PCR Reagents
Real Time PCR Kits
PCR Kits
Related Kits
Enzymes

Genetix

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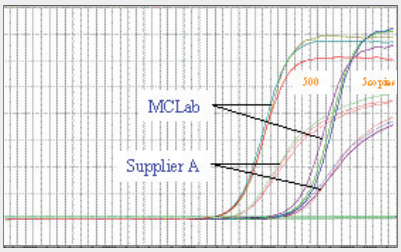
REAL TIME PCR KITS

2X HotSybr qPCR Kit

Description
This is a high performance real-time PCR reagent. It utilizes MCLAB's proprietary quantitative PCR technology.

Application
Sybr green dye based quantitative PCR: including DNA quantification, 2-step RT PCR, SNP analysis, etc.

Advantages
2x HotSybr PCR Reaction Mix products cut the total reaction time down to half.



- Normally the total reaction time is 4350 seconds: 95°C, 10 minutes => (95°C, 15 seconds => 60°C, 60 seconds) x 50
- For MCLAB's 2x HotSybr PCR Reaction Mix, the total reaction time is reduced to 2350 seconds: 95°C, 10 minutes => (95°C, 5 seconds => 60°C, 30 seconds) x 50

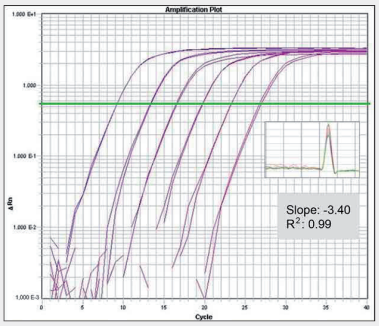


Figure: Amplification of human GAPDH gene target with 2X HotSybr Real-time PCR Kit. Amplification curves are shown for tenfold dilutions of 0.0002pM to 20pM of plasmid. Insets show the dissociation profile and the standard curve data.

Product Information

HSM400	Regular level of ROX, 200 rnx, 4x1.25ml
HSM400LR	Low level of ROX, 200 rnx, 4x1.25ml
HSM400RF	ROX Free, 200 rnx, 4x1.25ml

2X Taqman probe based HoTaq qPCR Kit

Description

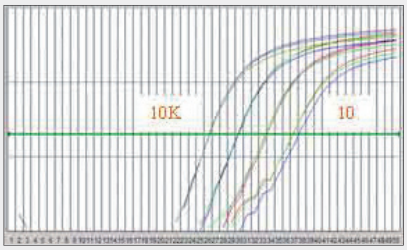
This is a high performance real-time PCR reagent. It utilizes MCLAB's proprietary quantitative PCR technology.

Application

Probe based quantitative PCR: including DNA quantification, 2-step RT PCR, SNP analysis, etc.

Advantages

2x HotSybr PCR Reaction Mix products cut the total reaction time down to half.



- This is the amplification of GPIIB gene (70% G+C) .
- 10 ~ 10K copies from 30pg human genomic DNA have been detected.

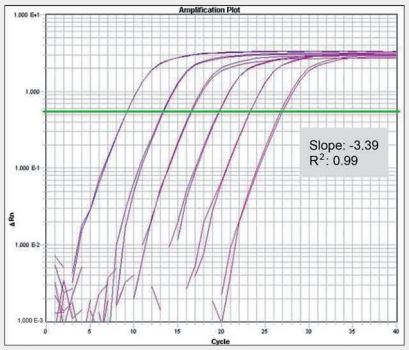


Figure: Amplification of human GAPDH gene target with 2X HoTaq Real-time PCR Kit. Amplification curves are shown for tenfold dilutions of 0.0002pM to 20pM of plasmid. Inset shows the standard curve data.

Product Information

HTP400	Regular level of ROX, for Real-time PCR Machines ABI 7000, 7300, 7700, 7900, 4x1.25ml
HTP400LR	Low level of ROX, for Real-time PCR Machines ABI 7500, Mx 3000P, Mx 3005P, 4x1.25ml
HTP400RF	ROX Free, for Real-time PCR Machines BioRad iCycler MiniOpticon, Opticon 2, Chromo4, iQ5; Roche LightCycler 480; MJ Research DNA Engine Opticon 2, Chromo4; Corbett Roto-gene 3000, 6000, 4x1.25ml

HoTaq Taqman probe One-step Real-time RT-PCR Kit

Description

RT-PCR is widely used for measuring gene expression in tissue samples or cell culture systems. Traditionally, it is performed in two separate reaction steps. First-strand cDNA is reverse-transcribed from total RNA or poly (A)+ RNA using a reverse transcriptase. Next, the cDNA is amplified by PCR using a DNA polymerase in another reaction.

MCLAB's HoTaq Taqman probe One-step Real-time RT-PCR Kit offers a unique system for performing probe based realtime RT-PCR in a single step within a single tube with optimized reaction condition, which utilizes our own proprietary engineered highly purified QuantumScript HD reverse transcriptase and hot-start Taq DNA Polymerase. No additional reagents or steps are required once the reaction is initiated. This novel kit allows you to quantitatively detect specific RNA targets with high sensitivity, unparalleled convenience and wide dynamic range.

