Vazyme

2020

2020 Product Catalogue

Reagents for Molecular Biology Research

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Overview of Vazyme

Vazyme: InoVation in Enzyme Technology

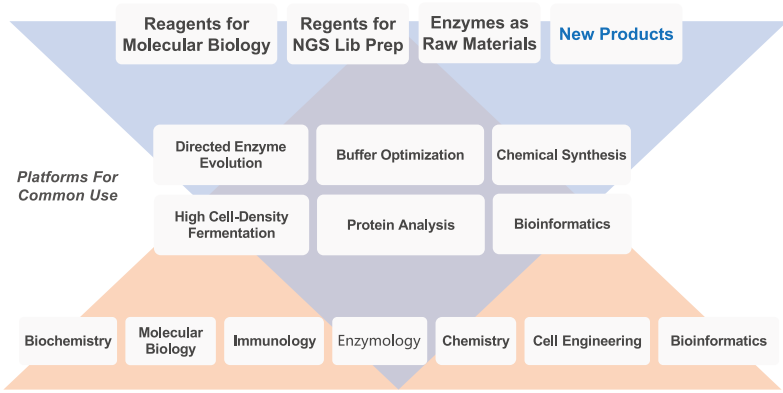
With the faith of “InnoVation in Enzyme Technology”, Vazyme Biotech Co., Ltd. has passionately focused on developing enzyme and antibody technologies and products for years. The Vazyme Biotech is now staffed by more than 1,000 employees. The headquarter is located in Nanjing of China with a R&D / manufacturing base that covers 25,000 m² and a GMP workshop of 4,000 m². Vazyme has developed a powerful sales network in China and is expanding into international markets.



Vazyme Technologies and Products

With years of experience, Vazyme has developed six technology platforms that can be commonly used for R&D and manufacturing, including (1) directed enzyme evolution, (2) buffer optimization, (3) chemical synthesis, (4) high cell-density fermentation, (5) protein analysis, and (6) bioinformatics.

Based on the above platforms, Vazyme now provides a variety of products, solutions, and services, which fall into three major product lines, including (1) solutions for molecular biology research, (2) solutions for Next-Generation Sequencing (NGS) library preparation, and (3) enzymes as raw materials for industrial use.



Developing Technologies to Improve Human Health

Fascinated by the enzyme and antibody technologies, we regard enzymes and antibodies as the key factor of the biotechnology industry. Vazyme's vision is to develop technology to improve human health.

Experts for Experts

2020 Vazyme Product Catalogue

Reagents for Molecular Biology Research

Contents

Contents

PCR

High-Fidelity PCR

Product Name	Size	Cat. No.#
HOT Phanta Max Super-Fidelity DNA Polymerase	100 U / 500 U / 1,000 U	P505-d1/d2/d3
2 × Phanta Max Master Mix	1 ml / 5 ml / 15 ml	P515-01/02/03
HOT 2 ×Phanta Max Master Mix (Dye Plus)	1 ml / 5 ml / 15 ml	P525-01/02/03

Conventional PCR

Product Name	Size	Cat. No.#
Taq DNA Polymerase (Mg^{2+} plus Buffer)	1,000 U / 5,000 U / 10,000 U	P101-01/02/03
Taq DNA Polymerase (Mg^{2+} free Buffer)	1,000 U / 5,000 U / 10,000 U	P102-01/02/03
Taq DNA Polymerase (Mg^{2+} plus Buffer, with dNTP)	1,000 U / 5,000 U / 10,000 U	P101-d1/d2/d3
Taq DNA Polymerase (Mg^{2+} free Buffer, with dNTP)	1,000 U / 5,000 U / 10,000 U	P102-d1/d2/d3
2 × Taq Master Mix	5 ml / 15 ml / 50 ml	P111-01/02/03
HOT 2 × Taq Master Mix (Dye Plus)	5 ml / 15 ml / 50 ml	P112-01/02/03
Green Taq Mix	5 ml / 15 ml / 50 ml	P131-01/02/03

High-Yield PCR

Product Name	Size	Cat. No.#
Taq Plus DNA Polymerase	250 U / 1,000 U / 3,000 U	P201-01/02/03
Taq Plus DNA Polymerase (with dNTP)	250 U / 1,000 U / 3,000 U	P201-d1/d2/d3
2 × Taq Plus Master Mix	5 ml / 15 ml / 50 ml	P211-01/02/03
HOT 2 × Taq Plus Master Mix II (Dye Plus)	5 ml / 15 ml / 50 ml	P213-01/02/03

Long-Fragment PCR

Product Name	Size	Cat. No.#
Vazyme LAmp DNA Polymerase (Mg^{2+} plus buffer)	125 U / 500 U	P301-01/02
Vazyme LAmp DNA Polymerase (Mg^{2+} plus buffer, with dNTP)	125 U / 500 U	P301-d1/d2
Vazyme LAmp DNA Polymerase (Mg^{2+} free buffer, with dNTP)	125 U / 500 U	P302-d1/d2
2 × Vazyme LAmp Master Mix	1 ml / 5 ml / 15 ml	P311-01/02/03
2 × Vazyme LAmp Master Mix (Dye Plus)	1 ml / 5 ml / 15 ml	P312-01/02/03

Direct PCR

Product Name	Size	Cat. No.#
HOT One Step Mouse Genotyping Kit	200 rxn	PD101-01
One Step U^{+} Probe Mouse Genotyping Kit	200 rxn	PD104-01
Blood Direct PCR Kit V2	50 rxn / 200 rxn	PD103-01/02

Rapid PCR

Product Name	Size	Cat. No.#
HOT 2 × Rapid Taq Master Mix	5 ml / 15 ml	P222-01/02
	50 ml (50 x 1 ml)	P222-03
	50 ml (10 x 5 ml)	P222-04

Multiplex PCR

Product Name	Size	Cat. No.#
Multiplex PCR Kit	50 rxn / 200 rxn / 1,000 rxn	PM101-01/02/03

Hot-Start PCR

Product Name	Size	Cat. No.#
HOT AceTaq DNA Polymerase	250 U / 1,000 U / 3,000 U	P401-d1/d2/d3
2 × AceTaq Master Mix	1 ml / 5 ml /15 ml	P411-01/02/03
2 × AceTaq Master Mix (Dye Plus)	1 ml / 5 ml / 15 ml	P412-01/02/03
Champagne Taq antibody	500 U	P121-01
HOT Champagne Taq DNA Polymerase	500 U (2.5 / 5 / 10 U/μl)	P122-d1/d2/d3

HOT Product Name	Size	Cat. No.#
Taq Pro HS DNA Polymerase	250 U / 1,000 U / 5,000 U	PN101-01/02/03
Taq Pro HS Master Mix	500 rxn / 1,500 rxn (20 μl/rxn)	PN111-01/02
Taq Pro HS U+ Master Mix	500 rxn / 1,500 rxn (20 μl/rxn)	PN112-01/02

Isothermal Amplification

Product Name	Size	Cat. No.#
Bst DNA Polymerase Large Fragment	800 U / 8,000 U	P701-01/02

PCR-Related

Product Name	Size	Cat. No.#
PCR Enhancer	500 μl	P021-01
dNTP Mix (10 mM each)	1 ml / 5 ml	P031-01/02
dNTP Mix (2.5 mM each)	1 ml / 5 ml	P032-01/02
Heat-labile UDG	100 U / 500 U	P051-01/02
E.coli UDG	500 U / 5,000 U	P061-01/02

Cloning / Mutagenesis

Fast Cloning

Product Name	Size	Cat. No.#
ClonExpress II One Step Cloning Kit	25 rxn / 50 rxn	C112-01/02
ClonExpress MultiS One Step Cloning Kit	10 rxn / 25 rxn	C113-01/02
HOT ClonExpress Ultra One Step Cloning Kit	25 rxn / 50 rxn	C115-01/02

Fast Mutagenesis

Product Name	Size	Cat. No.#
Mut Express II Fast Mutagenesis Kit V2	10 rxn / 25 rxn	C214-01/02
Mut Express MultiS Fast Mutagenesis Kit V2	10 rxn / 25 rxn	C215-01/02

TA Cloning

Product Name	Size	Cat. No.#
T4 DNA Ligase	40,000 U	C301-01
New 5min Universal Ligation Mix	50 rxn / 100 rxn	C311-01/02

TOPO Cloning

Product Name	Size	Cat. No.#
HOT 5min TA/Blunt-Zero Cloning Kit	25 rxn / 50 rxn	C601-01/02

