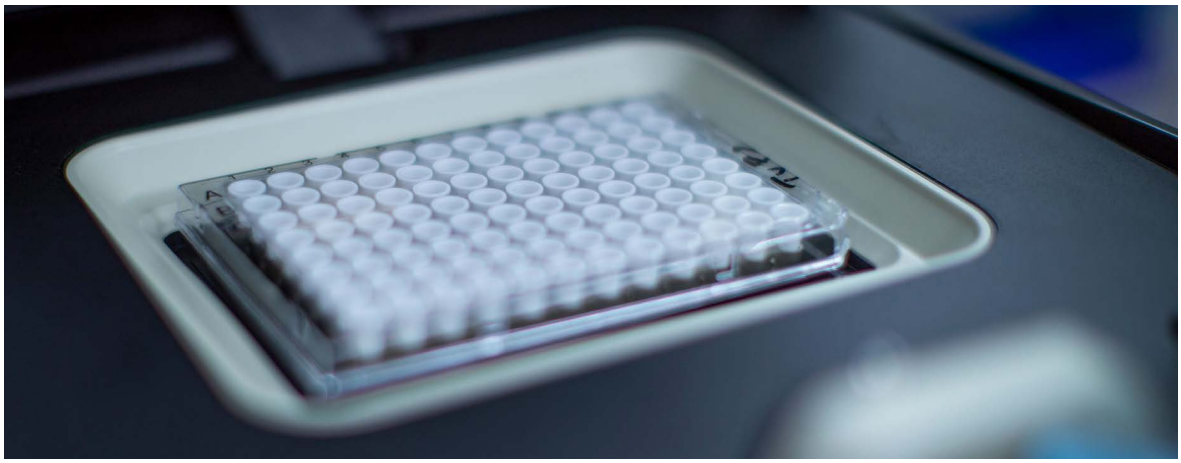
PCR reagents to simplify your research and power your diagnostics

PCRBIOSYSTEMS

simplifying research



Supporting PCR Success Around the World

PCR Biosystems is a specialist manufacturer of reagents for PCR and related technologies, supplying researchers, assay developers, and diagnostic manufacturers across the globe.

Our commitment to PCR, alongside related molecular techniques, enables us to provide high-quality, reliable solutions that meet the evolving needs of molecular biology and applied science.

Designed to support a wide variety of applications – from real-time and endpoint PCR to high-fidelity and long-range amplification, as well as PCR direct from crude samples – our product range combines carefully optimised enzyme performance, buffer chemistry, and hot start technology to help scientists achieve consistent results in both routine and complex workflows.

We work closely with our customers and partners to understand technical challenges and respond with practical, science-led innovation. Our ongoing investment in R&D allows us to improve existing tools and explore new directions in PCR technology.

All PCR Biosystems products are developed and manufactured under certified ISO 9001:2015 and ISO 13485:2016 quality systems. With proven performance in comparative studies, our reagents offer the reliability researchers need to generate accurate, high-quality results, time after time.

QUALITY SYSTEM CERTIFICATION
DNV
ISO 9001
ISO 13485

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Real-Time PCR

Sensitive Specific Fast

qPCR Tools & Resources

Get the most from your qPCR experiments with our handy guides, calculators and tools.

qPCR Technical Guide

Unlock deeper insights into real-time PCR with our qPCR Technical Guide - a detailed resource packed with expert knowledge to support every stage of your workflow. From understanding fundamental principles to optimising assay design and interpreting complex data, this guide is your go-to reference for mastering qPCR.

MORE INFO

qPCR Selection Tool

Take the guesswork out of reagent selection with our qPCR Selection Tool - designed to help you choose the correct ROX variant for your specific qPCR instrument. Simply select your instrument model, and the tool recommends the appropriate qPCR mixes to ensure optimal performance and compatibility.

MORE INFO

qPCR Testing Guide

Get started with confidence using our qPCR Testing Guide - a clear, step-by-step resource designed for users evaluating our products for the first time. This comprehensive guide walks you through the entire testing process, from experimental setup and reagent preparation to cycling conditions and data interpretation. With helpful tips and troubleshooting advice along the way, it ensures a smooth and successful introduction to our qPCR solutions.

MORE INFO

Tm Calculator

Ensure precise primer design with our Tm Calculator - a quick and reliable tool for determining the melting temperature (Tm) of your oligonucleotides when using our products. Whether you're optimising qPCR assays or designing new primers, our calculator helps you achieve accurate annealing temperatures for maximum efficiency and specificity. Simply input your sequence, and the tool delivers instant Tm results based on established thermodynamic parameters.

MORE INFO

qPCR Troubleshooting Tool

Easily resolve your qPCR challenges with our interactive qPCR Troubleshooting Tool - your go-to resource for fast, reliable problem-solving. Whether you're facing issues with amplification, unexpected Cq values, or abnormal melt curves, this intuitive tool guides you step by step through potential causes and targeted solutions.

MORE INFO

qPCRBIO SyGreen® Mixes: Unlock precision with versatile dye-based qPCR reagents

qPCRBIO SyGreen® Mixes and 1-Step Kits combine a proprietary non-inhibiting DNA intercalating dye with the latest advances in polymerase technology and buffer chemistry to give you fast, highly sensitive and reproducible qPCR and RT-qPCR.

Products in the qPCRBIO SyGreen® range can be used to reliably quantify any DNA or RNA template including genomic DNA, cDNA, viral, and bacterial sequences, and are able to detect extremely low copy number targets with the highest efficiency.

All reagents in this range feature antibody-mediated hot start technology that reduces the formation of primer dimers and non-specific products, leads to improved reaction sensitivity and specificity, and means there is little to no optimisation required.

Features

- High processivity for ultra-fast amplification
- Hot start technology for strict specificity
- Extreme sensitivity
- Buffer composition tailored for stringent primer annealing
- Ultra-fast cycling - 2s/2s denaturation/ annealing-extension
- Suitability for GC-rich templates
- Mixes for both qPCR and 1-step RT-qPCR

Applications

- Absolute quantification
- Relative gene expression analysis
- High-throughput PCR from genomic DNA, cDNA, and RNA templates
- Detection of extremely low copy number targets
- Crude sample PCR

What our customers say...

> Using PCR Biosystems' qPCRBIO SyGreen Mix has improved our detection of low copy number targets while running faster cycling conditions. In comparison to our old SYBRGreen, 10 µL reaction mixes of qPCRBIO SyGreen Mix can be used with confidence, effectively halving the cost of qPCR.

Researcher at University College London

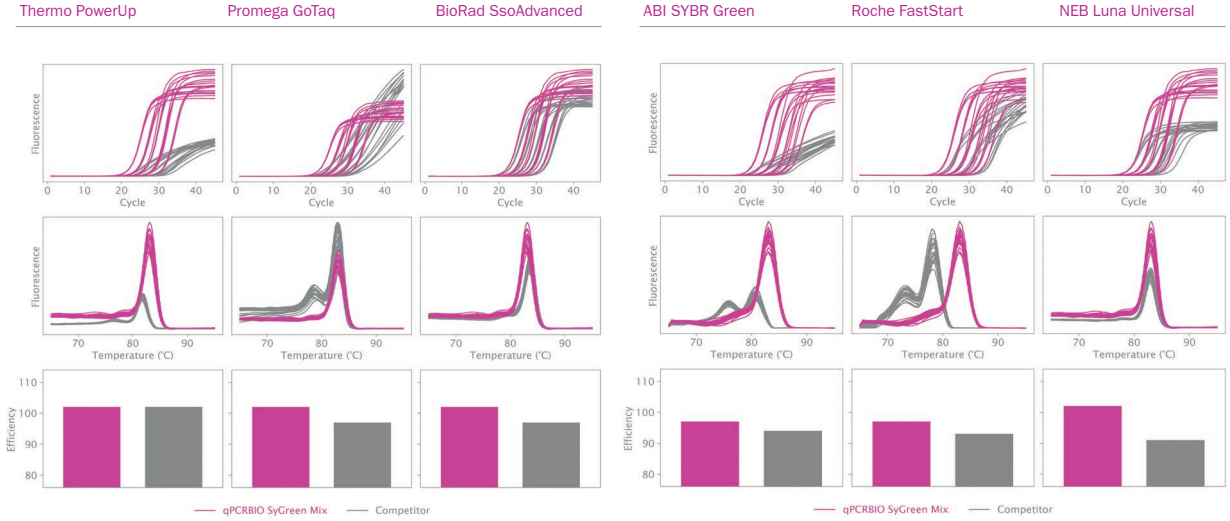
UNG mixes coming soon!

qPCRBIO SyGreen® Mix

MORE INFO

A reliable 2x qPCR mix containing a robust Taq polymerase with antibody-mediated hot start, a non-inhibitory DNA intercalating dye, dNTPs, magnesium, and reaction buffer formulated for all passive-reference dye requirements.

Reactions (20 µL)	Presentation	Catalogue No.
qPCRBIO SyGreen Mix Lo-ROX		
100	1x1 mL	PB20.11-01
500	5x1 mL	PB20.11-05
500	1x5 mL	PB20.11-06
2000	20x1 mL	PB20.11-20
5000	1x50 mL bottle	PB20.11-50
5000	50x1 mL in pouch	PB20.11-51
qPCRBIO SyGreen Mix Hi-ROX		
100	1x1 mL	PB20.12-01
500	5x1 mL	PB20.12-05
500	1x5 mL	PB20.12-06
2000	20x1 mL	PB20.12-20
5000	1x50 mL bottle	PB20.12-50
5000	50x1 mL in pouch	PB20.12-51
qPCRBIO SyGreen Mix with Fluorescein		
100	1x1 mL	PB20.13-01
500	5x1 mL	PB20.13-05
500	1x5 mL	PB20.13-06
2000	20x1 mL	PB20.13-20
qPCRBIO SyGreen Mix Separate-ROX		
100	[1x1 mL mix] & [1x200 µL ROX]	PB20.14-01
500	[5x1 mL mix] & [1x200 µL ROX]	PB20.14-05
500	[1x5 mL mix] & [1x200 µL ROX]	PB20.14-06
2000	[20x1 mL mix] & [4x200 µL ROX]	PB20.14-20
5000	[1x50 mL bottle mix] & [2x520 µL ROX]	PB20.14-50
5000	[50x1 mL mix] & [2x520 µL ROX] in pouch	PB20.14-51



Amplification of Beta-2 Microglobulin using qPCRBIO SyGreen® Mix (purple curves)

Amplification curves are shown in the top panel, melt curves are shown in the middle panel and the efficiencies of amplification are shown in the bottom panel. A direct, on-plate comparison was performed with the competitors identified in the top panel (grey curves). 5 serial dilutions of mouse cDNA template were used in a total reaction volume of 10 µL. Cycling conditions were those recommended by each of the competitors. qPCRBIO SyGreen® Mix displays earlier Ct, cleaner melt peaks and better efficiency compared to each of the competitor mixes.

qPCRBIO SyGreen® Blue Mix

MORE INFO

Easy-to-see 2x qPCR mix packed with all the components of qPCRBIO SyGreen® Mix.
Contains an inert blue dye that enables mastermix visualisation, reduces handling errors, and helps in high-throughput and manual plate setup.

