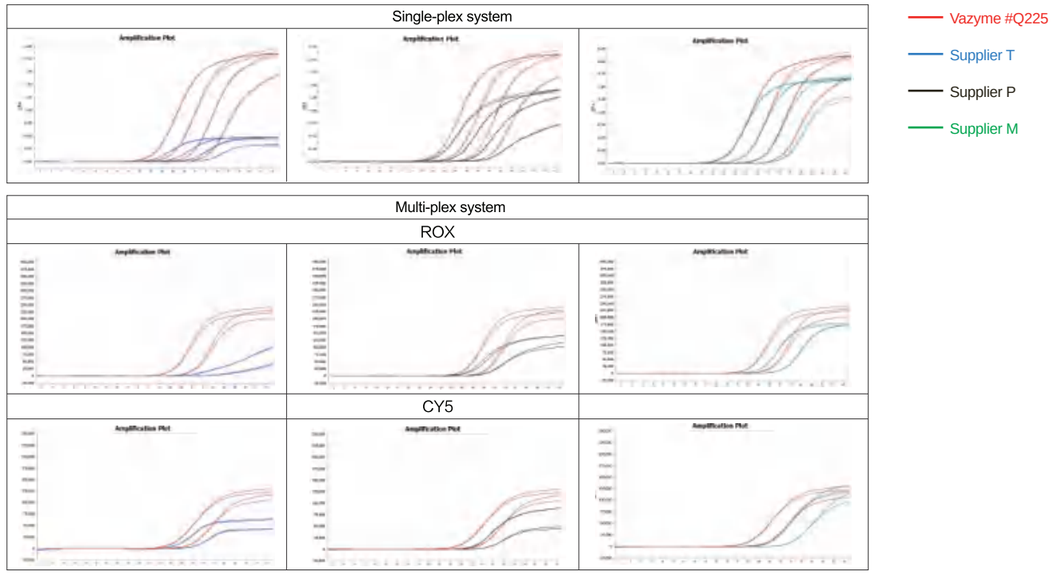
Taking Vazyme #Q225 as the control group and other brands of qRT-PCR reagents as the test group, the viral RNA template was amplified and detected under the same reaction conditions, and the ΔC_T was calculated.



The results showed that the overall amplification sensitivity of Q225 was better than that of the test reagents in both single-plex and multi-plex systems.

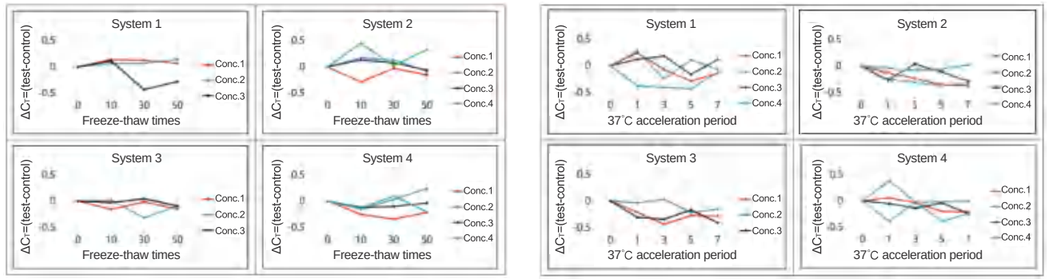
Better amplification line and plateau phase

Vazyme #Q225 performs amplification experiments with other brands of qRT-PCR reagents. Q225 performs better than other brands in amplification sensitivity and plateau phase in single-plex and multi-plex systems.



Great storage stability

Compare the performance of Vazyme #Q225 before and after the treatment of freeze-thaw and 37˚C acceleration. Take the -20˚C preserved reagents as control group. The results showed that the difference of C_T value between the treatment group and the control group was within ±0.5, the amplification curve was a standard "S" shape, and the amplification platform was less than 10%, indicating that Vazyme #Q225 had superior storage stability.