Nucleic Acid Electrophoresis

GelRed Nucleic Acid Stain

Product Name	Size	Cat. No.#
HOT Ultra GelRed Nucleic Acid Stain (10000 ×)	0.5 ml / 5 ml / 50 ml	GR501-01/02/03

DNA Marker

Product Name	Size	Cat. No.#
DL2000 Plus DNA Marker	250 μl / 500 μl	MD101-01/02
DL5000 DNA Marker	250 μl / 500 μl	MD102-01/02
DL15000 DNA Marker	250 μl / 500 μl	MD103-01/02
100 bp DNA Ladder	250 μl / 500 μl	MD104-01/02

Reverse Transcription

Conventional RT-PCR

Product Name	Size	Cat. No.#
HiScript II Reverse Transcriptase	2,000 U / 10,000 U	R201-01/02
HiScript III Reverse Transcriptase	10,000 U	R302-01
HiScript II 1st Strand cDNA Synthesis Kit	50 rxn / 100 rxn (20 μl / rxn)	R211-01/02
HOT HiScript III 1st Strand cDNA Synthesis Kit (+gDNA wiper)	50 rxn / 100 rxn (20 μl / rxn)	R312-01/02
M-MLV(H-) Reverse Transcriptase	10,000 U	R021-01
Murine RNase inhibitor	2,000 U / 10,000 U / 20,000 U	R301-01/02/03

RT-qPCR SuperMix

Product Name	Size	Cat. No.#
HiScript II Q RT SuperMix for qPCR	100 rxn (20 μl / rxn)	R222-01
HiScript II Q RT SuperMix for qPCR (+gDNA wiper)	100 rxn (20 μl / rxn)	R223-01
HiScript II Q Select RT SuperMix for qPCR	100 rxn (20 μl / rxn)	R232-01
HiScript II Q Select RT SuperMix for qPCR (+gDNA wiper)	100 rxn (20 μl / rxn)	R233-01
HOT HiScript III RT SuperMix for qPCR (+gDNA wiper)	100 rxn (20 μl / rxn)	R323-01
HOT HiScript III All-in-one RT SuperMix Perfect for qPCR	100 rxn (20 μl / rxn)	R333-01

One-Step RT-PCR

Product Name	Size	Cat. No.#
HiScript II One Step RT-PCR Kit	50 rxn (50 μl / rxn)	P611-01
HiScript II One Step RT-PCR Kit (Dye Plus)	50 rxn (50 μl / rxn)	P612-01

Single Cell Sequence Amplification

Product Name	Size	Cat. No.#
Single Cell Sequence Specific Amplification Kit	200 rxn	P621-01

miRNA Reverse Transcription

Product Name	Size	Cat. No.#
miRNA 1st Strand cDNA Synthesis Kit (by stem-loop)	50 rxn / 100 rxn (20 μl / rxn)	MR101-01/02

qPCR

qPCR Master Mix (SYBR-Green)

Product Name	Size	Cat. No.#
HOT ChamQ Universal SYBR® qPCR Master Mix	500 rxn / 2,500 rxn (20 μl / rxn)	Q711-02/03
AceQ Universal SYBR® qPCR Master Mix	500 rxn / 2,500 rxn (20 μl / rxn)	Q511-02/03
AceQ qPCR SYBR® Green Master Mix	500 rxn / 2,500 rxn (20 μl / rxn)	Q111-02/03

qPCR Master Mix (Probe)

Product Name	Size	Cat. No.#
AceQ qPCR Probe Master Mix	500 rxn / 2,500 rxn (20 μl / rxn)	Q112-02/03
HOT AceQ Universal U+ Probe Master Mix V2	500 rxn / 2,500 rxn (20 μl / rxn)	Q513-02/03
HOT ChamQ Geno-SNP Probe Master Mix	500 rxn / 2,500 rxn (20 μl / rxn)	Q811-02/03
Animal Detection U+ Probe Master Mix	5 x 1 ml / 1 x 10 ml	QV110-01/02
HOT Taq Pro HS Probe Master Mix	500 rxn / 2,500 rxn (20 μl / rxn)	QN111-01/02
HOT Taq Pro HS U+ Probe Master Mix	500 rxn / 2,500 rxn (20 μl / rxn)	QN112-01/02
HOT Taq Pro HS Universal Probe Master Mix	500 rxn / 2,500 rxn (20 μl / rxn)	QN113-01/02
HOT Taq Pro HS Universal U+ Probe Master Mix	500 rxn / 2,500 rxn (20 μl / rxn)	QN114-01/02

One-Step qRT-PCR Mix

Product Name	Size	Cat. No.#
HiScript II One Step qRT-PCR SYBR® Green Kit	250 rxn (20 μl / rxn)	Q221-01
HiScript II One Step qRT-PCR Probe Kit	250 rxn (20 μl / rxn)	Q222-01
HiScript II U+ One Step qRT-PCR Probe Kit	250 rxn (20 μl / rxn)	Q223-01
HOT HiScript II U One Step qRT-PCR Probe Kit	5000 rxn (30 μl / rxn)	Q222-CN

miRNA qPCR

Product Name	Size	Cat. No.#
miRNA Universal SYBR® qPCR Master Mix	125 rxn / 500 rxn (20 μl / rxn)	MQ101-01/02

Genome Editing

Product Name	Size	Cat. No.#
Cas9 Nuclease	50 pmol / 250 pmol	EN301-01/02
T7 Endonuclease I	50 pmol / 250 pmol	EN303-01/02

In Vitro Transcription

Product Name	Size	Cat. No.#
T7 High Yield RNA Transcription Kit	50 rxn / 100 rxn	TR101-01/02
HOT T7 RNAi Transcription Kit	25 rxn / 50 rxn	TR102-01/02

Nucleic Acid Isolation

RNA Isolation (Column)

Product Name	Size	Cat. No.#
HOT FastPure Cell / Tissue Total RNA Isolation Mini Kit	50 rxn	RC101
HOT FastPure Plant Total RNA Isolation Kit (Polysaccharides / Polyphenolics-Rich)	50 rxn	RC401

DNA Isolation (Column)

Product Name	Size	Cat. No.#
FastPure Blood DNA Isolation Mini Kit V2	50 rxn / 200 rxn	DC111-01/02
FastPure Cell/Tissue DNA Isolation Mini Kit	100 rxn	DC102
FastPure Bacteria DNA Isolation Mini Kit	100 rxn	DC103
FastPure Plant DNA Isolation Mini Kit	50 rxn	DC104
HOT FastPure FFPE DNA Isolation Kit	50 rxn	DC105
Lysozyme	200 mg	DE103

Tissue Stabilizer

Product Name	Size	Cat. No.#
RNA Keeper Tissue Stabilizer	100 ml	R501-01

Exosome Isolation

Product Name	Size	Cat. No.#
VEX Exosome Isolation Reagent (from cell culture media)	50 ml	R601
VEX Exosome Isolation Reagent (from serum)	10 ml	R602
VEX Exosome Isolation Reagent (from plasma)	10 ml	R603

Cell Biology / Protein Research

Cell Counting

Product Name	Size	Cat. No.#
HOT CCK-8 Cell Counting Kit	500 rxn / 1,000 rxn	A311-01/02

Dual Luciferase Reporter Assay

Product Name	Size	Cat. No.#
HOT Dual Luciferase Reporter Assay Kit	100 rxn	DL101-01
Duo-Lite Luciferase Assay System	10 ml / 100 ml	DD1205-01/02

Mycoplasma

Product Name	Size	Cat. No.#
HOT MycoBlue Mycoplasma Detector	20 rxn / 50 rxn	D101-01/02

Protein Marker

Product Name	Size	Cat. No.#
HOT 180 kDa Prestained Protein Marker	2 × 250 µl / 10 × 250 µl (5 µl/rxn)	MP102-01/02