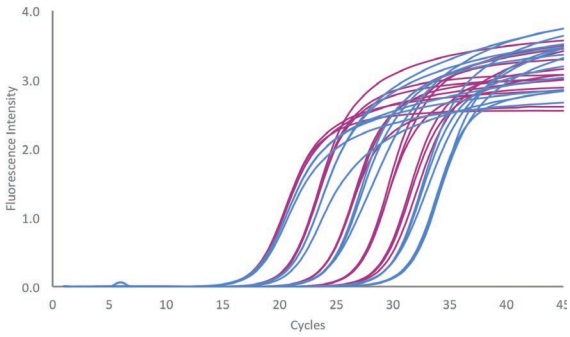
Reactions (20 µL)	Presentation	Catalogue No.
qPCRBIO SyGreen Blue Mix Lo-ROX		
100	1x1 mL	PB20.15-01
500	5x1 mL	PB20.15-05
500	1x5 mL	PB20.15-06
2000	20x1 mL	PB20.15-20
5000	1x50 mL bottle	PB20.15-50
5000	50x1 mL in pouch	PB20.15-51
qPCRBIO SyGreen Blue Mix Hi-ROX		
100	1x1 mL	PB20.16-01
500	5x1 mL	PB20.16-05
500	1x5 mL	PB20.16-06
2000	20x1 mL	PB20.16-20
5000	1x50 mL bottle	PB20.16-50
5000	50x1 mL in pouch	PB20.16-51
qPCRBIO SyGreen Blue Mix Separate-ROX		
100	[1x1 mL mix] & [1x200 µL ROX]	PB20.17-01
500	[5x1 mL mix] & [1x200 µL ROX]	PB20.17-05
500	[1x5 mL mix] & [1x200 µL ROX]	PB20.17-06
2000	[20x1 mL mix] & [4x200 µL ROX]	PB20.17-20
5000	[1x50 mL bottle mix] & [2x520 µL ROX]	PB20.17-50
5000	[50x1 mL mix] & [2x520 µL ROX] in pouch	PB20.17-51

qPCRBIO SyGreen® 1-Step Kits

MORE INFO

If your template is RNA, qPCRBIO SyGreen® 1-Step Kits offer fast, highly specific and ultra-sensitive cDNA synthesis and qPCR in a single tube. The kit includes a separate 20x modified MMLV reverse transcriptase that's thermostable between 45-55 °C. Choose qPCRBIO SyGreen® 1-Step Go for early Cts and higher template concentrations (between 0.1 ng – 100 ng). Alternatively, choose qPCRBIO SyGreen® 1-Step Detect for greater sensitivity and if your sample input is between 10 pg – 10 ng.

Reactions (20 µL)	Presentation	Catalogue No.
qPCRBIO SyGreen 1-Step Detect Lo-ROX		
100	[1x1 mL mix] & [1x200 µL RTase]	PB25.11-01
300	[3x1 mL mix] & [3x200 µL RTase]	PB25.11-03
1200	[12x1 mL mix] & [12x200 µL RTase]	PB25.11-12
qPCRBIO SyGreen 1-Step Detect Hi-ROX		
100	[1x1 mL mix] & [1x200 µL RTase]	PB25.12-01
300	[3x1 mL mix] & [3x200 µL RTase]	PB25.12-03
1200	[12x1 mL mix] & [12x200 µL RTase]	PB25.12-12
qPCRBIO SyGreen 1-Step Go Lo-ROX		
100	[1x1 mL mix] & [1x100 µL RTase Go]	PB25.31-01
300	[3x1 mL mix] & [3x100 µL RTase Go]	PB25.31-03
1200	[12x1 mL mix] & [12x100 µL RTase Go]	PB25.31-12
qPCRBIO SyGreen 1-Step Go Hi-ROX		
100	[1x1 mL mix] & [1x100 µL RTase Go]	PB25.32-01
300	[3x1 mL mix] & [3x100 µL RTase Go]	PB25.32-03
1200	[12x1 mL mix] & [12x100 µL RTase Go]	PB25.32-12



Comparison of qPCRBIO SyGreen® 1-Step Go (purple) against competitor (blue)

Shows amplification traces of the ACTG1 gene from a dilution series of total RNA extracted from mouse liver. qPCRBIO SyGreen® 1-Step Go had equal performance at high RNA concentrations and superior performance at lower RNA concentrations, displaying linear spacing between amplification curves, earlier amplification by 3–4 cycles, and lower prevalence of primer dimers.

qPCRBIO Probe Mixes: Enhanced detection with probe-based qPCR

The qPCRBIO Probe product family comprises universal probe kits designed to give superior sensitivity and specificity in real-time PCR assays with all probe technologies, including TaqMan, Scorpions and molecular beacons.

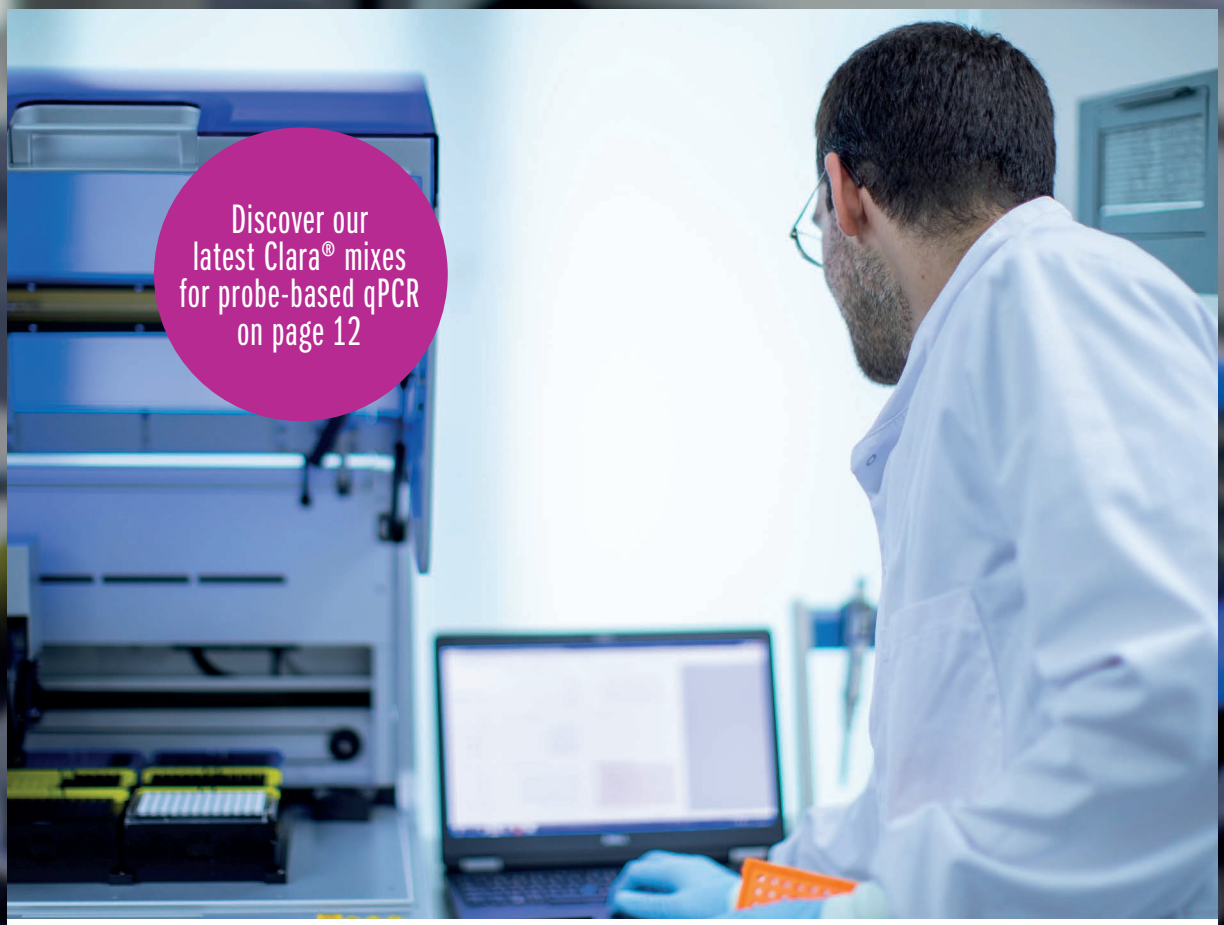
Our original probe-based qPCR mixes combine antibody-mediated hot start technology with optimised buffer chemistry to enable top performance. These qPCRBIO Probe Mixes can be used to reliably detect extremely low copy number targets and quantify any type of RNA or DNA template. The enhanced specificity and strict annealing achieved with qPCRBIO Probe reagents makes them a great choice for multiplexing.