HiScript III One Step qRT-PCR Probe 5 × Master Mix(Q611)

Product description

HiScript III One Step qRT-PCR Probe 5 × Master Mix is a one-tube qRT-PCR premix for single-plex or multi-plex qPCR assays using RNA as template (e.g. RNA viruses) with high stability. The reaction can be initiated by directly adding template, primers and probes. With gene-specific primers (GSP), reverse transcription and qPCR reactions are performed in one tube, eliminating the need for additional tube opening/ pipetting operation, which greatly increases throughput and reduces the risk of contamination. Integrating the superior performance of HiScript III Reverse Transcriptase and hot start Champagne Taq DNA Polymerase with optimized buffer systems, the system is suitable for highly sensitive detection of fluorescent-labeled probes such as TaqMan.

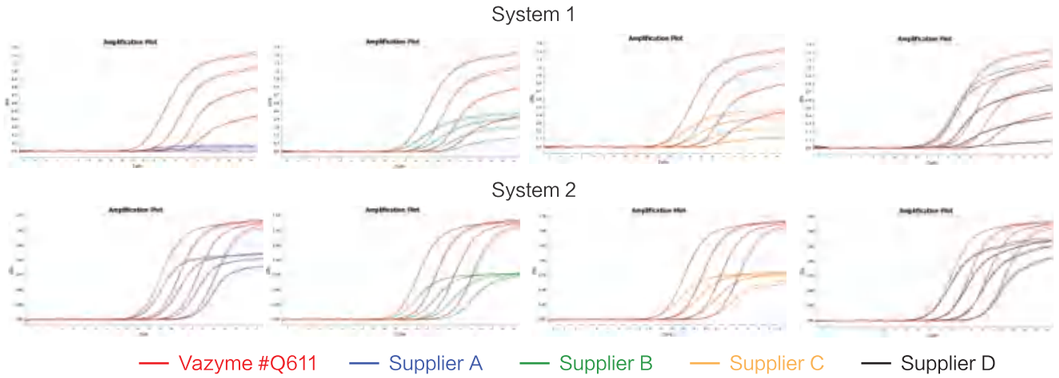
Components

Components	Q611-EN01 100 rxns (20 μl/rxn)	Q611-EN02 1,000 rxns (20 μl/rxn)	Q611-EN03 10,000 rxns (20 μl/rxn)
RNase-free ddH_2O	1 ml	10 ml	100 ml
One Step qRT-PCR Probe 5 × Master Mix	400 μl	4 × 1 ml	40 ml
50 × ROX Reference Dye 1	40 μl	400 μl	4 × 1 ml
50 × ROX Reference Dye 2	40 μl	400 μl	4 × 1 ml

Features

Excellent balance of high and low concentration template amplification

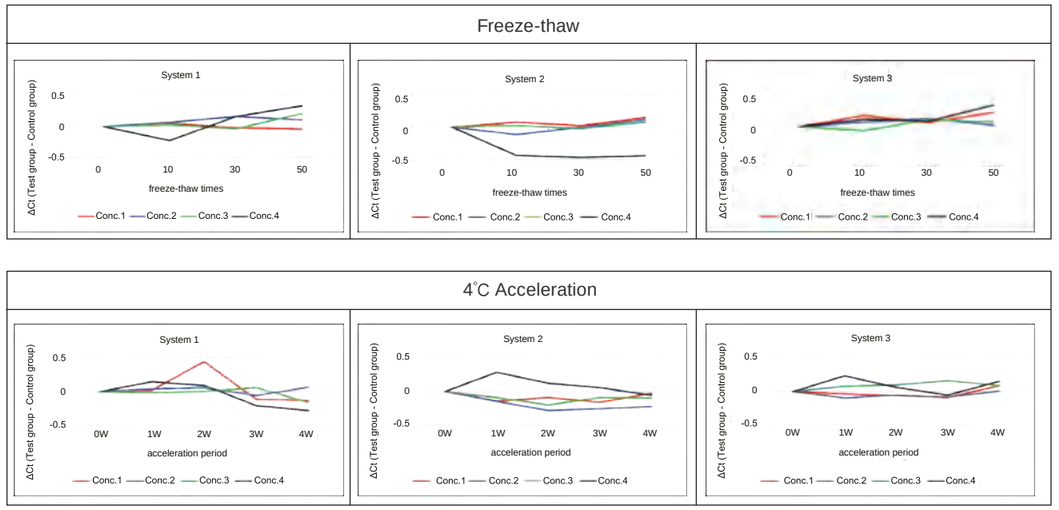
Using Vazyme #Q611 and premix of Supplier A, Supplier B, Supplier C and Supplier D in different templates (virus and HeLa cell), the gradient dilution of different types of template viral RNA and HeLa RNA was carried out for qRT-PCR amplification. Compare the sensitivity, plateau phase and amplification curve under the same primer probe conditions.