PCR

Selection Guide

Applications	Products (Cat.#)	Features	Applicable for
Conventional PCR	2× Taq Master Mix (#P111) 2× Taq Master Mix (Dye Plus) (#P112) Green Taq Mix (#P131)	No 3' --> 5' exonuclease activity. Excellent compatibility. Products contain A at 3'-end.	Colony PCR; Large-scale gene identification; TA Cloning for small fragments.
High-Yield PCR	2× Taq Plus Master Mix (#P211) 2× Taq Plus Master Mix II (Dye Plus) (#P213)	With fidelity 6-fold higher than Taq. Mixed products with 3'-end blunt or containing A.	PCR that requires some fidelity.
Rapid PCR	2× Rapid Taq Master Mix (#P222)	Amplification speed: up to 15 sec / kb.	Colony PCR.
Long-Fragment PCR	2× Vazyme LAmp Master Mix (#P311) 2× Vazyme LAmp Master Mix (Dye Plus) (#P312)	Efficiently amplify fragments > 20 kb.	Long-fragment amplification.
Hot-Start PCR	2× AceTaq Master Mix (#P411) 2× AceTaq Master Mix (Dye Plus) (#P412) Champagne Taq Antibody (#P121) Champagne Taq DNA Polymerase (#P122) Taq Pro HS DNA Polymerase (#PN101) Taq Pro HS Master Mix (#PN111) Taq Pro HS U+ Master Mix (#PN112)	Excellent specificity. Excellent sensitivity.	Amplification that requires higher sensitivity and specificity; Amplification of genes with low copy or qPCR assay from complex templates (genomic DNA, cDNA).
Multiplex PCR	Multiplex PCR Kit (#PM101)	19-plex PCR in one single reaction.	Detection or typing of pathogens.
Direct PCR	One Step Mouse Genotyping Kit (#PD101) Blood Direct PCR Kit V2 (#PD103)	Easy and fast, without DNA purification.	One step mouse genotyping; Direct PCR from plant tissues; Direct PCR from blood.
High-Fidelity PCR	Phanta Max Super-Fidelity DNA Polymerase (#P505) 2× Phanta Max Master Mix (#P515) 2× Phanta Max Master Mix (Dye Plus) (#P525)	With super fidelity 53-fold higher than Taq; High resistance to PCR inhibitors.	High-fidelity PCR. Amplification of templates with high GC-content; Long-fragment (up to 40 kb) amplification.

High-Fidelity PCR

→ 2× Phanta Max Master Mix (#P515)

→ 2× Phanta Max Master Mix (Dye Plus) (#P525)

♡ Super-Fidelity

♡ High Resistance to PCR Inhibitors

Super Fidelity: 53-fold higher than Taq DNA Polymerase.

Long Fragment: amplify fragments up to 40 kb.

Suitable for templates with high GC-content.

Suitable for Direct-PCR using crude materials as templates*.

* Validated crude materials: bacteria, fungi, whole blood, cultured cells, plant or animal tissue lysate, food lysates, etc.

Selected Product Citations

Zhao Q, et al. Metabolic coupling of two small-molecule thiols programs the biosynthesis of lincomycin A. ***Nature***, 2015, 518(7537):115-9.

Tian Z, et al. An enzymatic [4+2] cyclization cascade creates the pentacyclic core of pyrroindomycins. ***Nature Chemical Biology***, 2015, 11(4):259-65.

Han X, et al. Mapping the Mouse Cell Atlas by Microwell-Seq. ***Cell***, 2018, 172(5):1091-107.

Cheng X, et al. Pacer Mediates the Function of Class III PI3K and HOPS Complexes in Autophagosome Maturation by Engaging Stx17. ***Molecular Cell***, 2017, 65(6):1029-43.

Lv M, et al. Characterization of a C3 Deoxygenation Pathway Reveals a Key Branch Point in Aminoglycoside Biosynthesis. ***Journal of the American Chemical Society***, 2016, 138(20):6427-35.

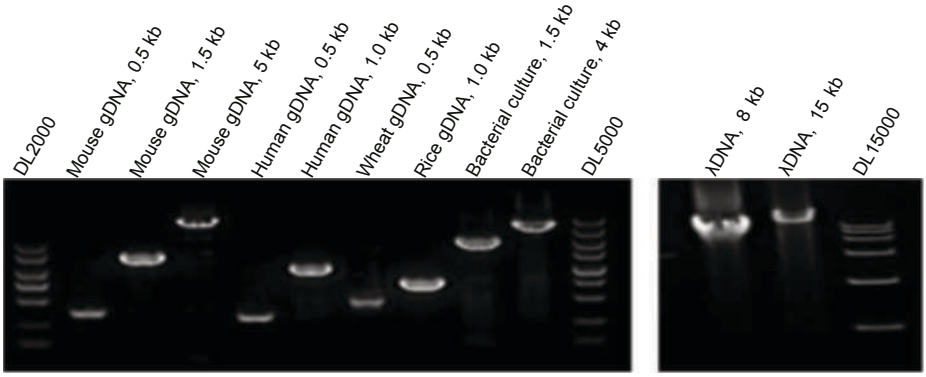
High-Yield PCR

→ 2× Taq Plus Master Mix II (Dye Plus) (#P213)

Features

* **Robust** performance for high-yield PCR in most primer-template systems.
* **Ready-to-use master mix** with no need for operations on ice.
* PCR products can be directly loaded for electrophoresis with no need for loading buffer.

Validation Data



2× Taq Plus Master Mix II (Vazyme, #P213) demonstrated excellent template compatibility. Fragments (0.5 kb to 15 kb) were amplified from genomic DNA (mouse, human, wheat, rice), bacterial culture, and λDNA, respectively. A specific corresponding band was observed in each PCR.

Selected Product Citations

Zhang X, et al. (2014) Complementary sequence-mediated exon circularization. ***Cell***, 159(1):134-47.

Yuan H, et al. Gyrl-like proteins catalyze cyclopropanoid hydrolysis to confer cellular protection. ***Nature Communications***, 2017, 8(1).1485.

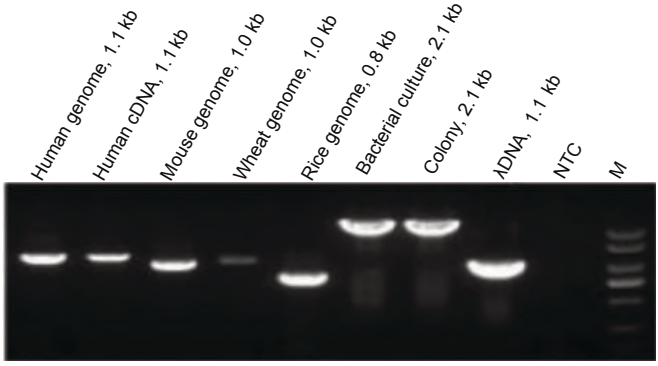
Rapid PCR

→ 2× Rapid Taq Master Mix (#P222)

Features

* **Rapid**: amplification speed is **15 sec / kb**, with an extreme speed of 1 sec / kb for fragments within 1 kb.
* **Ready-to-use master mix** with no need for operations on ice.
* PCR products can be directly loaded for electrophoresis with no need for loading buffer.
* **Excellent stability:** remains stable after 50 freeze-thaw cycles.

Validation Data



Fragments (1 kb - 2 kb) was amplified from genomic DNA (human, mouse, wheat, rice), cDNA (human), bacterial culture, colony, and λ DNA, respectively. The extension time was set as 1 sec / kb. Ten μl of PCR product was loaded for agarose gel electrophoresis. Specific bands were observed.

Selected Product Citations

Zhang B, et al. Enzyme-catalysed [6+4] cycloadditions in the biosynthesis of natural products. ***Nature***, 2019, 568(7750):122-6.

Wang YS, et al. Molecular Basis for the Final Oxidative RearrangementSteps in Chartreusin Biosynthesis. ***J Am Chem Soc***, 2018, 140(34):10909-14.

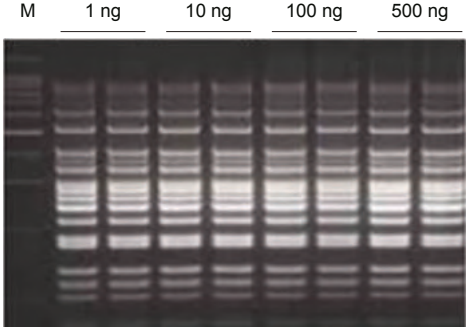
Multiplex PCR

→ **Multiplex PCR Kit (#PM101)**

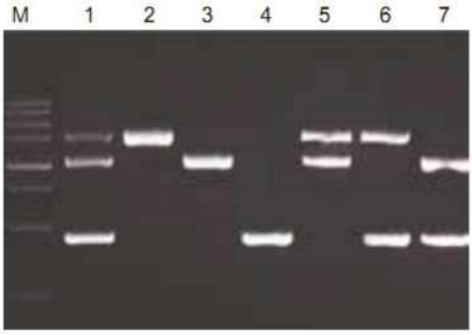
Features

* Multiplex: **19-plex** PCR or even higher.
* Excellent target-to-target amplification uniformity and extremely low target preference.
* **Highly sensitive** amplification from trace amount of genomic DNA (>= 1 ng).

Validation Data



Uniform amplification coverage of different regions. Human genomic DNA was used as template for 19-plex PCR. The size of the amplicons ranged from 70 bp to 916 bp. The result indicated that Multiplex PCR Kit (Vazyme, #PM101) has a uniform amplification coverage of different regions for 1 ng-500 ng of template.