Features

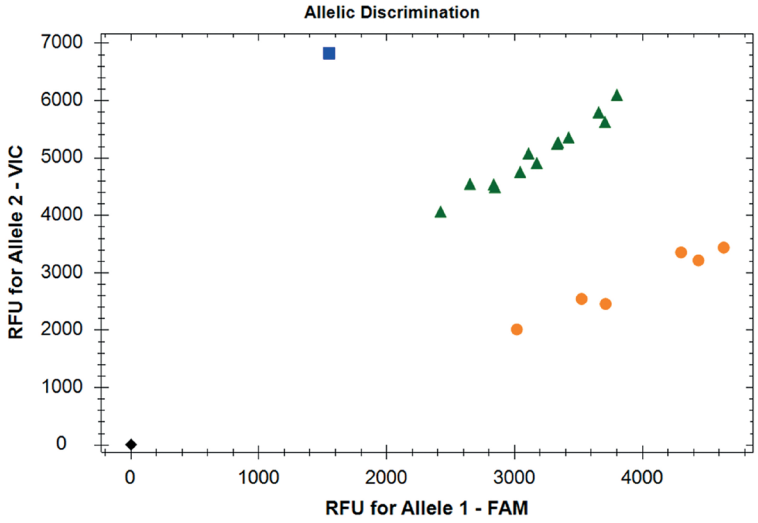
- Ultra-sensitive detection
- Early detection for a wide range of template concentrations
- Antibody-mediated hot start technology
- Compatibility with all real-time PCR platforms
- Mixes for both qPCR and 1-step RT-qPCR

Applications

- Gene expression analysis
- Genotyping
- Allelic discrimination
- In-vitro diagnostic kit development
- Single and multiplex detection



Discover our latest Clara® mixes for probe-based qPCR on page 12



Allelic discrimination for genotyping with qPCRBIO Probe Mix

TaqMan probes designed for SNP rs1726866 in codon 262 of the Taste 2 Receptor Member 38 (TAS2R38) gene were used in duplex reaction (VIC probe for T allele, FAM probe for C allele) to screen for this polymorphism in a population of 20 subjects, starting from extracted genomic DNA.
Based on fluorescence signal, subjects could be classified as non-taster (homozygous for T allele, blue squares), super taster (homozygous for C allele, yellow circles), or intermediate taster (heterozygous, green triangles) for phenylthiocarbamide (bitter taste). Black diamonds indicate no template control.
2 µL genomic DNA, extracted from epithelial cells (buccal swabs) using PCRBIO Rapid Extract Lysis Kit, were added to the reaction mix. Cycling conditions were 95 °C 2 min, 50 cycles of 95 °C 10 sec, 60 °C 30 sec on a Biorad CFX instrument.

qPCRBIO Probe Mix

MORE INFO

A reliable 2x mix designed to give superior sensitivity and specificity in all probe-based real-time PCR assays.

Use qPCRBIO Probe Mix to detect extremely low copy number targets and quantify any DNA template including genomic, cDNA, bacterial, and viral sequences.

Reactions (20 µL)	Presentation	Catalogue No.
qPCRBIO Probe Mix Lo-ROX		
100	1x1 mL	PB20.21-01
500	5x1 mL	PB20.21-05
2000	20x1 mL	PB20.21-20
5000	1x50 mL bottle	PB20.21-50
5000	50x1 mL in pouch	PB20.21-51
qPCRBIO Probe Mix Hi-ROX		
100	1x1 mL	PB20.22-01
500	5x1 mL	PB20.22-05
2000	20x1 mL	PB20.22-20
5000	1x50 mL bottle	PB20.22-50
5000	50x1 mL in pouch	PB20.22-51
qPCRBIO Probe Mix No-ROX		
100	1x1 mL	PB20.23-01
500	5x1 mL	PB20.23-05
2000	20x1 mL	PB20.23-20
5000	1x50 mL bottle	PB20.23-50
5000	50x1 mL in pouch	PB20.23-51
qPCRBIO Probe Mix Separate-ROX		
100	[1x1 mL mix] & [1x200 µL ROX]	PB20.24-01
500	[5x1 mL mix] & [1x200 µL ROX]	PB20.24-05
2000	[20x1 mL mix] & [4x200 µL ROX]	PB20.24-20
5000	[1x50 mL bottle mix] & [2x520 µL ROX]	PB20.24-50
5000	[50x1 mL mix] & [2x520 µL ROX] in pouch	PB20.24-51

qPCRBIO Probe Blue Mix

MORE INFO

A readily visible blue version of qPCRBIO Probe Mix containing an easy-to-see inert blue dye that's handy for mastermix visualisation during plate setup.

Reactions (20 µL)	Presentation	Catalogue No.
qPCRBIO Probe Blue Mix Lo-ROX		
100	1x1 mL	PB20.25-01
500	5x1 mL	PB20.25-05
2000	20x1 mL	PB20.25-20
5000	1x50 mL bottle	PB20.25-50
5000	50x1 mL in pouch	PB20.25-51
qPCRBIO Probe Blue Mix Hi-ROX		
100	1x1 mL	PB20.26-01
500	5x1 mL	PB20.26-05
2000	20x1 mL	PB20.26-20
5000	1x50 mL bottle	PB20.26-50
5000	50x1 mL in pouch	PB20.26-51
qPCRBIO Probe Blue Mix Separate-ROX		
100	[1x1 mL mix] & [1x200 µL ROX]	PB20.27-01
500	[5x1 mL mix] & [1x200 µL ROX]	PB20.27-05
2000	[20x1 mL mix] & [4x200 µL ROX]	PB20.27-20
5000	[1x50 mL bottle mix] & [2x520 µL ROX]	PB20.27-50
5000	[50x1 mL mix] & [2x520 µL ROX] in pouch	PB20.27-51

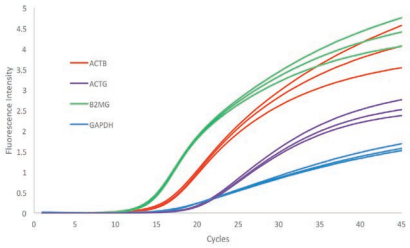
qPCRBIO Probe 1-Step Go

qPCRBIO Probe 1-Step Go is a universal probe kit designed for fast and efficient cDNA synthesis and subsequent real-time PCR in a single tube.

MORE INFO

The kit contains a 2x qPCR mix and separate tube of RTase Go, a thermostable and extremely active modified MMLV reverse transcriptase, which combine for efficient 1-step RT-qPCR.

Reactions (20 µL)	Presentation	Catalogue No.
qPCRBIO Probe 1-Step Go Lo-ROX		
100	[1x1 mL mix] & [1x200 µL RTase Go]	PB25.41-01
300	[3x1 mL mix] & [3x200 µL RTase Go]	PB25.41-03
500	[1x5 mL mix] & [1x500 µL RTase Go]	PB25.41-05
1200	[12x1 mL mix] & [12x100 µL RTase Go]	PB25.41-12
5000	[1x50 mL mix] & [1x5 mL RTase Go]	PB25.41-50
qPCRBIO Probe 1-Step Go Hi-ROX		
100	[1x1 mL mix] & [1x200 µL RTase Go]	PB25.42-01
300	[3x1 mL mix] & [3x200 µL RTase Go]	PB25.42-03
500	[1x5 mL mix] & [1x500 µL RTase Go]	PB25.42-05
1200	[12x1 mL mix] & [12x100 µL RTase Go]	PB25.42-12
5000	[1x50 mL mix] & [1x5 mL RTase Go]	PB25.42-50
qPCRBIO Probe 1-Step Go No-ROX		
100	[1x1 mL mix] & [1x100 µL RTase Go]	PB25.43-01
300	[3x1 mL mix] & [3x100 µL RTase Go]	PB25.43-03
500	[1x5 mL mix] & [1x500 µL RTase Go]	PB25.43-05
1200	[12x1 mL mix] & [12x100 µL RTase Go]	PB25.43-12
5000	[1x50 mL mix] & [1x5 mL RTase Go]	PB25.43-50
qPCRBIO Probe 1-Step Go Separate-ROX		
100	[1x1 mL mix] & [1x100 µL RTase Go] & [1x200 µL ROX]	PB25.44-01
300	[3x1 mL mix] & [3x100 µL RTase Go] & [1x200 µL ROX]	PB25.44-03
1200	[12x1 mL mix] & [12x100 µL RTase Go]& [4x200 µL ROX]	PB25.44-12



qPCRBIO Probe 1-Step Go in multiplex

Four mouse housekeeping genes were amplified simultaneously in a single multiplex reaction. 1 µg of mouse liver total RNA was used as template. Amplification was detected using TaqMan probes in the following gene/probe combinations: B2MG/HEX, ACTB/Cy5, GAPDH/FAM, and ACTG/TexasRed. Cycling conditions were 45 °C 10 min, 95 °C 3 min, then 45 cycles of 95 °C 10 sec, 60 °C 30 sec. This demonstrates that the qPCRBIO Probe 1-Step Go kit can be used to quantify and compare expression levels of multiple genes in a single reaction.

MORE INFO

qPCRBIO Probe 1-Step Virus Detect

qPCRBIO Probe 1-Step Virus Detect includes a concentrated 4x qPCR mix designed for ultra-sensitive detection of RNA by 1-step RT-qPCR.

UNG mixes coming soon!

This mix has been extensively tested on viral RNA but is also perfectly suited for detection of bacterial and eukaryotic RNA templates.

The kit uses separate UltraScript® Reverse Transcriptase to power the cDNA synthesis step and is thermostable up to 55 °C.

Reactions (20 µL)	Presentation	Catalogue No.
qPCRBIO Probe 1-Step Virus Detect Lo-ROX		
200	[1x1 mL mix] & [1x200 µL UltraScript]	PB25.51-01
600	[3x1 mL mix] & [1x600 µL UltraScript]	PB25.51-03
1000	[1x5 mL mix] & [1x1 mL UltraScript]	PB25.51-05
10 000	[1x50 mL mix] & [2x5 mL UltraScript]	PB25.51-50
qPCRBIO Probe 1-Step Virus Detect Hi-ROX		
200	[1x1 mL mix] & [1x200 µL UltraScript]	PB25.52-01
600	[3x1 mL mix] & [1x600 µL UltraScript]	PB25.52-03
1000	[1x5 mL mix] & [1x1 mL UltraScript]	PB25.52-05
10000	[1x50 mL mix] & [2x5 mL UltraScript]	PB25.52-12
qPCRBIO Probe 1-Step Virus Detect No-ROX		
200	[1x1 mL mix] & [1x200 µL UltraScript]	PB25.53-01
600	[3x1 mL mix] & [1x600 µL UltraScript]	PB25.53-03
1000	[1x5 mL mix] & [1x1 mL UltraScript]	PB25.53-05
10000	[1x50 mL mix] & [2x5 mL UltraScript]	PB25.53-12
qPCRBIO Probe 1-Step Virus Detect Separate-ROX		
200	[1x1 mL mix] & [1x200 µL UltraScript] & [1x200 µL ROX]	PB25.54-01
600	[3x1 mL mix] & [1x600 µL UltraScript] & [1x200 µL ROX]	PB25.54-03
1000	[1x5 mL mix] & [1x1 mL UltraScript] & [1x200 µL ROX]	PB25.54-12

Clara® Probe Mixes: For clear results and reliable conclusions

Clara® Probe Mixes are the latest generation of universal probe-based qPCR kits, designed to give superior sensitivity and specificity in all probe-based real-time PCR assays, including TaqMan, Scorpions, and molecular beacon probes.