The technique reduces the risk of cross-contamination and minimizes the use of reagents. This method is particularly useful for applications in which the expression of a small number of genes must be analyzed in many different total RNA samples, and robust amplifies high-abundance transcripts from crude total RNA preparations..

Application

- Gene Expression Analysis
- Genotyping
- Real-Time PCR

Advantages

One-step RT-PCR products are faster.

		MCLAB		Supplier A	
		Ct, Ave	Stdev n=4	Ct, Ave	Stdev n=4
Target 1		32.03	0.06	34.56	0.61
Target 2		33.43	0.42	35.52	0.13
Target 3		32.60	0.15	34.10	0.14
Target 4		31.82	0.31	34.27	0.42
Target 5		33.36	0.25	41.09	0.15
Target 6	Allele 1	32.76	0.52	38.17	0.13
	Allele 2	34.05	0.26	40.44	0.28
Target 7	Allele 1	33.45	0.19	41.04	0.32
	Allele 2	33.27	0.16	40.16	0.68
Target 8	Allele 1	33.47	0.46	48.04	N/A*
	Allele 2	36.00	0.69	N/A	N/A

*: 2 out 4 were not amplified

Product Information

HTRT-100	Regular level of Rox, 40 rxns
HTRT-200	Regular level of Rox, 200 rxns

miRNA cDNA Synthesis and qPCR Kit

Description

Small, non-coding miRNAs are widely present in eukaryotes. Many studies evidenced that miRNAs control many important physiological processes in cell development and differentiation. Therefore, the quantitative assaying of miRNA is important in both basic and applied research.

miRNA cDNA Synthesis Kit provides a universal first-strand cDNA synthesis system which combines optimized polyadenylation with reverse transcription reactions based on proprietary high pure and active enzymes. The robust kit is ideal for most reliable first strand synthesis and higher cDNA yields, with sensitivity and accurate quantitation from 10 pg to 1 µg of total RNA input. The universal first-strand cDNA synthesis allows for detection of mRNA species, including β-Actin and GapDH, from the same cDNA sample. The miRNA-specific amplification could be done with target-specific PCR forward primer during the subsequent PCR reaction. When compared to traditional hybridization-based detection methods, such as Northern blot analysis, the qRT-PCR method is faster, more specific, more sensitive and using less sample material.

Features

- Efficient reverse transcription of miRNAs into cDNA in a single step.
- Precise quantitative and accurate measurement of miRNA expression profiles with Universal qPCR Primer included in the Kit gives you the flexibility to order your qPCR detection reagents separately.
- Differentiation between mature and precursor miRNA.
- Profiling of small RNAs, miRNAs, or mRNAs from a single cDNA synthesis reaction.

Product Information

MCSQ-100	20 rxns
MCSQ-200	100 rxns

REAL TIME PCR KITS

MCNext™ SYBR® Fast qPCR Library Quantification Kit

Description

The MCNext™ SYBR® Fast qPCR Library Quantification Kit provides researchers with an accurate and sensitive method for quantifying NGS libraries.

Storage Condition: -20 °C

Features

- Simpler workflow – direct (MC kit) vs. indirect (KAPA kit) cluster density conversion
- Broader dynamic range of measurement – 7-log (MC kit) vs. 6-log (KAPA kit)
- Superior accuracy – Phi X library (MC kit) vs. single DNA fragment (KAPA kit) as standard
- Reliable – more consistent in quantification comparing with KAPA kit

Broader Dynamic Range For Library Quantification

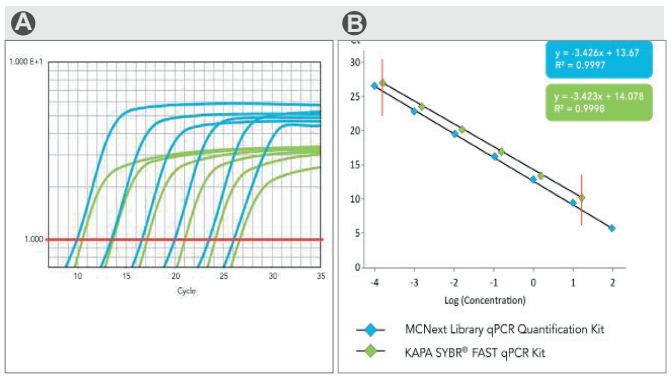


Figure 1. Comparison of amplification plot and standard curve of the Illumina PhiX library using MCNext SYBR Fast qPCR Kit (blue) versus KAPA Library Quantification Kit (green). A. Amplification plot of 10 x serial diluted PhiX library. B. 10-fold serial dilution of PhiX library standard curve. Higher fluorescence and 10x better sample quantification range in linear amplification plots confirm that MC kit achieves better efficiency and broader dynamic range.