The Multiplex PCR Kit showed excellent compatibility with fragment length. Mouse genomic DNA was used as template for amplification of 1.55 kb, 1.07 kb, and 0.45 kb fragments, respectively. The result indicated that Multiplex PCR Kit (Vazyme, #PM101) is compatible with amplicons of various lengths in one single reaction system.

1: 3-plex PCR
2-4: 1-plex PCR
5-7: 2-plex PCR
M: DL5000 DNA Marker

Cloning / Mutagenesis

Selection Guide

Applications	Products (Cat.#)	Features	Applicable for
Fast Cloning	ClonExpress Ultra One Step Cloning Kit (#C115) ClonExpress II One Step Cloning Kit (#C112) ClonExpress MultiS One Step Cloning Kit (#C113)	Easy, fast, and efficient. No need to consider the restriction enzyme cutting sites on the inserts. Ligase-independent. Positive Clone Rate > 95%. Efficient cloning of fragments of 50 bp - 10 kb.	Cloning or assembly of 1-5 fragments.
Fast Mutagenesis	Mut Express II Fast Mutagenesis Kit V2 (#C214) Mut Express MultiS Fast Mutagenesis Kit V2 (#C215)	Efficient amplification of any plasmids within 20 kb. Site-directed mutations of 1-5 discontinuous sites in one reaction.	1-5 separate site-directed mutagenesis on one plasmid.
TOPO Cloning	5min TA/Blunt-Zero Cloning Kit (#C601)	Cloning within 5 min. Positive Clone Rate > 95%	TA cloning. cloning with blunt ends.

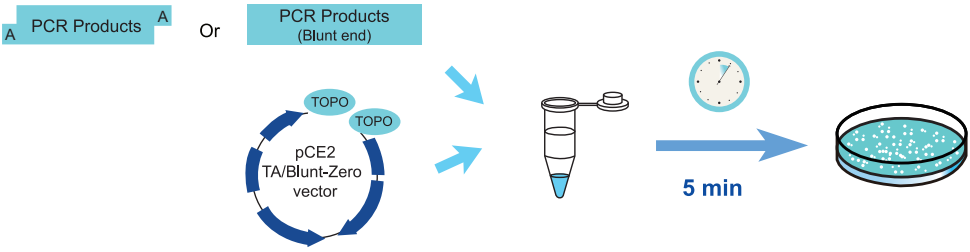
TOPO Cloning

→ **5min TA/Blunt-Zero Cloning Kit (#C601)**

Features

* Ready-to-use master mix.
* Suitable for both **TA cloning** and **blunt-end cloning**.
* Rapid cloning within **5 min**.
* High cloning efficiency with Positive Clone Rate > 95%.
* Ampicillin and Kana dual resistance vector.

Workflow



Fast Cloning

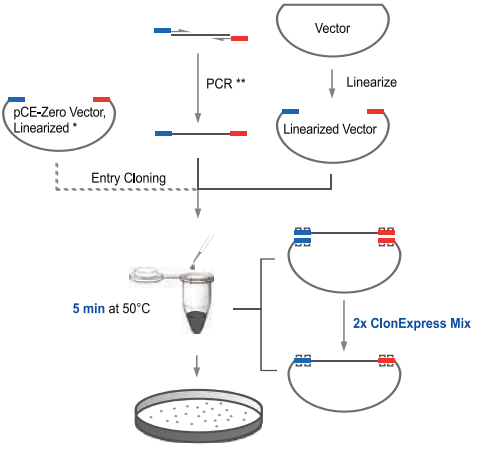
→ ClonExpress Ultra One Step Cloning Kit (#C115)

Features

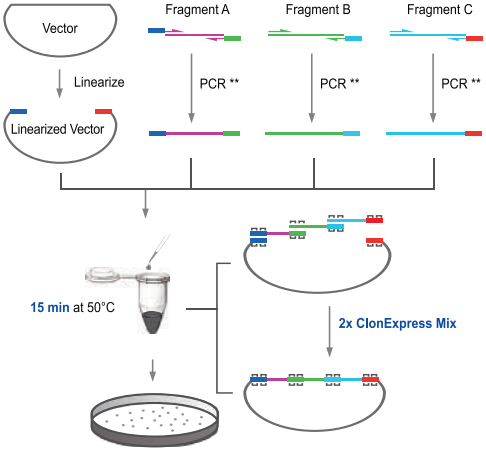
* Cloning within **5 min**.
* Ready-to-use super mix in one tube.
* Efficient cloning of fragments of 50 bp - 10 kb with Positive Clone Rate > 95%.
* Suitable for cloning of 1 fragment, assembly of 2 - 5 fragments, and entry cloning.
* Independent of DNA ligase, significantly reducing the self-ligated colonies.

Mechanism

Cloning of 1 Fragment



Assembly of 2 - 5 fragments.



** pCE-Zero Vector, Linearized, is supplied with ClonExpress Ultra One Step Cloning Kit (Vazyme, #C115).*
*** It is highly recommended to use Vazyme's APP - "CE Design" - for easy primer design.*

Selected Product Citations of ClonExpress

Wu N, et al. TBX6 null variants and a common hypomorphic allele in congenital scoliosis. ***New England Journal of Medicine***, 2015, 372(4):341-50.

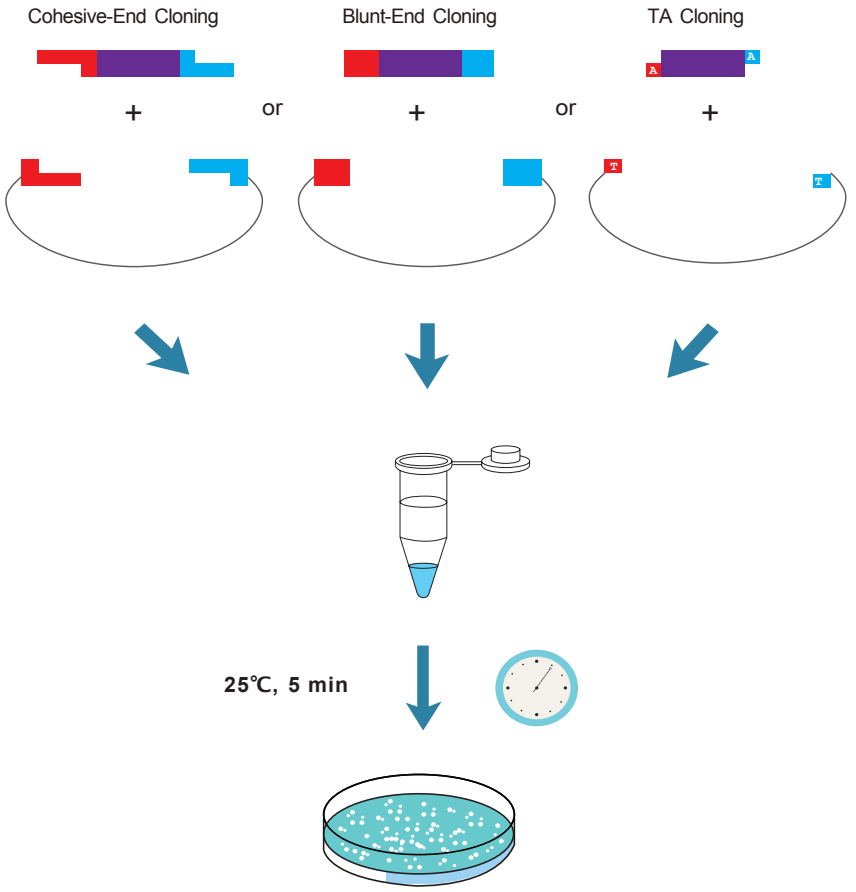
Ge J, et al. Architecture of the mammalian mechanosensitive Piezo1 channel. ***Nature***, 2015, 527(7576):64-9.

→ 5min Universal Ligation Mix (#C311)

Features

* **Versatile**: Suitable for TA cloning, blunt-end cloning, cohesive-end cloning, and ligation of linkers or adapters.
* **Fast**: Cloning within 5 min at 25℃.
* **Efficient**: Positive Clone Rate > 95%.