The Clara® range of qPCR reagents was developed to meet the demands of today's laboratories. Designed to push the limits of real-time PCR performance, our latest reagents bring clear results, so that you can draw reliable conclusions. Mixes are available with both clear and easy-to-see purple versions, and formulations to meet all passive reference dye requirements. Whether you're performing simple probe-based qPCR or multiplex 1-step RT-qPCR, there is a Clara® product for you.

Features

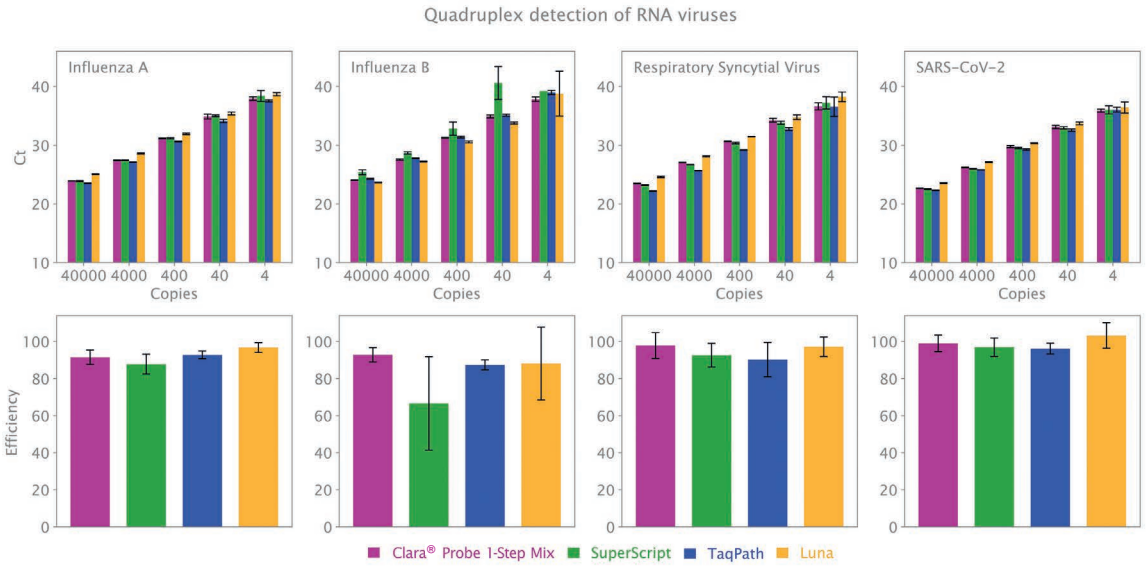
- Concentrated 4x mixes, for greater flexibility in reaction setup
- Single tube format 1-step kits, for minimal pipetting during setup
- Rapid extension rate for early Ct values
- Market-leading sensitivity
- Increased limit of detection down to 4 target copies
- Efficient amplification from GC and AT-rich templates
- Compatible with all standard and fast cycling real-time instruments

Applications

- Absolute quantification
- Relative gene expression analysis
- TaqMan, Scorpions and molecular beacon probes
- Detection of extremely low copy number targets
- Diagnostic real-time PCR
- Genotyping and allelic discrimination
- Single and multiplex detection

Scan for a guide on using Clara® in multiplex detection assays

APPLICATION NOTE



Reliable detection of RNA viruses in a multiplex setup

Multiplex amplification of common winter viruses (Influenza A, Influenza B, Respiratory Syncytial Virus, and SARS-CoV-2) using Clara® Probe 1-Step Mix (purple bars), Thermo Fisher SuperScript III Platinum OneStep qRT-PCR Kit (green bars), Thermo Fisher TaqPath 1-Step Multiplex Mastermix (blue bars) and NEB Luna Universal Probe One-Step RT-qPCT Kit (yellow bars). Ct values are shown in the top panels and efficiency in the bottom panels. 5 serial dilutions of RNA template were used, corresponding to 40 000, 4000, 400, 40, and 4 copies of each viral genome. The total reaction volume was 20 µL. Cycling conditions were 52 °C 15 min, 95 °C 3 min and 50 cycles of 95 °C 15 s, 60 °C 30 s. Clara® Probe 1-Step Mix shows high sensitivity and reproducible amplification, even for low copy number templates, while maintaining optimal efficiency in a multiplex setup, in line or better than major competitors.

What our customers say...

"We recently switched to Clara Probe Mix from our previous supplier and were amazed by the ease of the transition and how efficient and easy to use the Clara Probe Mix was.

The 4x concentration is much better for shipping and sustainability than our previous 2x mix. It's also much cheaper and performs far better with more challenging samples."

Senior Ecology Scientist

Clara® Probe Mix

MORE INFO

Clara® Probe Mix is a 4x reaction-ready qPCR mix for probe-based detection of DNA targets, offering clear and consistent results. This cutting-edge qPCR mix will streamline your real-time PCR workload no matter what the application.

AquaPlex formats are designed with a passive reference dye suitable for detection in the red (Cy5, 650 nm) channel, enabling the use of probe dyes that can be monitored in the channel normally used for ROX detection. This allows for more optimal signal generation and better quality data in multiplex assays.

Reactions (20 µL)	Presentation	Catalogue No.
Clara Probe Mix Lo-ROX		
200	1x1 mL	PB20.61-01
600	3x1 mL	PB20.61-03
1000	5x1 mL	PB20.61-05
10000	1x50 mL bottle	PB20.61-50
Clara Probe Mix Hi-ROX		
200	1x1 mL	PB20.62-01
600	3x1 mL	PB20.62-03
1000	5x1 mL	PB20.62-05
10000	1x50 mL bottle	PB20.62-50
Clara Probe Mix No-ROX		
200	1x1 mL	PB20.63-01
600	3x1 mL	PB20.63-03
1000	5x1 mL	PB20.63-05
10000	1x50 mL bottle	PB20.63-50
Clara Probe Mix Separate-ROX		
200	[1x1 mL] & [1x200 µL ROX]	PB20.64-01
600	[3x1 mL] & [1x200 µL ROX]	PB20.64-03
1000	[5x1 mL] & [1x200 µL ROX]	PB20.64-05

Reactions (20 µL)	Presentation	Catalogue No.
Clara Probe Mix AquaPlex		
200	1x1 mL	PB20.69-01
600	3x1 mL	PB20.69-03
1000	5x1 mL	PB20.69-05
10000	1x50 mL bottle	PB20.69-50

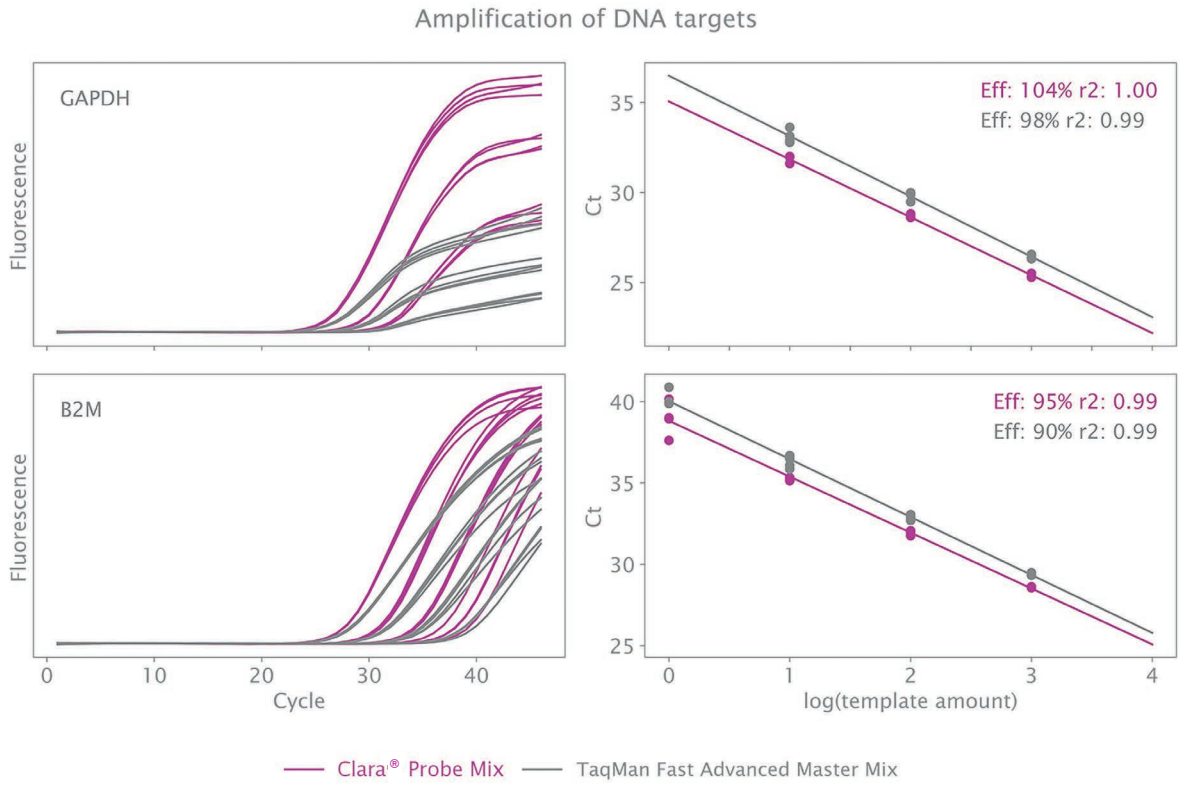
UNG mixes coming soon!