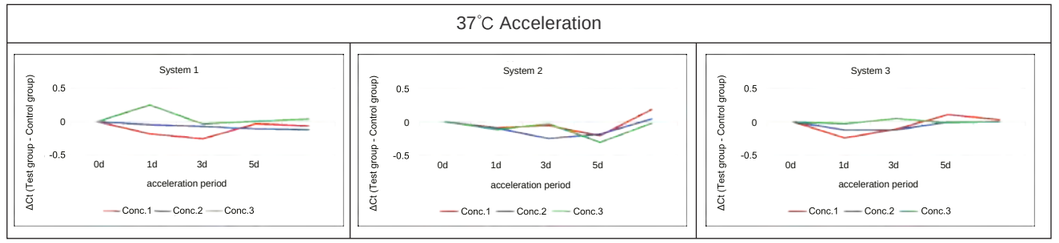


The results showed that Vazyme #Q611 has better amplification performance in terms of the balance of high and low concentration template and better amplification performance.

Superior storage stability

Compare the performance of Vazyme #Q611 before and after the treatment of freeze-thaw, 4℃ acceleration, 37℃ acceleration.



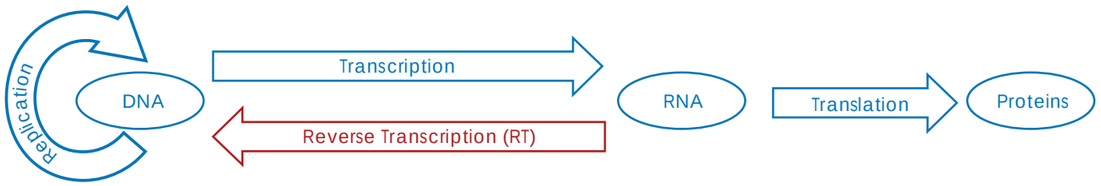


The results showed that the difference of C_T value between the treatment group and the control group was within ±0.5, the amplification curve was a standard "S" shape, and the difference of amplification platform was less than 10%, indicating that Vazyme #Q611 had superior storage stability.

Reverse Transcription

Background

The discovery of reverse transcription (RT), which refers to the synthesis of cDNA from RNA under the catalysis of reverse transcriptase, is an important addition to the central dogma of molecular biology. At present, the use of reverse transcription to obtain the target cDNA has become one of the important technologies of genetic engineering. In the process of cDNA synthesis *in vitro*, Buffer, dNTPs, reverse transcription primers, RNase inhibitors, reverse transcriptases and RNA templates will be involved.



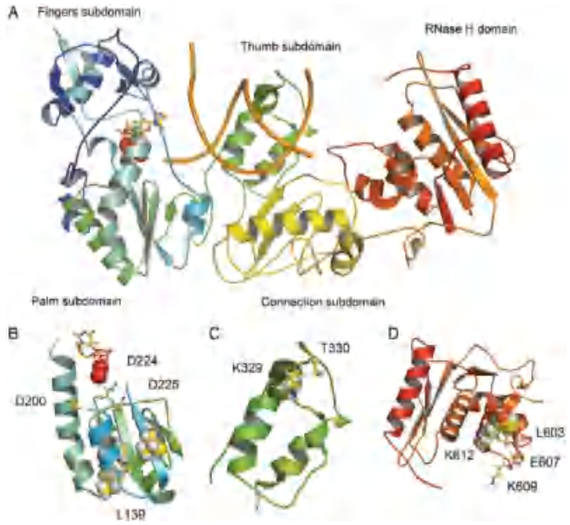
Central dogma of molecular biology

Technology platform

Reverse transcriptase was originally isolated from virus, and M-MLV is a common reverse transcriptase isolated from Moloney murine leukemia virus.