Mechanism

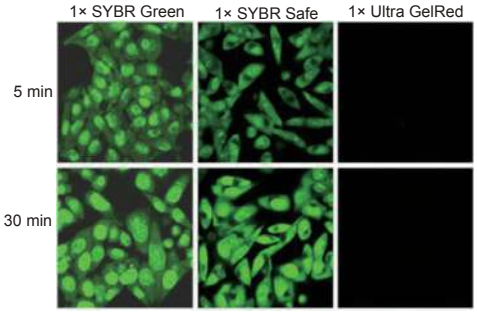


GelRed

→ Ultra GelRed Nucleic Acid Stain (10000×) (#GR501)

Perfect substitute for ethidium bromide (EB)

No toxicity



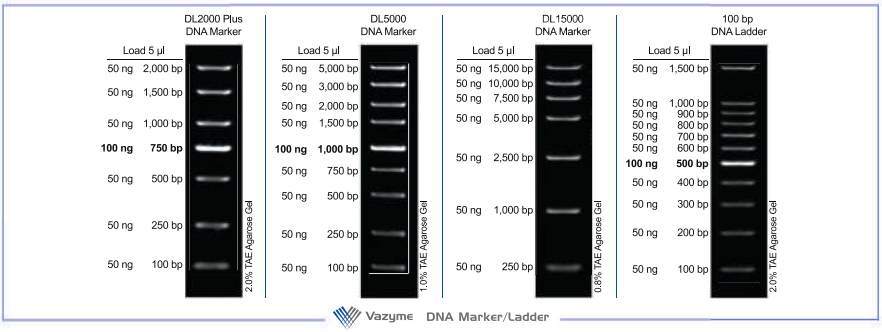
Ultra GelRed is unable to cross cell membranes.

DNA Marker/ Ladder

→ DNA Markers / Ladders

Stable

Clear Bands



Reverse Transcription

Selection Guide

	HiScript® II 1st Strand cDNA Synthesis Kit (R211)	HiScript® II 1st Strand cDNA Synthesis Kit (+gDNA wiper) (R212)	HiScript® II Q RT SuperMix for qPCR (R222)	HiScript® II Q RT SuperMix for qPCR (+gDNA wiper) (R223)	HiScript® II Q Select RT SuperMix for qPCR (R232)	HiScript® II Q Select RT SuperMix for qPCR (+gDNA wiper) (R233)	HiScript® III 1st Strand cDNA Synthesis Kit (+gDNA wiper) (R312)	HiScript® III RT SuperMix for qPCR (+gDNA wiper) (R323)
Applications								
RT-qPCR			■	■	■	■		■
RT-PCR	■	■					■	
Features								
SuperMix			■	■	■	■		■
Long-fragment cDNA	■	■					■	
Rapid removal of Genomic DNA		■		■		■	■	■
Primers								
Oligo dT_{23} VN / N6 Mix			■	■				■
Optional	■	■			■	■	■	

	M-MLV (H-) (#R021)	HiScript II Reverse Transcriptase (#R201)	HiScript III Reverse Transcriptase (#R302)
Reaction temperature	37℃ - 42℃	42℃ - 55℃	37℃ - 50℃
Thermal stability	☆☆☆	☆☆☆☆☆	☆☆☆☆
RNase H activity	No	No	No
cDNA length	2 kb - 3 kb	Up to 20 kb	Up to 20 kb
Template adaptability	☆☆☆	☆☆☆☆	☆☆☆☆☆
Crude material adaptability	☆☆☆	☆☆☆☆	☆☆☆☆☆

RT-qPCR SuperMix

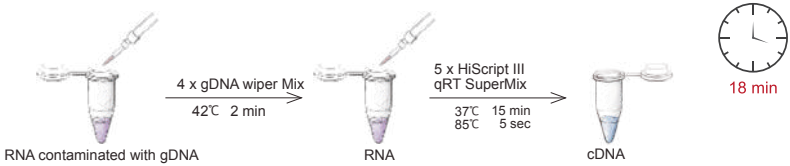
→ HiScript III RT SuperMix for qPCR (+gDNA wiper) (#R323)

Features

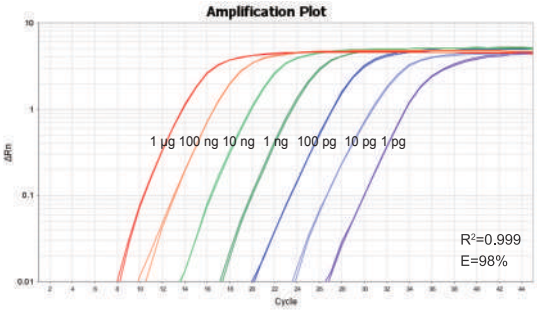
* **Ready-to-use SuperMix**: reverse transcription within 20 min by only adding template RNA.
* Excellent efficiency for low-input RNA or degraded RNA.
* Excellent tolerance for impurities (i.e. ethanol, isopropanol, phenol water, guanidine thiocyanate, humic acid).
* Lower C_T value and higher efficiency than most other commercially available reverse transcription reagents.

Validation Data

1. Easy & Fast



2. Excellent Sensitivity



RNA of HeLa cells was serially diluted and reverse transcribed using HiScript III RT SuperMix for qPCR (+gDNA wiper) (Vazyme, #R323), followed by qPCR detection of gene ACTB. The results show an excellent linear relationship across a wide range of RNA concentrations. The target gene (ACTB) was detected in 1 pg of RNA.

qPCR

Selection Guide

Applications	Products (Cat.#)
SYBR	ChamQ Universal SYBR QPCR Master Mix (#Q711)
Probe	AceQ Universal U+ Probe Master Mix V2 (#Q513)
SNP (TaqMan MGB Probe)	ChamQ Geno-SNP Probe Master Mix (#Q811)

qPCR Master Mix (SYBR)

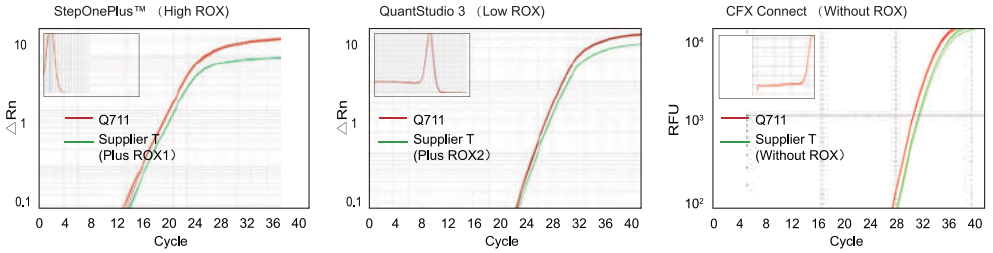
→ ChamQ Universal SYBR® qPCR Master Mix (#Q711)

Best Combination of **Specificity + Sensitivity**

- Unique Hot-Start Taq
- Optimal Concentrations of Mg^{2+} and Dye
- Unique specificity-promoting Factors
- Universal

Validation Data

Applicable for almost all qPCR instruments.



Selected Product Citations

Xu L, et al. The transcription factor TCF-1 initiates the differentiation of TFH cells during acute viral infection. ***Nature Immunology***, 2015, 47(3):538-51.

Guo C, et al. Cholesterol Homeostatic Regulator SCAP-SREBP2 Integrates NLRP3 Inflammasome Activation and Cholesterol Biosynthetic Signaling in Macrophages. ***Immunity***, 2018, 49(5): 842-56.

qPCR Master Mix (Probe)

→ AceQ Universal U+ Probe Master Mix V2 (#Q513)

Features

*** Excellent sensitivity:** Hot-start AceTaq and optimal buffer ensure high sensitivity and effectively inhibit non-specific amplification.

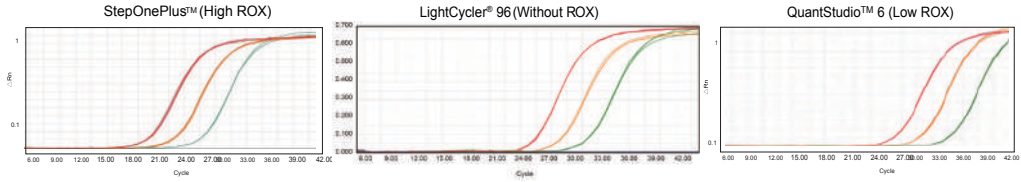
* Excellent linear relationship over a large range of input amount of template. Suitable for the detection of single-copy templates.

*** Anti-contamination:** the dUTP/UDG system eliminates possible contaminations and ensures reliable results.

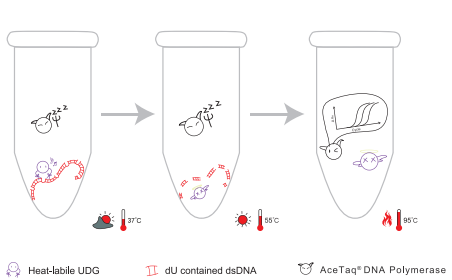
*** Universal:** applicable for almost all qPCR instruments.