MORE INFO

Clara® Probe Purple Mix

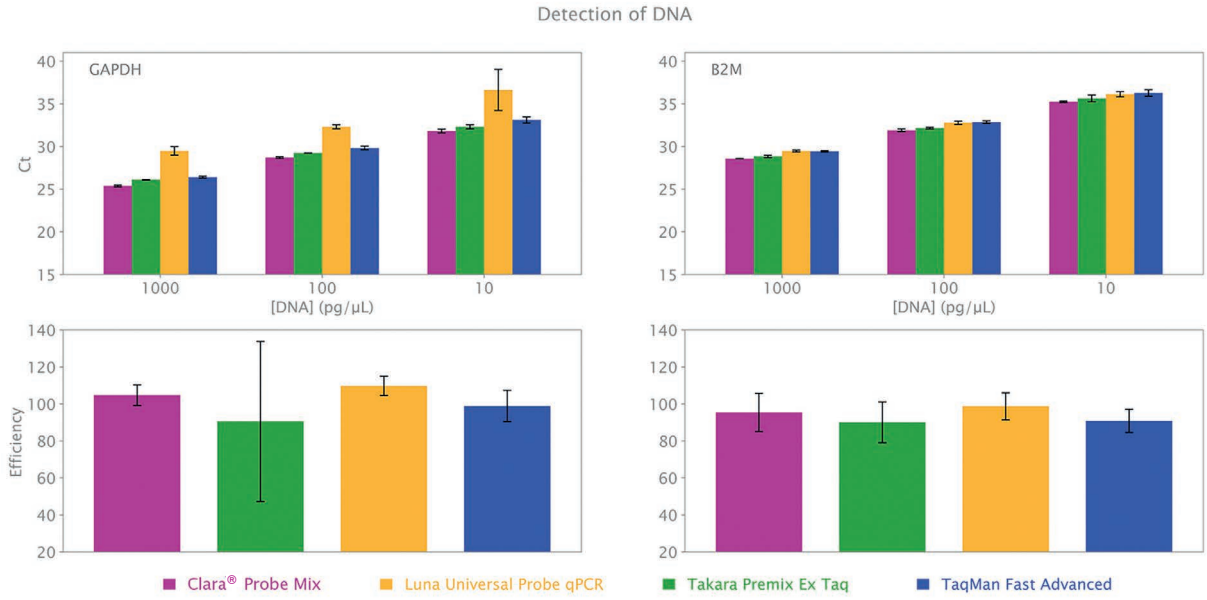
Clara® Probe Purple Mix is a readily visible 4x qPCR mix for probe-based detection of DNA targets, offering clear and consistent results. This cutting-edge qPCR mix contains an inert purple dye for easy sample visualisation that makes plate setup easier than ever.

Reactions (20 µL)	Presentation	Catalogue No.
Clara Probe Purple Mix Lo-ROX		
200	1x1 mL	PB20.65-01
600	3x1 mL	PB20.65-03
1000	5x1 mL	PB20.65-05
10000	1x50 mL bottle	PB20.65-50
Clara Probe Purple Mix Hi-ROX		
200	1x1 mL	PB20.66-01
600	3x1 mL	PB20.66-03
1000	5x1 mL	PB20.66-05
10000	1x50 mL bottle	PB20.66-50
Clara Probe Purple Mix No-ROX		
200	1x1 mL	PB20.67-01
600	3x1 mL	PB20.67-03
1000	5x1 mL	PB20.67-05
10000	1x50 mL bottle	PB20.67-50
Clara Probe Purple Mix Separate-ROX		
200	[1x1 mL] & [1x200 µL ROX]	PB20.68-01
600	[3x1 mL] & [1x200 µL ROX]	PB20.68-03
1000	[5x1 mL] & [1x200 µL ROX]	PB20.68-05



Sensitive amplification of cDNA targets with Clara Probe Mix

Four mouse housekeeping genes were amplified simultaneously in a single multiplex reaction. 1 µg of mouse liver total RNA was used as template. Amplification was detected using TaqMan probes in the following gene/probe combinations: B2MG/HEX, ACTB/Cy5, GAPDH/FAM, and ACTG/TexasRed. Cycling conditions were 45 °C 10 min, 95 °C 3 min, then 45 cycles of 95 °C 10 sec, 60 °C 30 sec. This demonstrates that the qPCRBIO Probe 1-Step Go mix can be used to quantify and compare expression levels of multiple genes in a single reaction.



Clara® Probe Mix outperforms main competitors in cDNA amplification

Amplification of common housekeeping genes (GAPDH, and β-2-Microglobulin [B2M]) using Clara® Probe Mix (purple), Luna Universal Probe qPCR Master Mix (yellow), Takara Premix Ex Taq (green), and TaqMan Fast Advanced Master Mix (blue). Ct values are shown in the top panels and efficiency in the bottom panels. Three (for GAPDH) or four (for B2M) serial dilutions of mouse cDNA template were used, corresponding to 1 ng/µL, 100 pg/µL, and 10 pg/µL. The cycling conditions were 95 °C 2 min, followed by 50 cycles of 95 °C 10s, 60 °C 30 s. Clara® Probe Mix shows lower Ct values and better efficiencies than the main competitors.

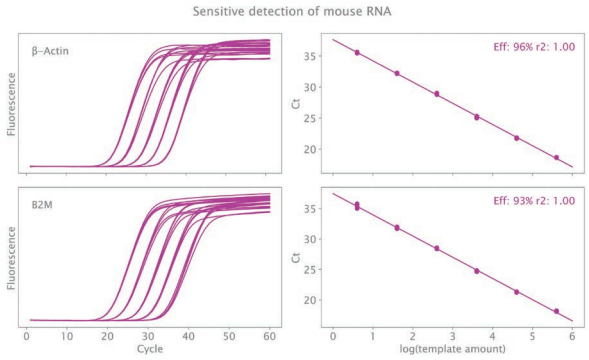
Clara® Probe 1-Step Mix

UNG mixes coming soon!

MORE INFO

A carefully balanced 4x reaction-ready RT-qPCR mix that combines maximum sensitivity with ease of use for streamlined 1-step RT-qPCR workflows. The mix contains a specially modified MMLV reverse transcriptase combined with a hot start DNA polymerase and RNase inhibitor in a single tube for minimal pipetting. Suitable for both DNA and RNA detection.

Reactions (20 µL)	Presentation	Catalogue No.
Clara Probe 1-Step Mix Lo-ROX		
200	1x1 mL	PB25.81-01
600	3x1 mL	PB25.81-03
1000	5x1 mL	PB25.81-05
10000	1x50 mL bottle	PB25.81-50
Clara Probe 1-Step Mix Hi-ROX		
200	1x1 mL	PB25.82-01
600	3x1 mL	PB25.82-03
1000	5x1 mL	PB25.82-05
10000	1x50 mL bottle	PB25.82-50
Clara Probe 1-Step Mix No-ROX		
200	1x1 mL	PB25.83-01
600	3x1 mL	PB25.83-03
1000	5x1 mL	PB25.83-05
10000	1x50 mL bottle	PB25.83-50
Clara Probe 1-Step Mix Separate-ROX		
200	[1x1 mL] & [1x200 µL ROX]	PB25.84-01
600	[3x1 mL] & [1x200 µL ROX]	PB25.84-03
1000	[5x1 mL] & [1x200 µL ROX]	PB25.84-05



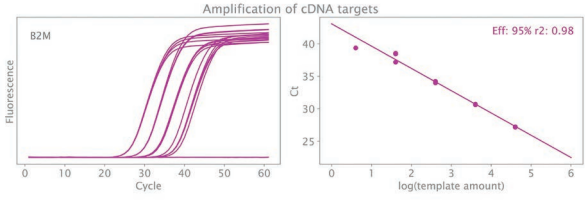
Sensitive detection of mouse RNA in singleplex reactions

Amplification of common housekeeping genes (β-Actin and β-2-Microglobulin [B2M]) in singleplex setup using Clara® Probe 1-Step Mix. Amplification curves are shown in the left panels and efficiency in the right panels. 5 serial dilutions of mouse total RNA template were used, corresponding to 50 ng/µL, 5 ng/µL, 500 pg/µL, 50 pg/µL, and 5 pg/µL. The total reaction volume was 20 µL. Cycle conditions were 52 °C 5 min, 95 °C 3 min and 60 cycles of 95 °C 15 s, 60 °C 30 s. Clara® Probe 1-Step Mix offers high sensitivity and reproducible amplification, with optimal efficiency, even at low template concentrations.

MORE INFO

Clara® Probe 1-Step Purple Mix

This purple 4x RT-qPCR mix offers all the features of Clara® Probe 1-Step Mix for probe-based RT-qPCR workflows combined with an inert purple dye for easy sample visualisation during plate setup.



Singleplex sensitivity with mouse cDNA

Amplification of common housekeeping genes (β-2-Microglobulin [B2M]), in singleplex setup using Clara® Probe 1-Step Mix. Amplification curves are shown in the left panel and efficiency in the right panel. 5 serial dilutions of mouse cDNA template were used, corresponding to 1 ng/µL, 100 pg/µL, 10 pg/µL, 1 pg/µL, and 0.1 pg/µL (for B2M). The total reaction volume was 20 µL. Cycle conditions were 95 °C for 2 min, and 60 cycles of 95 °C 10 s, 60 °C 30 s. Clara® Probe 1-Step Mix shows high sensitivity and reproducible amplification even at low template concentrations with optimal efficiency also for DNA targets.

Reactions (20 µL)	Presentation	Catalogue No.
Clara Probe 1-Step Pruple Mix Lo-ROX		
200	1x1 mL	PB25.85-01
600	3x1 mL	PB25.85-03
1000	5x1 mL	PB25.85-05
10000	1x50 mL bottle	PB25.85-50
Clara Probe 1-Step Purple Mix Hi-ROX		
200	1x1 mL	PB25.86-01
600	3x1 mL	PB25.86-03
1000	5x1 mL	PB25.86-05
10000	1x50 mL bottle	PB25.86-50
Clara Probe 1-Step Purple Mix No-ROX		
200	1x1 mL	PB25.87-01
600	3x1 mL	PB25.87-03
1000	5x1 mL	PB25.87-05
10000	1x50 mL bottle	PB25.87-50
Clara Probe 1-Step Purple Mix Separate-ROX		
200	[1x1 mL] & [1x200 µL ROX]	PB25.88-01
600	[3x1 mL] & [1x200 µL ROX]	PB25.88-03
1000	[5x1 mL] & [1x200 µL ROX]	PB25.88-05

Clara® HRM Mix

Powered by a third-generation DNA-intercalating SyGreen 2 dye, this 2x qPCR mix delivers superior performance to accurately detect genetic mutations, quickly identify genotypes based on SNPs, or calculate percent methylation of a target region.