More Consistent In Quantification

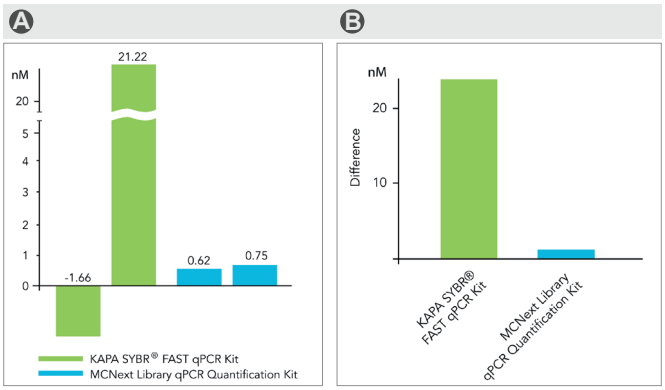


Figure 2. Comparison of library quantification consistency using MCNext SYBR Fast qPCR Kit (blue) versus KAPA Library Quantification Kit (green). A. Histograms represent quantification results subtracted by actual Illumina PhiX library concentration (10 nM). B. Standard deviation plot demonstrates superior consistency of MCNext SYBR Fast qPCR Kit (blue) to KAPA Library Quantification Kit (green).

Direct Cluster Density Conversion

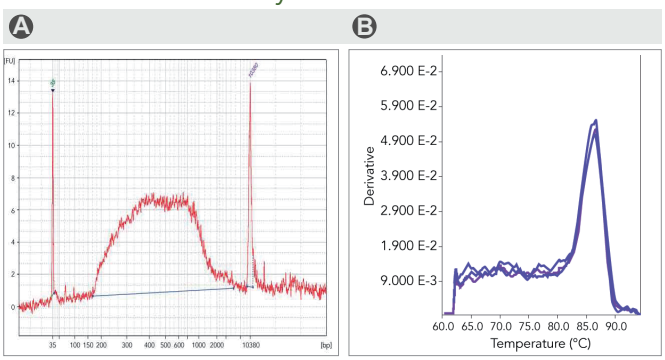


Figure 3. Analytical result of the Phi X Library Standards. A. Electropherogram from Agilent 2100 Bioanalyzer indicates library average size of 500bp sized aligned with the fragmentation design. B. Melting curve shows a single peak without nonspecific amplification products.

Product Information

IQPQ-UN	No ROX added, 500 reactions
IQPQ-RF	Regular ROX, 500 reactions
IQPQ-LR	Low ROX, 500 reactions

No Rox: BioRad iCycler MiniOpticon, Opticon 2, Chromo 4, iQ5; Roche LightCycler 480; MJ Research DNA Engine Opticon 2, Chromo 4; Corbett Rotogene 3000, 6000
Low Rox: ABI® 7500 qPCR Systems, ViiA™ 7, QuantStudio™ 12K Flex, Agilent Mx3000P™ and Mx4000™
Regular Rox: ABI® PRISM® 7000, 7700, 7900HT, ABI® 7300 qPCR Systems, GeneAmp® 5700, StepOne™, and the StepOnePlus™

2X HiFi HTP PCR Master Mix

Description

Superior specificity: High fidelity DNA polymerase plus modified hot start DNA polymerase with our proprietary enzyme system, minimizes primer-dimers and non-specific amplification
- Broad dynamic range: from 3.3 ng of genomic DNA (one copy of the target gene) or up to 100 ng in 25 µl rxn
- Broad range of targets: amplification of a wider range of targets from high GC templates, high AT templates and more
- High-throughput amplification: amplification of one pathway or gene family with ONE protocol, minimize secondary products, negative PCR results, and repeat experiments
- Convenience: optimized 2x mixes and protocols
- Superior sequencing results via direct sequencing from PCR products

Product Information

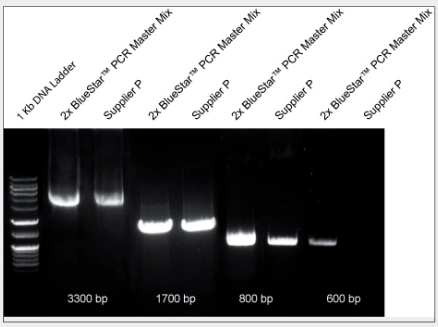
HTP-200	200 Reactions, 10µl/Reaction
HTP-500	500 Reactions, 10µl/Reaction
HTP-1000	1000 Reactions, 10µl/Reaction

2x BlueStar™ PCR Master Mix

Description

2x BlueStarTM PCR Master Mix contains all the necessary reagents and the gel loading dye. The PCR mix can be directly loaded to gel.

Figure



Product Information

BSPM-100	1 ml, 100 reactions (20 µl volume)
BSPM-200	10 ml, 1,000 reactions (20 µl volume)

PCR KITS

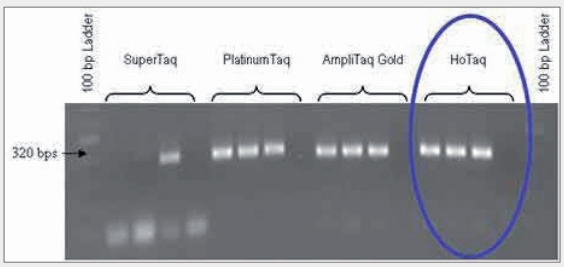
2X HotStart PCR Master Mix

Description
2x HotStart PCR Master Mix is a premixed 2x concentrated solution of HoTaq DNA Polymerase, reaction buffer, MgCl2 and dNTPs. The DNA template and primers are simply added for PCR reactions. The consistency and efficiency of routine PCR amplifications are optimized.