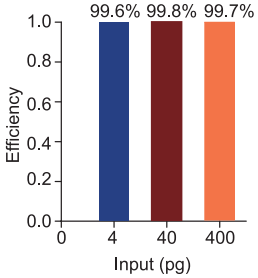
Validation Data

1. Applicable for almost all qPCR instruments.



2. dUTP/UDG system.





For Vazyme #Q513, the removal rate of the contaminated template is as high as 99.6%, effectively ensuring the accuracy of experimental results. U-containing templates (4 pg, 40 pg, 400 pg) were added respectively to the reaction system to evaluate the removal efficiency of the contaminated template by Vazyme #Q513.

qPCR Master Mix (Probe)

→ ChamQ Geno-SNP Probe Master Mix (#Q811)

Advantages

* Compatible with 1 ng - 10 ng of input genomic DNA.

* Accurate genotyping of SNP sites with GC-content of 25% - 73%.

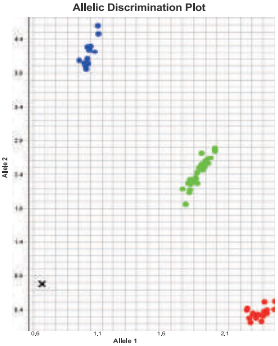
* Excellent stability: stable signal and accurate genotyping results can be obtained both 72 hr pre-PCR and 72 hr post-PCR.

  * **72 hr pre-PCR**: PCR reaction solutions were prepared and left in darkness (at room temperature) for 72 hr before PCR;
  * **72 hr post-PCR**: after PCR, the samples were left in darkness (at room temperature) for 72 hr.

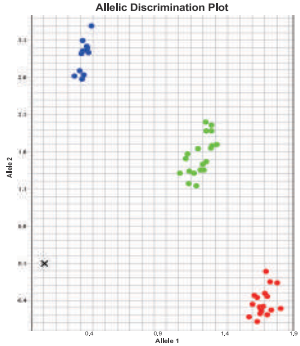
* Blood lysate can be directly used as a template for SNP genotyping, with no need for blood genomic DNA extraction.

Validation Data

1. Flexible input amounts.

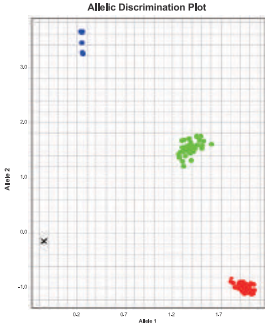


10 ng gDNA

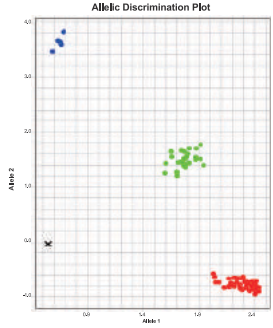


1 ng gDNA

2. Direct genotyping with blood lysate.



Blood genomic DNA



Blood lysate

Nucleic Acid Isolation

Selection Guide

Category	Series	Sample / Application	Products	Cat.#
DNA Isolation & Purification	DNA Extraction (Column)	Blood	FastPure Blood DNA Isolation Mini Kit V2	DC111
		Cell / Tissue	FastPure Cell/Tissue DNA Isolation Mini Kit	DC102
		Bacterial	FastPure Bacteria DNA Isolation Mini Kit	DC103
		Plant	FastPure Plant DNA Isolation Mini Kit	DC104
		FFPE	FastPure FFPE DNA Isolation Kit	DC105
		Lysozyme	Lysozyme	DE103
RNA Isolation & Purification	RNA Tissue Keeper	RNA Keeper for fresh tissue	RNA Keeper Tissue Stabilizer	R501
	Column RNA Extraction	Cell / tissue total RNA	FastPure Cell/Tissue Total RNA Isolation Mini Kit	RC101
		Polysaccharide & Polyphenol-rich Plant total RNA	FastPure Plant Total RNA Isolation Kit (Polysaccharides & Polyphenolics-rich)	RC401
Exosome Isolation	Cell supernatant		VEX Exosome Isolation Reagent (from cell culture media)	R601
	Serum		VEX Exosome Isolation Reagent (from serum)	R602
	Plasma		VEX Exosome Isolation Reagent (from plasma)	R603

Plant RNA and DNA Isolation

FastPure Plant Total RNA Isolation Kit (Polysaccharides & Polyphenolics-rich) (#RC401)

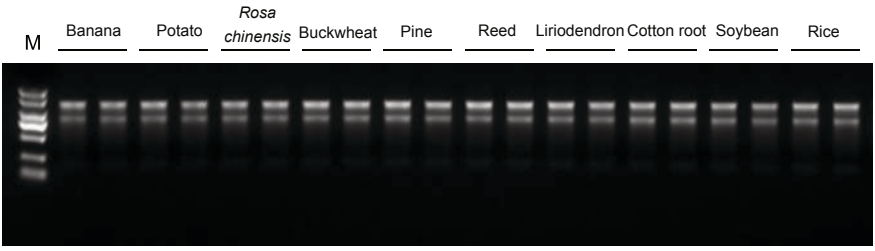
Features

* **High purity**.
* Rapid extraction of total RNA from plant tissues, especially from those rich in polysaccharide & polyphenol.
* **Low genomic DNA residue**.

Validated Samples

Pine needles, *Eriobotrya japonica* leaves, potato tubers, grape fruits, apples, pears, tobacco leaves, mature leaves and roots of wheat, peach fruit, lotus, chrysanthemum rhizome, bananas, *Rosa chinensis*, buckwheat leaves and seeds, poplar, *Catharanthus roseus* leaves, liriodendron, reed, rice plant, roots and leaves of cotton, strawberry leaf, *Phoebe neurantha* leaves, ginkgo (root, leaf, flower and fruits), Arabidopsis seeds, corn seeds, fungal hyphae, etc.

Validation Data



Total RNA was extracted using Vazyme #RC401 from 50 mg of banana fruit, potato tubers, rose petals, pine needles, reed leaves, Liriodendron leaves, cotton roots, soybean leaves, rice leaves, or 20 mg of buckwheat seed, respectively. The RNA products were loaded for agarose gel electrophoresis. Vazyme #RC401 showed great compatibility to above plants, especially to those that were rich in polysaccharide & polyphenol, and the RNA extracted using Vazyme #RC401 was with good integrity and high yield.

M: *DL2000 Plus DNA Marker (Vazyme, #MD101). The elution volume was 100 μl and the loading amount was 4 μl-10 μl for agarose gel electrophoresis.*

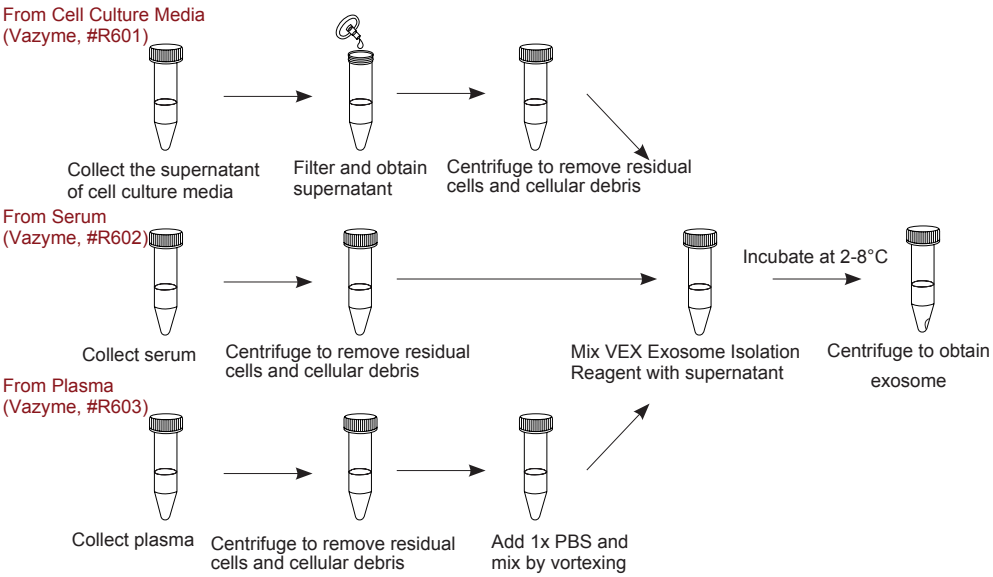
Exosome Isolation

→ VEX Exosome Isolation Reagents

Features

* Easy isolation of exosomes by one-step precipitation, avoiding time-consuming ultra-centrifugation.
* Intact exosomes with high yield obtained by low-speed centrifugation.