M-MLV catalyzes reverse transcription at 37 ~ 42℃, but has poor thermal stability. Generally, the yield of cDNA from reverse transcription reactions using M-MLV is relatively high. M-MLV has the activities of RNA-dependent DNA polymerase (activity of synthesizing DNA strands using RNA strands as a template), DNA-dependent DNA polymerase (activity of synthesizing DNA strands using DNA strands as templates) and RNase H (activity of degrading RNA strands on RNA-DNA hybrid strands).

Since RNase H activity affects the length and yield of cDNA, the wild-type M-MLV on the market has been modified to remove this RNase H domain.



Picture comes from Generation and characterization of new highly thermostable and processive M-MuLV reverse transcriptase variants

HiScript II Reverse Transcriptase(R201)

Product description

HiScript II Reverse Transcriptase is a new reverse transcriptase obtained by in vitro molecular evolution technology on the basis of M-MLV(RNase H-)Reverse Transcriptase. Compared with the previous generation of HiScript Reverse Transcriptase, HiScript II Transcriptase has further greatly improved thermal stability, with a half-life of more than 4 h at 50℃, and can remain stable for a long time at 55℃. It is very suitable for complex secondary structures. Reverse transcription of RNA templates. In addition, HiScript II Transcriptase adds multiple point mutations, which further enhances the template affinity and progression, which greatly improves the synthesis ability of full-length cDNA, and can obtain cDNA up to 20 kb. It has higher tolerance to common reverse transcription inhibitors and is very suitable for reverse transcription reaction of plant tissue RNA rich in polysaccharides and polyphenols.

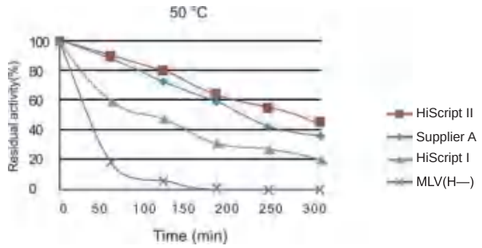
Components

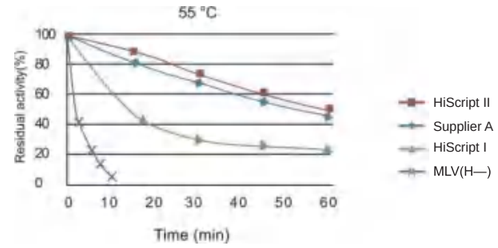
Components	R201-01 2,000 U	R201-02 10,000 U
5 × HiScript II Buffer	500 µl	500 µl
HiScript II Reverse Transcriptase (200 U/µl)	10 µl	50 µl

Features

Higher thermal stability

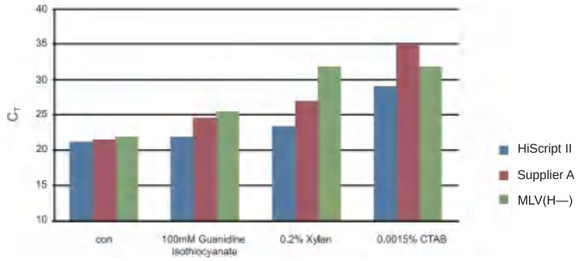
The HiScript II Reverse Transcriptase (Vazyme #R201) was stored at 50℃ and 55℃, where the half-life of R201 exceeded four hours at 50℃; at 55℃, the enzyme activity of R201 remained stable for a longer time compared with other products.