Application
- Regular PCR
- Genotyping
- Multiplex (multiple pairs of primers) PCR

Features
- Hot-start to keep background low
- Solves the primer-dimmer problem
- All handling can be done at room temperature
- Easy calculation
- Taq DNA Polymerase in ready-to-use mixture
- Low contamination risk

Figure



Here is the result of comparing MCLAB's HoTaq with some other leading brands.

Product Information

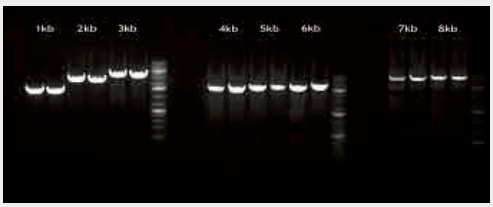
HMM-100	100 Reactions, 10µl/Reaction
HMM-300	500 Reactions, 10µl/Reaction

2X Universal Taq Master Mix

Description
2x Universal Taq Master Mix combines high-quality MCLAB recombinant Taq DNA Polymerase, a recombinant hot start protein, and MCLAB Ultrapure nucleotides in a proprietary reaction buffer. This ready-to-use mix provides robust and reliable performance for demanding PCR experiments in which high specificity and high sensitivity are desired. Since the mix is pre-formulated, experimental variability is significantly reduced. It can be used for PCR amplification up to 8 kb .

Application
- High-specificity PCR amplification
- High-sensitivity PCR amplification
- TA cloning
- High throughput PCR

Figure



Product Information

UTM-100	100 Reactions, 25µl/Reaction
UTM-500	500 Reactions, 25µl/Reaction

I-5™ 2X High-Fidelity Master Mix

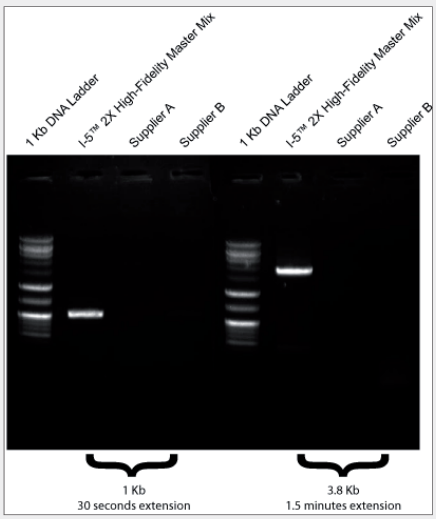
Description

I-5 High-Fidelity DNA Polymerases is an ultra-high fidelity and high processivity enzyme. It produces the most accurate copies of DNA, and performs at an ultra-high rate. I-5 is perfect for applications like cloning in vitro amplified material for protein expression, SNP analysis by sequencing, and high-specificity PCR.

Application

- High-specificity PCR amplification
- High-Throughput PCR
- Various Cloning technologies
- Difficult Amplification

Figure



Product Information

I5HM-100	100 reactions, 50 µl/reaction
I5HM-200	500 reactions, 50 µl/reaction

RELATED KITS

First Strand cDNA Synthesis Kit

Description

First Strand cDNA Synthesis Kit can be used to synthesize first strand cDNA by reverse transcription (RT) at higher temperatures than the wild type M-MuLV and to reach higher cDNA yields for difficult RNA transcription, which is based on MCLAB QuantumScript HD Reverse Transcriptase, a unique mutation that increases thermal stability and reduces RNase H activity.

Product Information

FSCS-100	50 reactions
FSCS-200	250 reactions

2X Ori-Master Plasmid Amplification Mix

Description

The 2X Ori-Master Plasmid Amplification Mix is a premixed ready-to-use solution containing a high-fidelity DNA polymerase, ori specific primers, dNTPs, and $MgCl_2$. The Master Mix can produce linear copies of bacterial plasmids from a single colony. The reaction mixture and conditions are optimized regardless of the plasmid copy number. Amplified products can be directly sequenced without the need for purification.

Application

- Bacterial sequencing
- Colony PCR
- Bacterial screening

Features

- Fast reaction within 2 hrs
- Easy to use
- Long amplification fragment
- High throughput capable
- High fidelity

Product Information

OMM-100	1 ml for 80 rxn

Choo-Choo Cloning™ Kits

Description

Choo-Choo Cloning™ Kits are highly efficient directional PCR cloning kits for rapid, ligase- and restriction enzyme-independent cloning of PCR products. It allows you to clone any PCR fragment into any linearized vector at any location. By a simple incubation on ice, the end of a PCR-generated DNA fragment can precisely fuse to another DNA (vector) end with 6 bp (or more) of overlap. The system is very robust. Up to 8 PCR-generated DNA fragments can be assembled and cloned into one piece (up to 10 kb in one step). The system is highly efficient, with 98-100% positive clones.

Function

The function of Choo-Choo Cloning™ Kitsdepends on our proprietary enzyme systems. There is no need for restriction enzyme digestion, ligation, or blunt-end polishing. You may limit any extra bases in the final construct. The linearized vector can be generated by PCR or restriction enzyme digestion. The PCR fragments can be generated by Taq DNA polymerase or other high fidelity DNA polymerase. The addition of A by Taq DNA polymerase is not required and has no effect on cloning efficiency. If the PCR product is amplified from plasmid template, then it needs to be gel-purified to reduce the background. In addition to PCR cloning, Choo-Choo Cloning™ Kits also have the following functions: adaptor, linker and tag addition before and after the inserts, and for gene synthesis.