Workflow



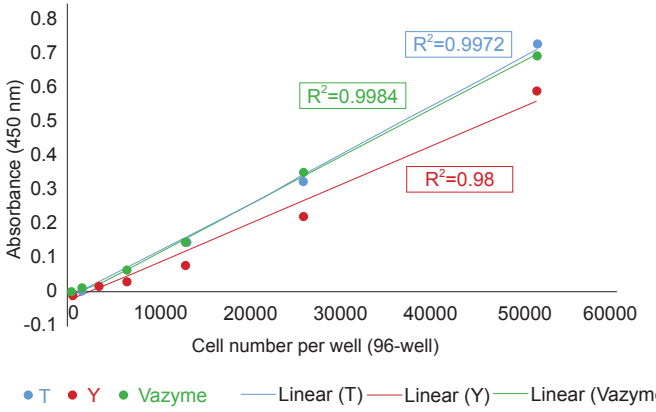
Cell Counting

→ CCK-8 Cell Counting Kit (#A311)

Features

* Ready-to-use solution.
* High sensitivity, with excellent linear correlation and repeatability.
* Low cytotoxicity.

Validation Data



HEK293 suspension cells were serially diluted and inoculated to a 96-well plate. The cell density in each group (n = 3) is: 0, 400, 800, 1600, 3200, 6400, 12800, 25600, 51200 cells per well. CCK-8 reagents from Vazyme (#A311, green), Supplier T (blue), and Supplier Y (red) were used for cell counting, respectively. The R² value of Vazyme #A311 is > 0.99.

Selected Product Citations

Zheng Q, et al. Thiopeptide antibiotics exhibit a dual mode of action against intracellular pathogens by affecting both host and microbe. ***Chemistry & Biology***, 2015, 22(8):1002-7.

Liu Z, et al. Adiponectin reduces ER stress-induced apoptosis through PPARα transcriptional regulation of ATF2 in mouse adipose. ***Cell Death & Disease***, 2016, 7(11):e2487.

Luciferase Assay

→ Duo-Lite Luciferase Assay System (#DD1205)

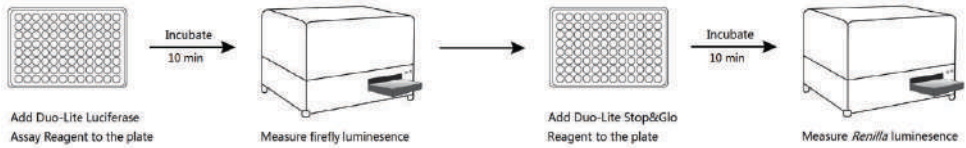
Features

* **Easy to operate**: The experiment could be completed by two steps: adding sample and reading plate. There is no need for cell lysis.

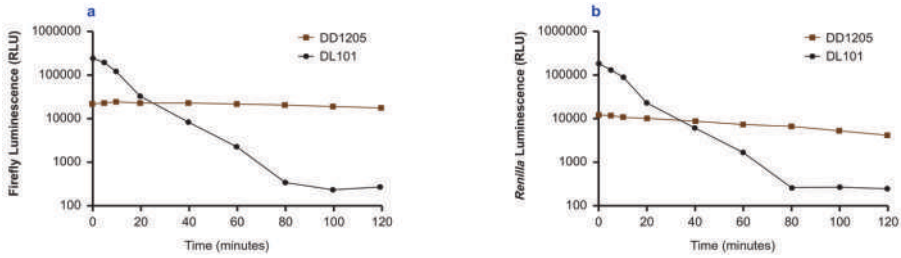
* **Stable signal**: Glow-type kit with 2h half-life of fluorescence. Suitable for high-throughput operation.

* **High accuracy**: The system contains Renilla luciferase, which could correct the errors that caused by differences among cell number, transfection efficiency and cell growth state.

Workflow



Validation Data



Sample: HEK293 cells co-transfected with firefly + plasmid (96 well plate incubate)

Experimental design: Detect the dynamic change of fluorescent values of glow-type kit (Vazyme #DD1205) and flash-type kit (Vazyme #DL101) within 120 min simultaneously.

Conclusion: Compared with flash-type kit (Vazyme #DL101), glow-type kit (Vazyme #DD1205) shows higher light stability. The half-life of fluorescence is up to 2h.

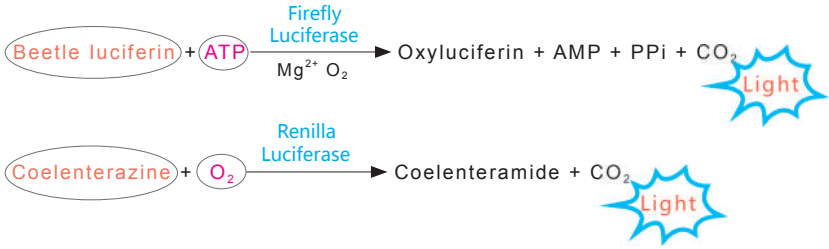
Luciferase Assay

→ **Dual Luciferase Reporter Assay Kit (#DL101)**

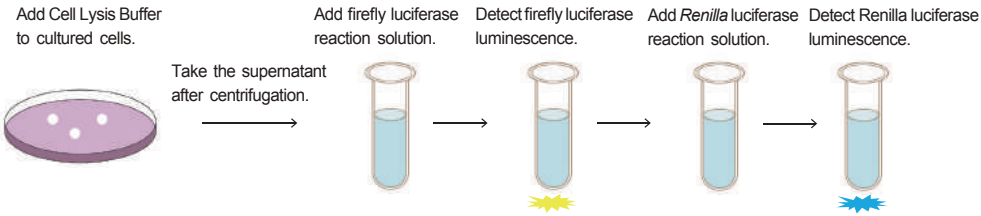
Features

* Robust luminescent signals: applicable for analysis of weak promoters and other genetic regulatory elements.
* Detection linear range covers up to 8 orders of magnitude (R^2 > 0.99).
* Detection sensitivity of 10^{-18} mole.

Mechanism



Workflow



Selected Product Citations

Liu Z, et al. Circular RNA hsa_circ_001783 regulates breast cancer progression via sponging miR-200c-3p. ***Cell Death & Disease***, 2019, 10:55

Wu H, et al. Ubiquitination is essential for avibirnavirus replication by supporting VP1 Polymerase activity. ***Journal of Virology***, 2019, 93(3): e01899-18.

Wu H, et al. SUMO1 Modification Facilitates Avibirnavirus Replication by Stabilizing Polymerase VP1. ***Journal of Virology***, 2019, JVI. 02227-18.

Mycoplasma Detection

→ Myco-Blue Mycoplasma Detector (#D101)

Features

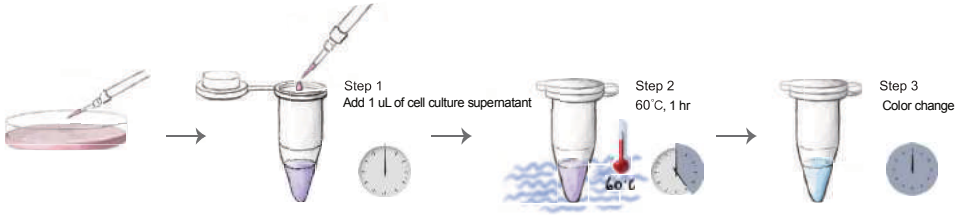
* Cell culture supernatant can be used directly for detection.
* Results are obtained after incubation at **60℃ for 1 hr** and can be determined by visual observation.
* Accuracy is higher than PCR method, and comparable to qPCR method.
* Suitable for detection of all kinds of mycoplasma that are commonly found in cell culture.

Validated Cell Lines

Validated cells and media serum include (but are not limited to):

* **Suspension cells**: CHO, NS0, 293F, mouse hybridoma, Sf9, BHK21, etc.;
* **Adherent cells**: Vero, MDCK, SP2/0, 293T, HepG2, HeLa, A549, MB-MDA231, L929, MEF, etc.;
* **Medium**: CD FortiCHO, CDM4, Expi 293 Medium, CD Hybridoma, Grace, DMEM, 1640, F12, etc.;
* **Serum**: fetal calf / calf serum; horse serum; Gibco KSR serum replacement, etc.

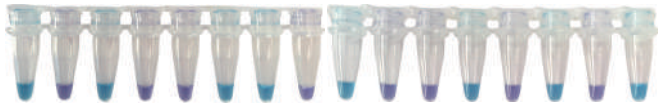
Workflow



Validated Data

qPCR results. *Positive is indicated by copy number (copies / μl supernatant); negative is indicated by "-".*

PCR results.



Myco-Blue results.

Randomly selected 16 cell cultures, and mycoplasma were detected by three methods.