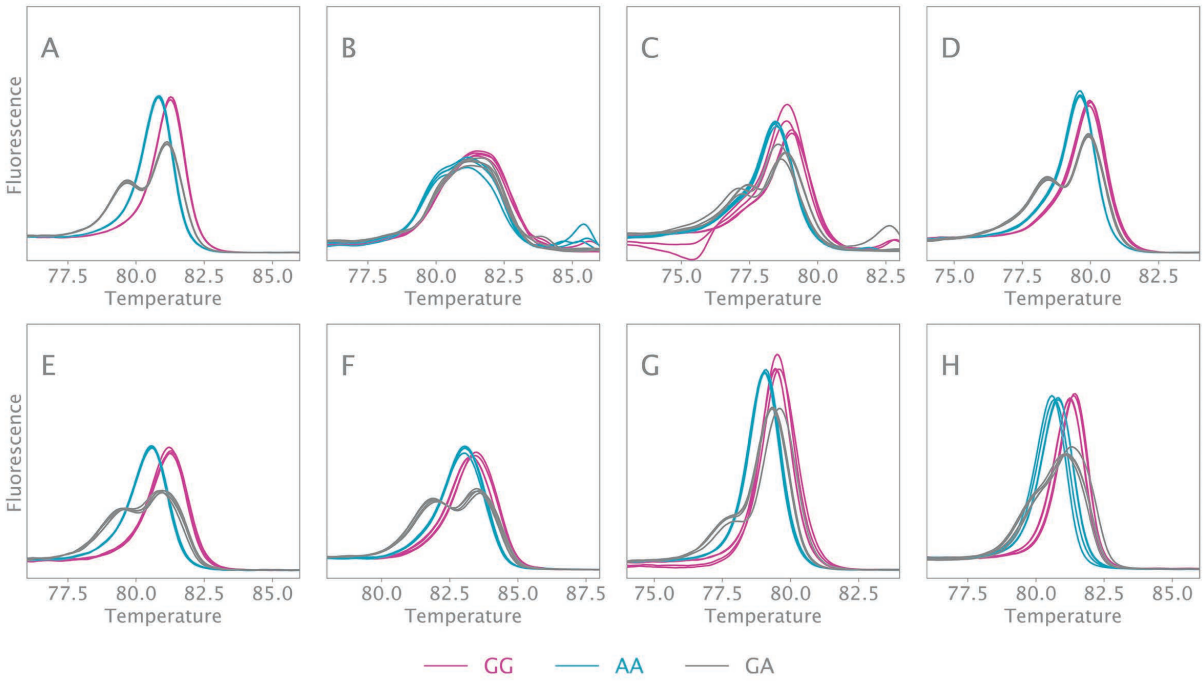
MORE INFO

High Resolution Melt (HRM) analysis exploits the differences in melt curve shapes and DNA melting temperature to discriminate sequence variations between samples. This mix offers a cost-effective alternative to probe-based detection while enabling enhanced allelic discrimination.

Reactions (20 µL)	Presentation	Catalogue No.
Clara HRM Mix		
100	1x1 mL	PB20.32-01
500	3x1 mL	PB20.32-05
2000	5x1 mL	PB20.32-20

Features

- Accurate distinction of SNP classes I-IV
- Quantify methylation of target sequences
- Super-sensitive product melt curves for distinct allele profiles
- Compatible with all HRM-suitable real-time instruments
- Powered by PCRBIO Taq DNA polymerase



High resolution melting analysis of SNP rs12913832

A. Clara® HRM Mix; B. qPCRBIO SyGreen Mix; C. Thermo MeltDoctor HRM Master Mix; D. Bio-Rad Precision Melt Supermix; E. Kapa HRM Fast qPCR Kit; F. BioFire Defense LightScanner Master Mix; G. Qiagen Type-it HRM PCR Kit; H. Roche LightCycler 480 High Resolution Melting Master Mix. Clara® HRM Mix reactions include 0.4 µM of each primer and 5 ng of human genomic DNA. Cycling conditions were 95°C 2 min followed by 45 cycles of 95 °C 5 s and 60 °C 20 s. All others according to manufacturer's instructions.

Clara® Inhibitor-Tolerant Mixes: Powerful qPCR performance with the toughest samples

Clara® Inhibitor-Tolerant Probe and Probe 1-Step Mixes combine the cutting-edge performance of Clara® Probe reagents with our newest inhibitor-tolerant chemistry, enabling crude saliva and blood input and tolerating many laboratory, clinical and environmental PCR inhibitors.

Clara® Inhibitor-Tolerant Mixes were developed for use with the most challenging sample types. Crude sample input saves time and the associated cost of diagnostic workflows, because extraction is unnecessary. Additionally, extraction from inhibitor-rich samples is often imperfect, with inhibitors carried over into final extracted samples, resulting in failed qPCR reactions or delayed Cqs. Our validated inhibitor-tolerance helps overcome these issues, with extensive testing in the presence of common inhibitors (see opposite).

Features

- Broad-spectrum inhibitor tolerance
- Concentrated 4x mix format, ideal for high-throughput, highly multiplexed assays
- Contains modified UltraScript® RTase in a single-tube format
- Advanced RNase inhibitor
- Antibody-mediated hot start technology
- Compatible with all real-time PCR platforms – standard and fast cycling conditions
- Standard and ultra-fast cycling (down to 3 min RT reaction and 1 s denaturation, 3 s annealing/extension for PCR)

Applications

- In vitro diagnostic kit development
- Single & multiplex RNA & DNA detection
- Crude saliva qPCR & RT-qPCR
- Gene expression analysis
- Genotyping
- Allelic discrimination

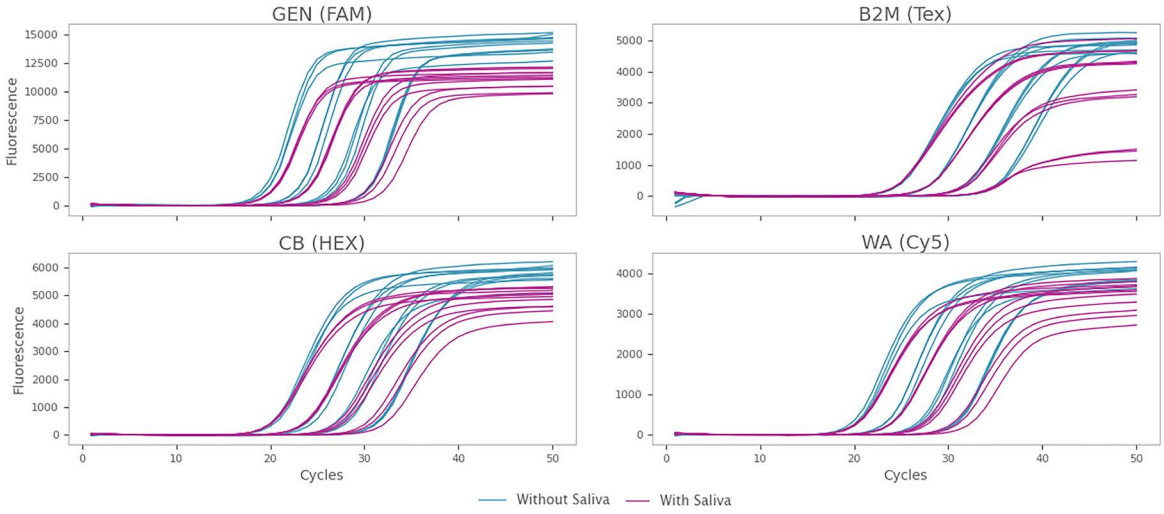
Scan to see how Clara® enables reliable target detection in crude saliva

APPLICATION NOTE

Clara® Inhibitor-Tolerant Mixes have been extensively tested against:

- Crude saliva (10%)
- Crude blood (6%)
- Laboratory chemicals: SDS, guanidine & ethanol
- Clinical inhibitors: Hemin, hemoglobin, heparin, lactoferrin, immunoglobulins & urea
- Plant and environmental inhibitors: Humic acid, catechin, quercetin, tannic acid, cellulose, and chlorophyll

Multiplex detection of DNA with and without saliva



Fourplex detection of DNA targets with and without saliva

Four DNA targets, GEN (general MPX), β–microtubulin (B2M), CB (Congo Basin MPX), WA (West Africa MPX), were amplified, in the presence (purple) and absence (blue) of human saliva, in a multiplex qPCR assay with Clara® Inhibitor–Tolerant Probe Mix. Four template dilutions (10000, 1000, 100, and 10 copies for the monkeypox (MPX) viral targets and 250, 25, 2.5, and 0.25 pg/µL for B2M) with three technical replicates for each target were used in 20 µL reactions. Reactions with saliva contained 5 µL saliva diluted 1/10 in universal transport medium, corresponding to 2.5% human saliva per reaction. Cycling conditions were 95 °C for 3 min, followed by 50 cycles of 95 °C for 10 s, and 60 °C for 20 s. Clara® Inhibitor–Tolerant Probe Mix successfully amplifies DNA targets in multiplex setup even in the presence of human saliva.

Clara® Inhibitor-Tolerant Probe Mix

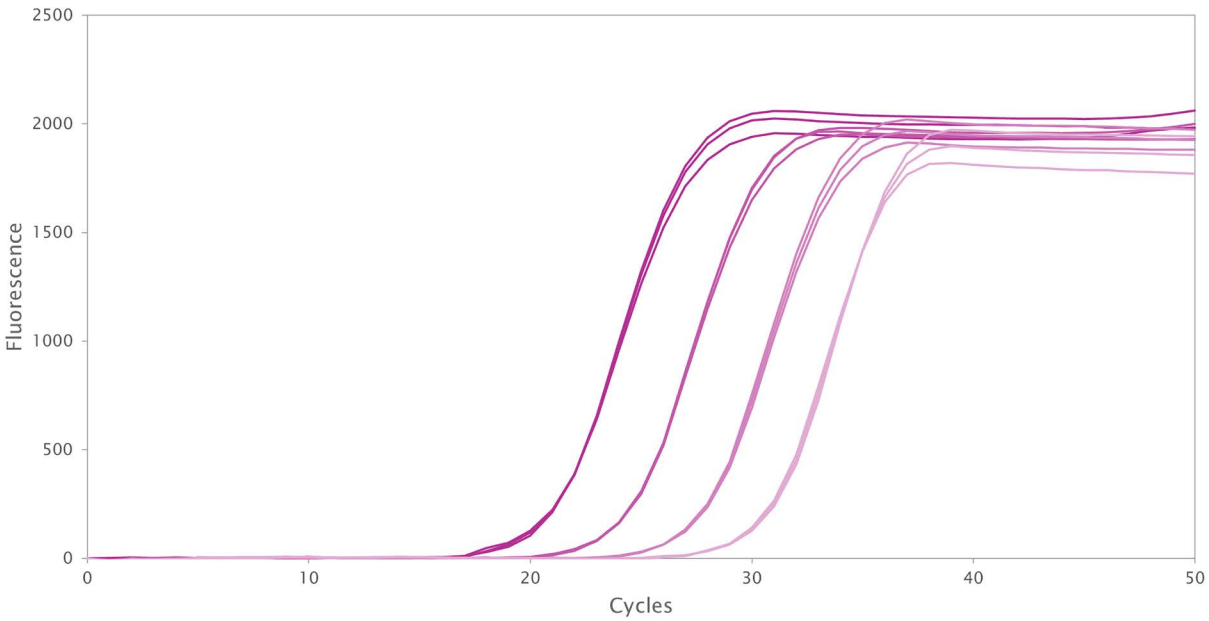
MORE INFO

Clara® Inhibitor-Tolerant Probe Mix is a 4x reaction-ready mix that includes a DNA polymerase, buffering agents, magnesium, dNTPs and other necessary components for successful probe-based qPCR, all in a single-tube format. The end user can combine this mix with primers, probes and templates for single or multiplex detection.