Features

- Clone any insert into any location within any vector you choose
- No restriction digestion, phosphatase treatment, or ligation required
- Multiple fragments (up to 8 pieces)
- Broad PCR size (up to 10 kb)
- Final constructs are seamless with no extra or unwanted base pairs
- Simple 45 minute single-tube reaction on ice protocol
- High Efficiency with >=98% positive clones
- Multiple functions: compatible for adaptor, linker and tag addition before or after the inserts; compatible for gene synthesis
- High throughput application

Product Information

CCK-10	10 rxns with Choo-Choo Blue Chemical Competent E. coli Cells (50 µl x 10 tubes)
CCK-20	20 rxns with Choo-Choo Blue Chemical Competent E. coli Cells (50 µl x 20 tubes)
CCK-100	100 rxns with Choo-Choo Blue Chemical Competent E. coli Cells (50 µl x 100 tubes)
CCK-096	96 rxns with Choo-Choo Blue Chemical Competent E. coli Cells (50 µl x 96 well)
CCK-384	384 rxns with Choo-Choo Blue Chemical Competent E. coli Cells (8 x 2.5ml)

5X all-in-one Reverse Transcription kit

Description

MCLAB All in one 5X Reverse Transcription Mix Kit is optimized to synthesize first strand cDNA for RT-PCR and RT-qPCR. MCLAB QuantumScript HD Reverse Transcriptase is a new engineered version with a unique mutation that increased sensitivity, improved specificity, maximum thermal stability and reduces RNase H activity. The optimal fist-strand cDNA synthesis temperature for this enzyme is 50°C. The higher temperatures reverse transcription reaction improves cDNA yields for difficult RNA transcription. This Pre mixed 5X concentrated solution included all necessary components for first-strand synthesis. With mixture of 5X buffer, dNTPs, MgCl2, DTT, primers (optimized mixture oligo (dT) and random primers), RNase inhibitors, QuantumScript HD Reverse Transcriptase, It will simplify your first strand cDNA synthesis process.

Features

- Easy-to-use pre-mixed package
- High fidelity, yield and sensitivity
- Broader linear range
- Complete cDNA synthesis guaranteed
- Maximum sample volume available
- Robust and high throughput
- Work with difficult sequences

Applications

RNA Reverse transcription

Figure

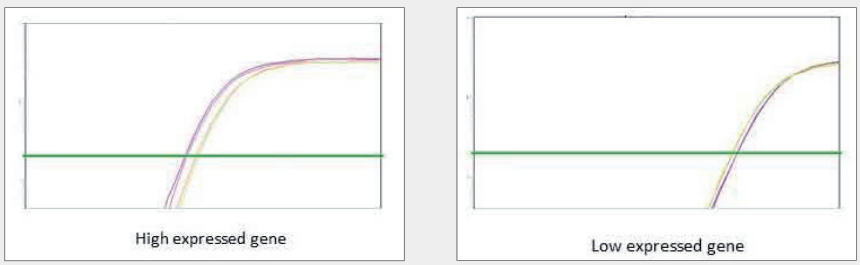


Figure 1. cDNA was synthesized in 20 µl for 30 minutes from 100 ng total RNA with different 5x All in one master mix. 1 ul of cDNA was used for qPCR, The qPCR was performed in MClab 2x HotSybr qPCR system.

MCLAB 5x all-in-one RT kit
Supplier Q

Product Information

5AIO-100	25 rxn/100 µl
5AIO-200	100 rxn/400 µl

Ab cloning 5′ RACE kit

Description

The Ab cloning RACE kit provides a novel method for performing both 5′ and 3 rapid amplification of cDNA ends (RACE) with optimized primers for cloning both of heavy and light chain of human and mouse antibodies. MCLAB SmartRT reverse transcriptase is an engineered MMLV RT that improves the enzyme thermostability, reduced RNase H activity and cDNA synthesis ability. The enzyme also has the terminal transferase activity. The tailing activity (terminal transferase activity) of SmartRT reverse transcriptase allow you to synthesize complete cDNA by SMART (Switching Mechanism At 5′ end of RNA Transcript) cDNA synthesis technology. With 3-5 extra nuclear acids added to the 3′ end of the first-strand cDNA, 5SMART universal oligo contains a terminal complementation to nuclear acids at 3′ end of the first-strand cDNA can be annealing to first-strand cDNA tail and serves as an extended template for RT. The switch of template from mRNA to 5SMART universal oligo produces a complete cDNA copy of transcript RNA with 5SMART universal oligo at the end. The cDNA transcript from smarter RT can be used for directly in 5 and 3 race with MCLAB I-5 2X High-Fidelity Master Mix. Our 5/3 Race kit is optimized for antibody cloning. It also can be used for any gene you are interested in.