In Vitro Transcription

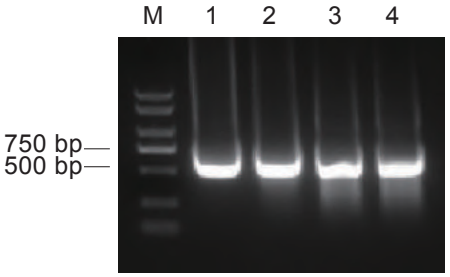
→ T7 RNAi Transcription Kit (#TR102)

Features

* **High yield**: yields up to **80 μg** of dsRNA in a single reaction.
* **Magnetic bead purification:** recovery efficiency up to 80%.
* Able to transcribe both **siRNA** (21 bp) and **dsRNA** (long fragment).

Validation Data

1. Excellent transcription efficiency.



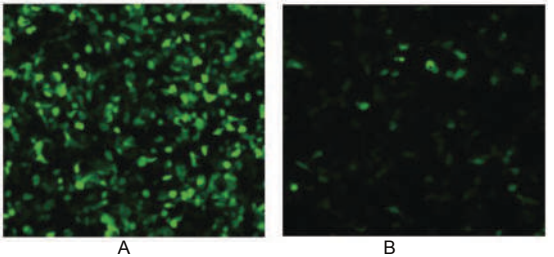
Agarose gel electrophoresis (2%) of 500 bp dsRNA.

***M**: DL2000 Plus DNA Maker.*

***1** and **3**: products before and after enzymatic hydrolysis of dsRNA, respectively;*

***2** and **4**: products before and after enzymatic hydrolysis of dsRNA, respectively.*

2. Knock-down of GFP expression by transcribed siRNA.



293T cells were co-transfected for 24 hrs with both GFP plasmid and negative control GFP siRNA (A) or positive GFP siRNA (B).

High-Fidelity PCR

Zhao Q, Wang M, Xu D, et al. Metabolic coupling of two small-molecule thiols programs the biosynthesis of lincomycin A[J]. *Nature*. 2015 Feb5;518(7537):115-9. **IF: 42.351**

Zhang B, Wang K B, Wang W, et al. Enzyme-catalysed [6+4] cycloadditions in the biosynthesis of natural products[J]. *Nature*. 2019 Apr;568(7750):122-126. **IF: 41.577**

Ma Z, Zhu L, Song T, et al. A paralogous decoy protects Phytophthora sojae apoplastic effector PsXEG1 from a host inhibitor[J]. *Science*. 2017 Feb 17;355(6326):710-714. **IF: 34.661**

Han X, Wang R, Zhou Y, et al. Mapping the MouseCell Atlas by Microwell-Seq[J]. Cell. 2018 May17;173(5):1307. **IF: 31.398**

Zhang B, Li J, Yang X, et al. Crystal Structures of Membrane Transporter MmpL3, an Anti-TB Drug Target[J]. *Cell*. 2019 Jan 24;176(3):636-648.e13. **IF: 31.398**

Wang YS, Zhang B, Zhu J, et al. Molecular Basis for the Final Oxidative Rearrangement Steps in Chartreusin Biosynthesis[J]. *J Am Chem Soc*. 2018 Aug 29;140(34):10909-10914. **IF: 14.357**

Cheng X, Ma X, Ding X, et al. Pacer Mediates the Function of Class III PI3K and HOPS Complexes in Autophagosome Maturation by Engaging Stx17[J]. *Mol Cell*. 2017 Mar 16;65(6):1029-1043.e5. **IF: 14.248**

Wu H, Yin QF, Luo Z, et al. Unusual Processing Generates SPA LncRNAs that Sequester Multiple RNA Binding Proteins[J]. *Mol Cell*. 2016 Nov 3;64(3):534-548. **IF: 13.958**

Tian Z, Sun P, Yan Y, et al. An enzymatic [4+2] cyclization cascade creates the pentacyclic core of pyrroindomycins[J]. *Nat Chem Biol*. 2015 Apr;11(4):259-65. **IF: 13.217**

Zhang M, Zhou C, Wei Y, et al. Human cleaving embryos enable robust homozygotic nucleotide substitutions by base editors[J]. *Genome Biol*. 2019 May 22;20(1):101. **IF: 13.214**

Wang M, Zhao Q, Zhang Q, et al. Differences in PLP-Dependent Cysteinyl Processing Lead to Diverse S-Functionalization of Lincosamide Antibiotics[J]. *J Am Chem Soc*. 2016 May 25;138(20):6348-51. **IF: 13.038**

Lv M, Ji X, Zhao J, et al. Characterization of a C3 Deoxygenation Pathway Reveals a Key Branch Point in Aminoglycoside Biosynthesis[J]. *J Am Chem Soc*. 2016 May 25;138(20):6427-35. **IF: 13**

Sun X, Ding Y, Zhan M, et al. Usp7 regulates Hippo pathway through deubiquitinating the transcriptional coactivator Yorkie[J]. *Nature Communications*. 2019 Jan 24;10(1):411. **IF: 12.353**

Conventional PCR

Zhang B, Wang K B, Wang W, et al. Enzyme-catalysed [6+4] cycloadditions in the biosynthesis of natural products[J]. *Nature*. 2019 Apr;568(7750):122-126. **IF: 41.577**

Zhang XO, Wang HB, Zhang Y, et al. Complementary sequence-mediated exon circularization[J]. *Cell*. 2014 Sep 25;159(1):134-147. **IF: 33.116**

Wang Y S, Zhang B, Zhu J, et al. Molecular Basis for the Final Oxidative Rearrangement Steps in Chartreusin Biosynthesis[J]. *J Am Chem Soc*. 2018 Aug 29;140(34):10909-10914. **IF: 14.357**

Sun H, Liu J, Zheng Y, et al. Distinct chemokine signaling regulates integrin ligand specificity to dictate tissue-specific lymphocyte homing[J]. *Dev Cell*. 2014 Jul 14;30(1):61-70. **IF: 12.86**

Yuan H, Zhang J, Cai Y, et al. GyrI-like proteins catalyze cyclopropanoid hydrolysis to confer Cellular protection[J]. *Nature Communications*. 2017 Nov 14;8(1):1485. **IF: 12.124**

Zhang X, Wang T T, Xu Q L, et al. Genome Mining and Comparative Biosynthesis of Meroterpenoids from Two Phylogenetically Distinct Fungi[J]. *Angew Chem Int Ed Engl*. 2018 Jul 2;57(27):8184-8188. **IF: 12.102**

Chen C, Zhai S, Zhang L, et al. Uhrf1 regulates germinal center B Cell expansion and affinity maturation to control viral infection[J]. *J Exp Med*. 2018 May 7;215(5):1437-1448. **IF: 11.991**

Bai D, Zhang J, Li T, et al. The ATPase hCINAP regulates 18S rRNA processing and is essential for embryogenesis and tumour growth[J]. *Nature Communications*. 2016 Aug 1;7:12310. **IF: 11.33**

Zhang X O, Dong R, Zhang Y, et al. Diverse alternative back-splicing and alternative splicing landscape of circular RNAs[J]. *Genome Res*. 2016 Sep;26(9):1277-87. **IF: 11.351**

Fast Cloning

Wu N, Ming X, et al. TBX6 null variants and a common hypomorphic allele in congenital scoliosis[J]. *N Engl J Med*. 2015 Jan 22;372(4):341-50. **IF: 54.42**

Ge J, Li W, et al. Architecture of the mammalian mechanosensitive Piezo1 channel[J]. *Nature*. 2015 Nov 5;527(7576):64-9. **IF: 42.351**

Li X, Wang Y, et al. Base editing with a Cpf1-cytidine deaminase fusion[J]. *Nat Biotechnol*. 2018 Apr 36(4):324-327. **IF: 41.667**

Jin S, Zong Y, et al. Cytosine, but not adenine, base editors induce genome-wide off-target mutations in rice[J]. *Science*. 2019 Apr 19;364(6437):292-295. **IF: 41.058**

Wang X, Li J, Wang Y, et al. Efficient base editing in methylated regions with a human APOBEC3A-Cas9 fusion[J]. *Nat Biotechnol*. 2018 Nov;36(10):946-949. **IF: 35.724**

Zong Y, Song Q, Li C, et al. Efficient C-to-T base editing in plants using a fusion of nCas9 and human APOBEC3A[J]. *Nat Biotechnol*. 2018 Oct 1. **IF: 35.724**

Li T, Yang X, et al. Domestication of wild tomato is accelerated by genome editing[J]. *Nat Biotechnol*. 2018 Oct 1. **IF: 35.724**

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