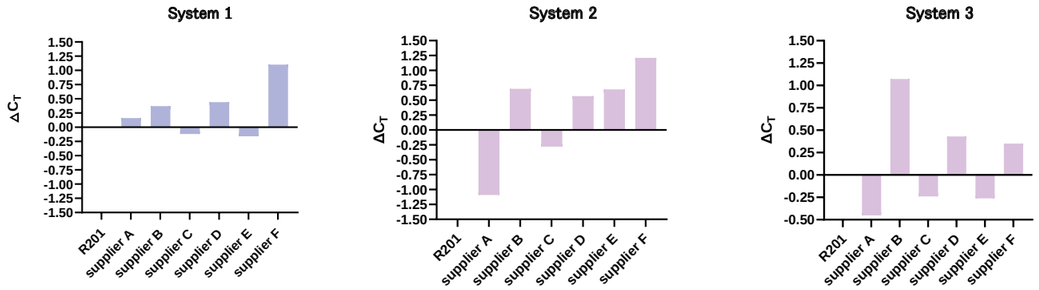
Strong impurity tolerance

Reverse transcription was performed with different enzymes using 1 μg total RNA of HeLa cells as template, and different concentrations of various reaction inhibitors were added to the system. 1 μL cDNA was used as template to amplify the human B2M gene by AceQ qPCR SYBR Green Master Mix, and the C_T values under various conditions were compared. A smaller C_T value represents a higher reverse transcription efficiency, that is, a higher impurity tolerance. HiScript II Reverse Transcriptase (Vazyme #R201) has been used for greater Reverse transcription efficiency and tolerance to impurities.



Great sensitivity

Using HeLa cell RNA as a template (100 ng/μl), using Vazyme #R201 and enzymes from suppliers A, B, C, D, E, and F, reverse transcription reaction was performed according to the procedures recommended in the respective instructions, and the obtained cDNA was quantified by qPCR anaylsis. It can be seen from the figure that in the three systems, most of the three systems were -0.5<△C_T<0.5, and the rest △C_T>0.5 (Note:△C_T=C_T (competitor)-C_T(R201)), indicating that the reverse transcription efficiency of Vazyme #R201 is comparable to that of common commercial products.



Murine RNase Inhibitor(R301)

Product description

Murine RNase Inhibitor is a recombinant mouse-derived RNase inhibitor expressed and purified in E. coli. It can bind to RNase A, B or C in a non-competitive manner, thereby inhibiting the activities of the three enzymes and protecting RNA from degradation. Murine RNase Inhibitor is a thermostable-based RNase inhibitor that exhibits inhibitory activity even with thermostable reverse transcriptases such as HiScript Reverse Transcriptase and HiScript II Reverse Transcriptase. Compatible with various commercial Reverse Transcriptases and DNA Polymerases. Compared with human RNase inhibitor, murine RNase inhibitor does not contain two cysteines that are very sensitive to oxidation in human protein, so it has higher antioxidant activity and is more suitable for experiments sensitive to high DTT (such as qPCR).

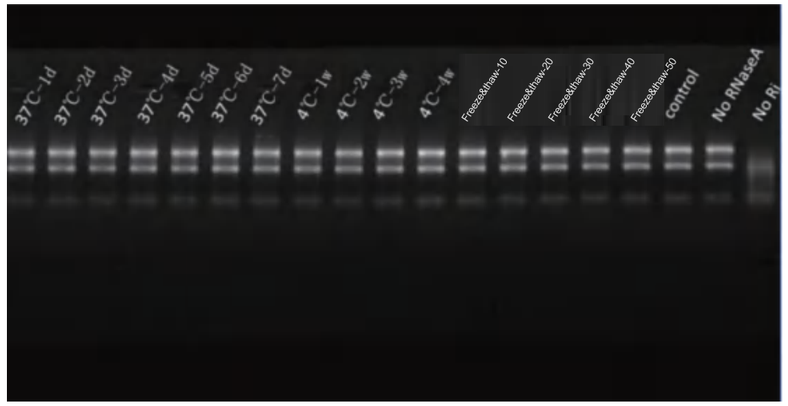
Components

Components	R301-01 2,000 U	R301-02 10,000 U	R301-03 20,000 U
Murine RNase Inhibitor (40 U/μl)	50 μl	250 μl	500 μl

Features

Excellent storage stability

Test the performance of Murine RNase Inhibitor (R301) by subjecting the products to agarose gel electrophoresis after reaction at 37 °C for 15 min in a PCR machine.



Picture 1. Electropherogram

High purity E. coli soluble expression, No RNase residue and compatible with RT-PCR/qPCR.

The performance of Murine RNase Inhibitor (R301) is still stable after the treatment of 4℃ acceleration for 4 weeks, 37℃ acceleration for 7days, 50 times freeze-thaw.