Feature

- Specific full length cDNA enrichment technique
- Optimized primer set for full length antibody sequencing
- Simplified protocol without 5 end adaptor-ligation step

Applications

Antibody full length sequencing

Figure

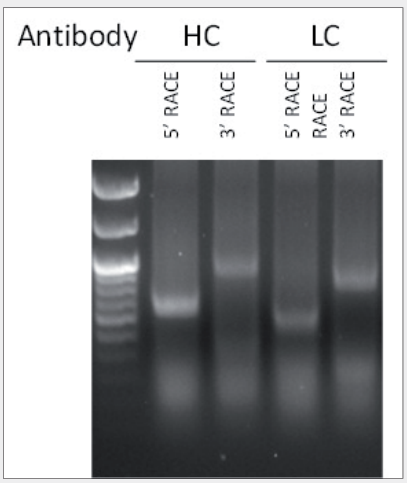


Figure 1.The RACE ready cDNA was synthesized from 1ug of total RNA from hybridoma cells using the Ab cloning RACE kit. 4 ul of cDNA were used for 5′ and 3′ RACE PCR. The gel image shows the amplified antibody heavy chain and light chain cDNA.

Product Information

ABC5-100	10 rxn
ABC5-200	20 rxn

ENZYMES

Pfu DNA Polymerase

Description

Pfu DNA Polymerase is a highly thermostable DNA polymerase from the hyperthermophilic archaeum Pyrococcus furiosus. The enzyme catalyzes the template-dependent polymerization of nucleotides into duplex DNA in the 5'->3' direction. Pfu DNA Polymerase also exhibits 3'->5' exonuclease (proofreading) activity, that enables the polymerase to correct nucleotide incorporation errors. It has no 5'->3' exonuclease activity. The main difference between Pfu and alternative enzymes is Pfu's superior thermostability and 'proofreading' properties. Unlike Taq DNA polymerase, Pfu DNA polymerase also possesses 3'->5' exonuclease proofreading activity, resulting in PCR fragments with fewer errors than Taq-generated PCR inserts. Pfu DNA polymerase is efficient for techniques that require high-fidelity DNA synthesis, but can also be used in conjunction with Taq polymerase to obtain the fidelity of Pfu with the speed of Taq polymerase activity.

Application

- High-fidelity PCR and primer-extension reactions
- Generation of PCR products for cloning and expression
- PCR cloning and blunt-end amplification product generation
- RT-PCR for cDNA cloning and expression
- Site-directed mutagenesis
- Blunt-end PCR cloning

Product Information

AD-200	500 Units
AD-205	1,000 Units
AD-210	2,500 Units

Phi29 DNA Polymerase

Description

Phi29 DNA Polymerase is responsible for the replication of the Bacillus Subtilis phage phi29. The enzyme is a highly processive DNA polymerase (up to 70,000 base insertions per binding event) with a powerful strand displacement activity and a 3'-> 5' proofreading exonuclease function.

Application

- Catalyzes the removal of 5'-mononucleotides from duplex DNA
- Replication requiring a high degree of strand displacement and/or processive synthesis
- High fidelity replication at moderate temperatures

Product Information

PP-100	1,000 units
PP-200	5,000 units

HoTaq DNA Polymerase (hot start)

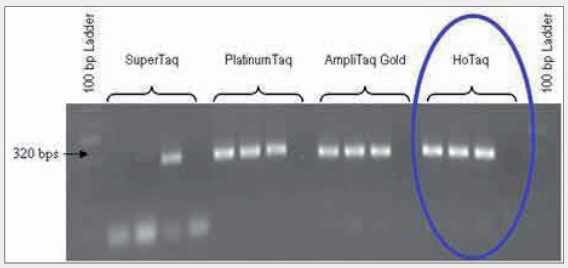
Description

HoTaq DNA Polymerase is hot-start Taq DNA Polymerase, which is a modified form of Taq DNA Polymerase. HoTaq DNA Polymerase is provided in an inactive state and has minimum enzymatic activity at ambient temperatures. It will become active after 10 minutes heating at 95ºC. This prevents the formation of misprimed products during reaction setup and the first denaturation step, leading to high PCR specificity. It is suitable for diagnostic reaction without the miner band. The enzyme is a highly processive 5'-> 3' DNA polymerase that lacks 3'-> 5' exonuclease activity. Each lot of HoTaq DNA polymerase is tested for PCR amplification.

Application

- Amplification of DNA
- Sequencing ssDNA and dsDNA
- Site-directed mutagenesis

Figure



Here is the result of comparing MCLAB's HoTaq with some other leading brands.

Product Information

HT-200	500 units
HT-205	2,500 units
HT-210	5,000 units

RNAse Inhibitor

Description

RNAse Inhibitor is an acidic, 52 kDa protein that is a potent, non-competitive inhibitor of pancreatic-type ribonucleases such as RNase A, RNase B, and RNase C. The enzyme is provided as a fusion of the porcine RNAse Inhibitor gene with a proprietary, 22.5 kDa protein tag.