This mix is compatible with all probe chemistries including TaqMan, Scorpions and molecular beacons, and with all commercial real-time PCR instruments. Clara® Inhibitor-Tolerant Probe Mix is designed for use in in vitro diagnostic (IVD) kit development and various research applications requiring efficient, reliable qPCR reactions. It has been extensively validated against crude (or diluted) saliva and blood, along with multiple other pure chemical inhibitors.

Reactions (20 µL)	Presentation	Catalogue No.
Clara Inhibitor-Tolerant Probe Mix Lo-ROX		
200	1x1 mL	PB20.71-01
600	3x1 mL	PB20.71-03
1000	5x1 mL	PB20.71-05
10000	1x50 mL bottle	PB20.71-50
Clara Inhibitor-Tolerant Probe Mix Hi-ROX		
200	1x1 mL	PB20.72-01
600	3x1 mL	PB20.72-03
1000	5x1 mL	PB20.72-05
10000	1x50 mL bottle	PB20.72-50
Clara Inhibitor-Tolerant Probe Mix No-ROX		
200	1x1 mL	PB20.73-01
600	3x1 mL	PB20.73-03
1000	5x1 mL	PB20.73-05
10000	1x50 mL bottle	PB20.73-50
Clara Inhibitor-Tolerant Probe Mix Separate-ROX		
200	[1x1 mL] & [1x200 µL ROX]	PB20.74-01
600	[3x1 mL] & [1x200 µL ROX]	PB20.74-03
1000	[5x1 mL] & [1x200 µL ROX]	PB20.74-05

UNG mixes coming soon!



Detection of a DNA target with Clara® Inhibitor–Tolerant Probe Mix

Clara® Inhibitor-Tolerant Probe Mix was used to amplify a serial dilution of γ-actin in a probe-based qPCR reaction. Four template dilutions (250, 25, 25, and 0.25 pg/µL per reaction) with three technical replicates for each target were used in 20 µL reactions. Cycling conditions were 95 °C for 3 min, followed by 50 cycles of 95 °C for 10 s, and 60 °C for 20 s. Clara® Inhibitor-Tolerant Probe Mix successfully amplifies cDNA targets from as little as 0.25 pg/µL per reaction.

Clara® Inhibitor-Tolerant Probe 1-Step Mix

MORE INFO

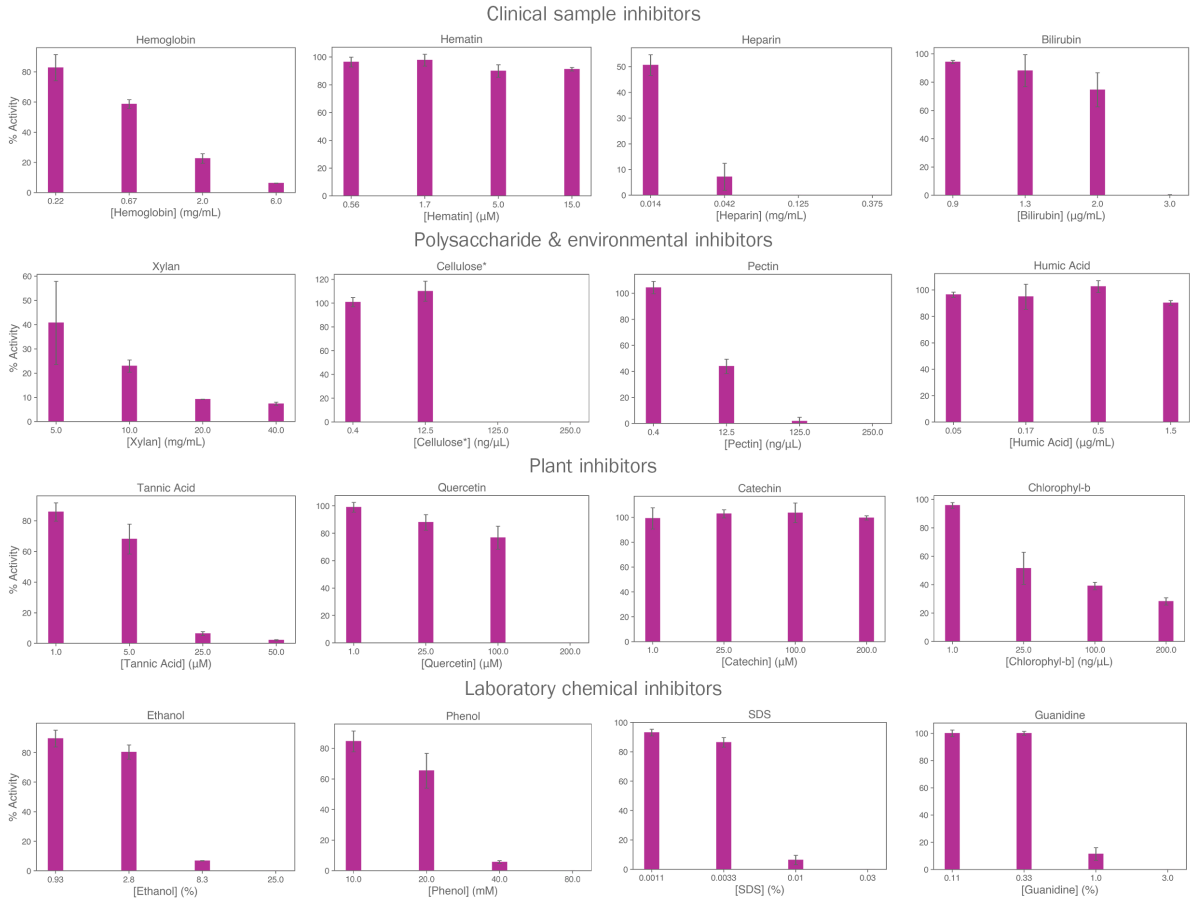
Clara® Inhibitor-Tolerant Probe 1-Step Mix is an all-in-one 4x ready-mix that includes a DNA polymerase, reverse transcriptase, RNase inhibitor, buffering agents, magnesium, dNTPs, and other necessary components for successful probe-based (RT-)qPCR.

UNG mixes coming soon!

This 1-step mix can be used to amplify both DNA and RNA samples without a loss in efficiency, regardless of template type. It has been extensively engineered for use in crude saliva testing and tolerates a wide range of clinical and laboratory-derived qPCR inhibitors. It is compatible with all probe chemistries including TaqMan, Scorpions and molecular beacons, and with all commercial real-time PCR instruments.

Reactions (20 µL)	Presentation	Catalogue No.
Clara Inhibitor-Tolerant Probe 1-Step Mix Lo-ROX		
200	1x1 mL	PB20.91-01
600	3x1 mL	PB20.91-03
1000	5x1 mL	PB20.91-05
10000	1x50 mL bottle	PB20.91-50
Clara Inhibitor-Tolerant Probe 1-Step Mix Hi-ROX		
200	1x1 mL	PB20.92-01
600	3x1 mL	PB20.92-03
1000	5x1 mL	PB20.92-05
10000	1x50 mL bottle	PB20.92-50

Reactions (20 µL)	Presentation	Catalogue No.
Clara Inhibitor-Tolerant Probe 1-Step Mix No-ROX		
200	1x1 mL	PB20.93-01
600	3x1 mL	PB20.93-03
1000	5x1 mL	PB20.93-05
10000	1x50 mL bottle	PB20.93-50
Clara Inhibitor-Tolerant Probe 1-Step Mix Separate-ROX		
200	[1x1 mL] & [1x200 µL ROX]	PB20.94-01
600	[3x1 mL] & [1x200 µL ROX]	PB20.94-03
1000	[5x1 mL] & [1x200 µL ROX]	PB20.94-05



Clara® Inhibitor-Tolerant Mixes enable reliable qPCR amplification in the presence of various inhibitors

Clara® Inhibitor-Tolerant Probe 1-Step Mix was challenged with increasing amounts of various clinical, plant, environmental and laboratory chemical inhibitors (see axis labels for specific inhibitors). The % activity in the presence of each inhibitor concentration was calculated based on a corresponding uninhibited control reaction (100% activity). PCR Biosystems inhibitor-tolerant chemistry offers robust qPCR performance in the presence of most of the tested inhibitors. *Cellulose is not water soluble under reaction conditions used and was added in suspension.

cDNA Synthesis

Thermostable High yields Versatile

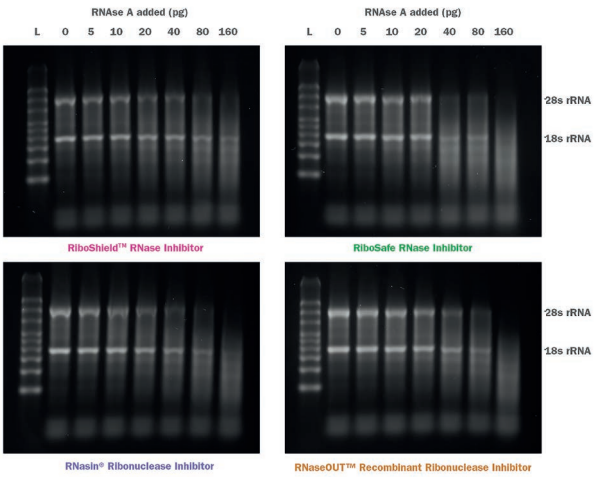
RiboShield®
RNase Inhibitor

RiboShield® RNase Inhibitor is a recombinant protein that blocks the activity of a wide range of ribonucleases to reliably protect your RNA from RNase digestion. The inhibitor is designed for use in RNA-sensitive applications where the presence of even small amounts of RNase can be highly detrimental to RNA quality and experimental outcome.