Application

Inhibits ribonucleases (RNases) A, B and C

Figure

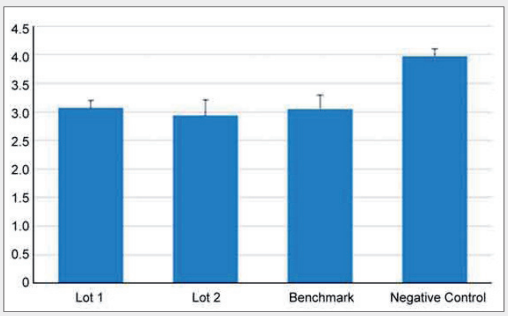


Figure 1. RNase Inhibitor Activity test by SpectraMax M5 system. Comparing to benchmark's and paralleled negative control, results show MCLAB's RNAse Inhibitor are functionally equivalent with benchmark's product.

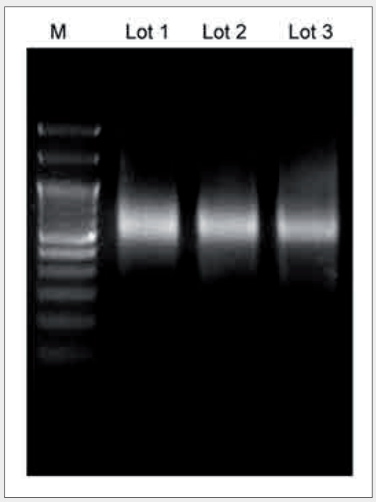


Figure 2. RNAse Inhibitor functional test.
Gel electrophoresis after RT-PCR shows MCLAB's RNAse Inhibitor is functionally equivalent with benchmark's product.

Product Information

RNIN-100	20,000 units
RNIN-200	40,000 units
RNIN-300	250,000 units

ENZYMES

Taq DNA Polymerase (regular)

Description

Taq DNA Polymerase (regular) is a thermostable enzyme with a highly processive 5'->3' polymerase activity and 5'->3' exonuclease activity. The enzyme is purified from E.coli and consists of a single polypeptide with a molecular weight of 94 kDa. Taq DNA polymerase synthesizes DNA from single-stranded templates in the presence of dNTPs and a primer.

Application

- PCR (ordinary and high-throughput)
- Primer Extension
- Microarray Analysis
- Denaturing high performance liquid chromatography (DHPLC)

Product Information

TR-100	1,250 units
TR-200	5,000 units

Taq-Klenow

Description

Taq-Klenow is modified from full length Taq-Klenow by truncating its N-terminus, with a molecular weight of 61kDa. Compared with regular Taq-Klenow, this truncated version is deficient in 5'->3' exonuclease activity, but is more thermostable and has higher fidelity in PCR amplification.

Application

- PCR (ordinary and high-throughput)
- Primer Extension
- Microarray Analysis
- Denaturing high performance liquid chromatography (DHPLC)

Product Information

TT-100	1,250 units
TT-200	5,000 units
RNIN-300	250,000 units

QuantumScript™ HD Reverse Transcriptase

Description

QuantumScript™ HD Reverse Transcriptase is a new engineered version based on QuantumScript™ Reverse Transcriptase with increased sensitivity, improved specificity and maximum thermal stability. QuantumScript™ HD Reverse Transcriptase has been engineered to have longer half life at 50°C which enables its ability to process longer RNA with more complicated secondary structure. Enhanced thermo stability of this enzyme is obtained through re-engineered RNA-based DNA Polymerase domain and the fusion of a novel RNA-interacting surface domain at the RNase H domain site. The enzyme is purified to near homogeneity to ensure high thermal stability, high specificity, high fidelity, high yield and more full length cDNA synthesis that the premium reverse transcriptase provides. The optimal fist-strand cDNA synthesis temperature for this enzyme is 50°C, and it has a broad working temperature range from 37° C to 55° C, with cDNA product size from 100 bp to 12 Kb.

Product Information

SSIII-50	2,000U, 200 U/µl
SSIII-100	10,000U, 200 U/µl
SSIII-200	50,000U, 200 U/µl
SSIII-300	100,000U, 200 U/µl

QuantumScript™ Reverse Transcriptase

Description

QuantumScript™ Reverse Transcriptase is a new engineered version of M-MLV reverse transcriptase with minimum RNase H activity and enhaced thermal stability. The enzyme is purified to near homogeneity to ensure high performance. The optimal fist-strand cDNA synthesis temperature for this enzyme is 42°C, with cDNA product size from 100 bp to 7 Kb.

Product Information

SSII-25	2,000U, 200 U/µl
SSII-50	10,000U, 200 U/µl
SSII-100	50,000U, 200 U/µl
SSII-200	200,000U, 200 U/µl

SmartRT™ Reverse Transcriptase

Description

SmartRT Reverse Transcriptase is an engineered MMLV RT that improves the enzyme thermostability, reduced RNase H activity and cDNA synthesis ability. The enzyme also has the terminal transferase activity where it adds a few extra nucleotides to the end of the synthesized cDNA. With 3 modified oligo dT primer and 5SMART universal oligo contains a terminal complementation to nuclear acids at 3' end of the first-strand cDNA together, the SmartRT reverse transcriptase will produce RACE ready full length cDNA.

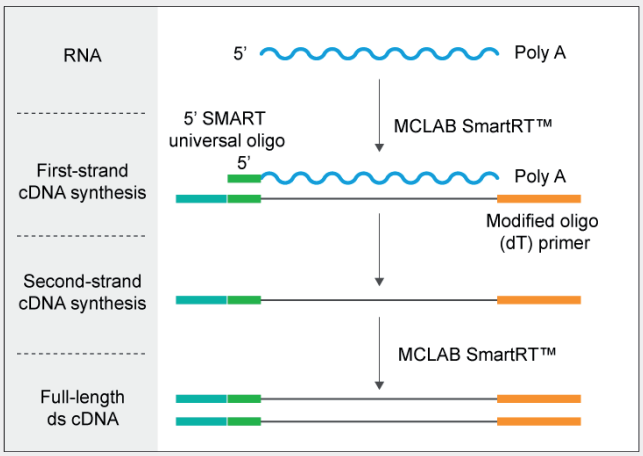
Features

Our reverse transcriptase is one of transcriptase that has the highest thermostability with terminal transferase activity.

Applications

Reverse transcription and RACE ready full length cDNA synthesis

Figure



Smart cDNA synthesis compared to conventional cDNA synthesis. Unlike conventional cDNA synthesis methods which involve a multiple enzyme/ multiple step procedure, the Smart cDNA synthesis protocol is performed by on reverse transcription reaction, in a single tube, with no adaptor ligation or intervening purification steps. Following PCR amplification, Smart cDNA is immediately available for a variety of downstream applications.

Product Information

SMRT-100	4000u(40 rxn)
SMRT-200	10000u(100 rxn)
SMRT-300	40000u(400 rxn)

ENZYMES

I-5™ Hotstart DNA Polymerase

Description

I-5 Hi-Fi DNA Hotstart polymerase is an ultra-fast and high-fidelity DNA polymerase. It provide robust amplification of from different templates including plasmids, BACS, genomic DNA, and lambda DNA. It allows for amplification of up to 8kb with human genomic DNA and up to 21kb with lambda DNA. Its has an extension speed of 1 kb / 10-15 seconds depending on template type. This allows the user to save time by speeding up PCR reactions and provides higher fidelity than Taq or PFU. The enzyme is contains a Hotstart mechanism that inactivates the enzyume until it is heated. This allows the user to setup the PCR reactions at room temperature without worrying about primer dimers or non-specific preamplification.

Feature

- Fast 4X faster than hot start Taq
- Robust high inhibitor tolerance
- High yields high efficiency
- Long PCR products

Applications

- Hot Start PCR
- Routine PCR
- Non-high fidelity PCR
- Fast PCR
- High throughput PCR
- Genotyping

Product Information

I5HD-100	50u/200 rxn
I5HD-200	50u/1000 rxn

I-5™ Hi-Fi DNA Polymerase

Description

I-5 Hi-Fi DNA polymerase is an ultra-fast and high-fidelity DNA polymerase. It provide robust amplification of from different templates including plasmids, BACS, genomic DNA, and lambda DNA. It allows for amplification of up to 8kb with human genomic DNA and up to 21kb with lambda DNA. Its has an extension speed of 1 kb / 10-15 seconds depending on template type. This allows the user to save time by speeding up PCR reactions and provides higher fidelity than Taq or PFU.

Feature

- Robust maximal success and minimal optimization needed
- Fidelity 50X greater than Taq
- High Speed 10X faster than Pfu
- High Yield
- Versatile Best for long or difficult templates

Applications

- PCR
- Cloning
- Long or Difficult Amplification
- High-Throughput PCR

Product Information

PDP-100	100u, 2u/µl
PDP-200	500u, 2u/µl

Figure

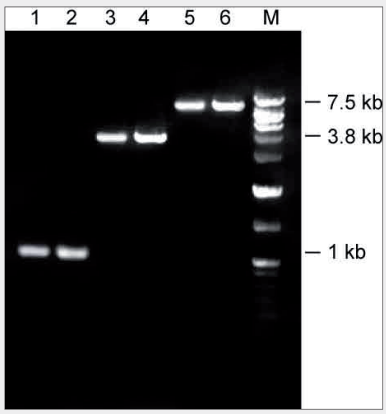


Figure 1. Amplification of varying sizes of Human Genomic DNA gene targets using I5 DNA polymerase. All amplifications were carried out for 28 cycles using a 2-step PCR protocol. Lanes 1 and 2: 1020 bp fragment of human beta-globin gene. Total PCR protocol time was 30 minutes. Lanes 3 and 4: 3.8 kb fragment of human beta-globin gene. Total PCR protocol time was 1 hour 9 minutes. Lanes 5 and 6: 7.5kb fragment of human beta-globin gene. Total PCR protocol time was 1 hour 36 minutes.

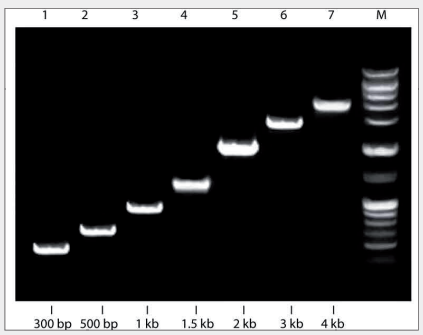


Figure 2: Amplification of varying sizes of plasmid inserts using I5 DNA polymerase. All amplifications were carried out for 28 cycles using a 3-step PCR protocol. Extension times were carried out at 10 seconds/kb.