MORE INFO

RiboShield® is able to perform over a wide range of reaction conditions and can sustain inhibition of RNase A at temperatures up to 65 °C for at least 30 minutes. In addition, RiboShield® does not contain cysteine residues which have been implicated in the oxidation sensitivity of the human placental version of the protein. This results in an RNase inhibitor molecule that is not only thermostable, but also more resistant to oxidative stress.

Units	Presentation	Catalogue No.
RiboShield RNase Inhibitor		
2500	1x62.5 µL	PB30.23-02
10000	4x62.5 µL	PB30.23-10



RiboShield gives superior protection against RNase A

RiboShield® RNase Inhibitor and three competitor products (40 U) were incubated with the indicated amounts of RNase A and 1 µg RNA in 5x UltraScript® buffer at 37 °C for 30 min. Samples were then loaded on a 1% agarose gel. L: Ambion RNA Millennium Markers. The RNase inhibitors used were PCR Biosystems' RiboShield®, Promega's RNasin, Bioline's RiboSafe and ThermoFisher's RNaseOUT.

RiboShield® RNase Inhibitor offers the greatest RNA protection amongst the inhibitors tested.

Features

- Superior protection leading to better performance in RNA-sensitive applications
- Inhibits eukaryotic RNases, including RNase A, B and C
- Compatible with reverse transcriptases, RNA polymerases and Taq DNA polymerase
- Stable up to 65 °C for at least 30 minutes
- Ribonuclease and phosphatase free
- Ideal for long term storage of samples

Applications

- cDNA synthesis
- 1-step RT-PCR and RT-qPCR
- RNA purification
- RNA sequencing
- In vitro transcription and translation

UltraScript® Reverse Transcriptase & cDNA Synthesis Kits

UltraScript® Reverse Transcriptase is a robust and thermostable modified MMLV reverse transcriptase engineered to enhance cDNA synthesis speed and yield with accurate transcript representation. The latest developments in reverse transcriptase technology and buffer chemistry combine for efficient and sensitive cDNA synthesis.

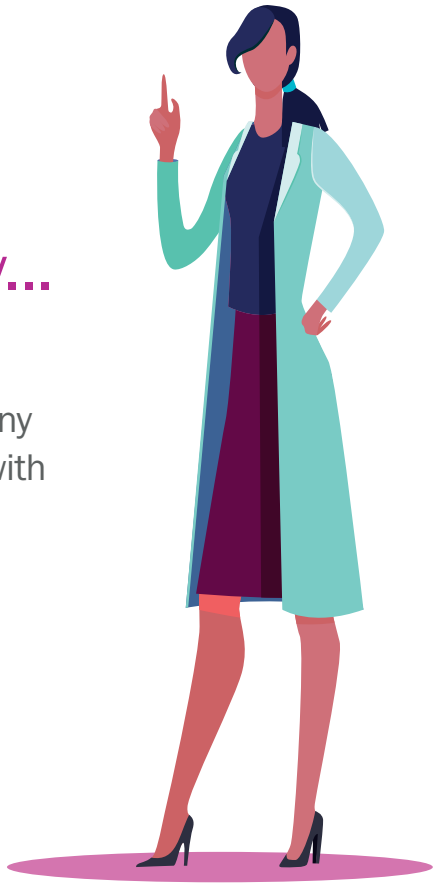
Enhanced thermostability of UltraScript® Reverse Transcriptase allows reaction temperatures to be increased up to 55 °C, providing higher specificity and efficient transcription of RNA regions with stable secondary structures.

This enzyme is supplied with a 5x buffer containing Mg, dNTPs, stabilisers and enhancers and is available in different formulations, as a stand-alone enzyme or as cDNA synthesis kits with primers. Thus, UltraScript® Reverse Transcriptase products provide the flexibility for users to choose the right product for their preferred priming strategy. These products offer exceptional performance with gene-specific primers, oligo(dT) and random hexamers to produce high quality cDNA, and are suited for a variety of downstream applications.

What our customers say...

> UltraScript® Reverse Transcriptase is excellent in reverse transcription with many RNA viruses like PPRV. It is easy to use with good results.

Virology Laboratory Manager



Features

- Thermostable reverse transcriptase 45 °C to 55 °C
- Advanced RNase inhibitor
- High cDNA yields from as little as 4 pg total RNA
- Accurate reverse transcription of GC-rich templates
- Sensitive detection of low copy number transcripts
- Reduced RNase H activity
- Flexible priming strategies: random hexamer, oligo(dT) and gene-specific primers

Applications

- cDNA synthesis for PCR analysis
- Transcript cloning
- cDNA library preparation
- RNA-Seq
- Viral RNA target detection
- miRNA target detection
- Efficient synthesis from total RNA or poly(A)+ RNA

UltraScript® Reverse Transcriptase

MORE INFO

A stand-alone version of our tough reverse transcriptase, allowing full reaction customisation from titrating the amount of enzyme, to the choice of priming strategy. This formulation offers maximum flexibility for cDNA synthesis.

Units	Presentation	Catalogue No.
UltraScript Reverse Transcriptase		
10000	[2x25 µL 200 U/µL] & [1x200 µL buffer]	PB30.12-01
40000	[2x100 µL 200 U/µL] & [4x200 µL buffer]	PB30.12-04

UltraScript® cDNA Synthesis Kit

Get the power and efficiency of UltraScript® Reverse Transcriptase in a specially formulated cDNA synthesis kit with the reaction buffer containing optimised concentrations of random hexamer and oligo(dT) primers for unbiased cDNA synthesis. This mix is ideal for routine cloning and real-time PCR workflows, with minimal need for pipetting and reaction optimisation.

Reactions (20 µL)	Presentation	Catalogue No.
UltraScript cDNA Synthesis Kit		
25	[1x0.1 mL mix] & [1x0.025 mL RTase]	PB30.11-02
100	[4x0.1 mL mix] & [1x0.1 mL RTase]	PB30.11-10

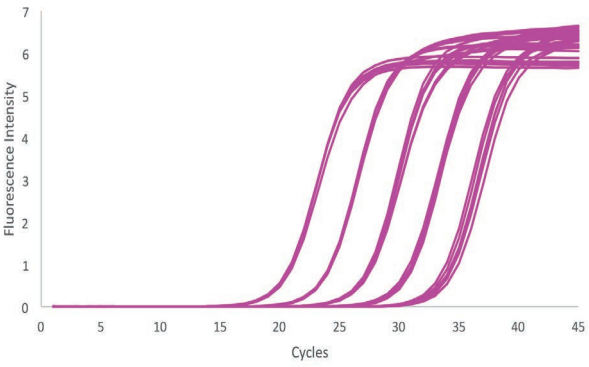
UltraScript® cDNA Synthesis Kit Separate-Oligos

This flexible version of our cDNA synthesis kit in which UltraScript® Reverse Transcriptase is supplied with a fully optimised reaction buffer, while oligo(dT) and random hexamer primers are provided in separate tubes, allowing users the freedom to choose their preferred standard primer depending on their experimental needs.

Reactions (20 µL)	Presentation	Catalogue No.
UltraScript cDNA Synthesis Kit Separate-Oligos		
25	[1x0.1 mL mix] & [1x0.025 mL RTase] & [1x100 µL Anchored Oligo(dT)$_{18}$] & [1x100 µL Random Hexamers]	PB30.15-02
100	[4x0.1 mL mix] & [1x0.1 mL RTase] & [1x100 µL Anchored Oligo(dT)$_{18}$] & [1x100 µL Random Hexamers]	PB30.15-10

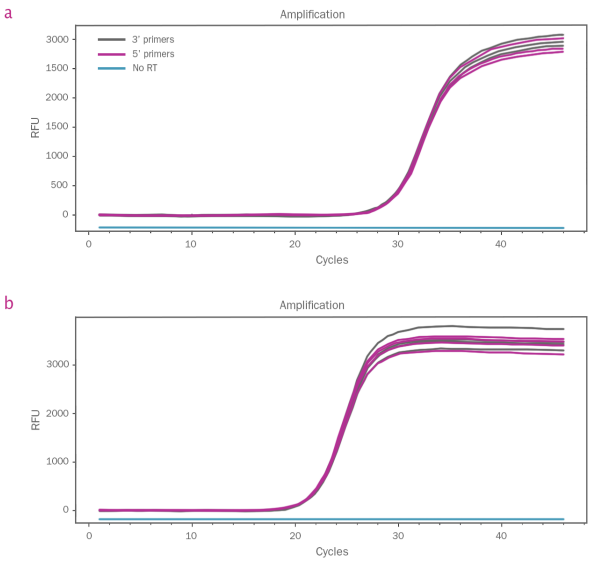
Select the right kit for your priming strategy

Primers	RNA Source	Intended Use	Recommended Product
Oligo(dT) & random hexamers	Any	qPCR, cloning, NGS	PB30.11 and PB30.15
Random hexamers	Prokaryotic, Archaeal	qPCR, cloning, NGS	PB30.15, (PB30.12, user must supply primer)
Oligo(dT)	Eukaryotic	qPCR, cloning, NGS	PB30.15, (PB30.12, user must supply primer)
Gene specific primers	Any	Cloning, targeted qPCR, targeted NGS	PB30.12 (user must supply primer)



Broad reverse transcription dynamic range

UltraScript® cDNA Synthesis Kit was used for cDNA synthesis using a 10 fold serial dilution of mouse total RNA from 40 pg to 400 ng. qPCR was performed using qPCRBIO SyGreen® Mix amplifying a 122 bp fragment of the mouse ACTG gene. Efficiency was measured at 96% across the range tested. Results demonstrate that UltraScript® cDNA Synthesis Kit efficiently reverse transcribes RNA across a broad dynamic range of substrate.



Unbiased representation of transcript ends

UltraScript® cDNA Synthesis Kit was used to synthesise cDNA from mouse liver total RNA. Two primer pairs designed against the 5' (purple) and 3' (grey) ends of the (a) mouse CANX transcript (4.2 kb) and (b) the RNS18 gene (1.8 kb) were used in qPCRs with qPCRBIO SyGreen® Mix. A no RT control (blue) is shown as a negative control for each primer set.

Primer pairs up to 4 kb apart did not show any reverse transcription bias, as indicated by the overlapping amplification traces.

UltraScript® 2.0 Reverse Transcriptase & cDNA Synthesis Kits

UltraScript® 2.0 Reverse Transcriptase is an extremely thermostable, high-capacity reverse transcriptase engineered for superior cDNA synthesis from challenging RNA sample types. This enzyme is ideally suited for tough RNA templates.

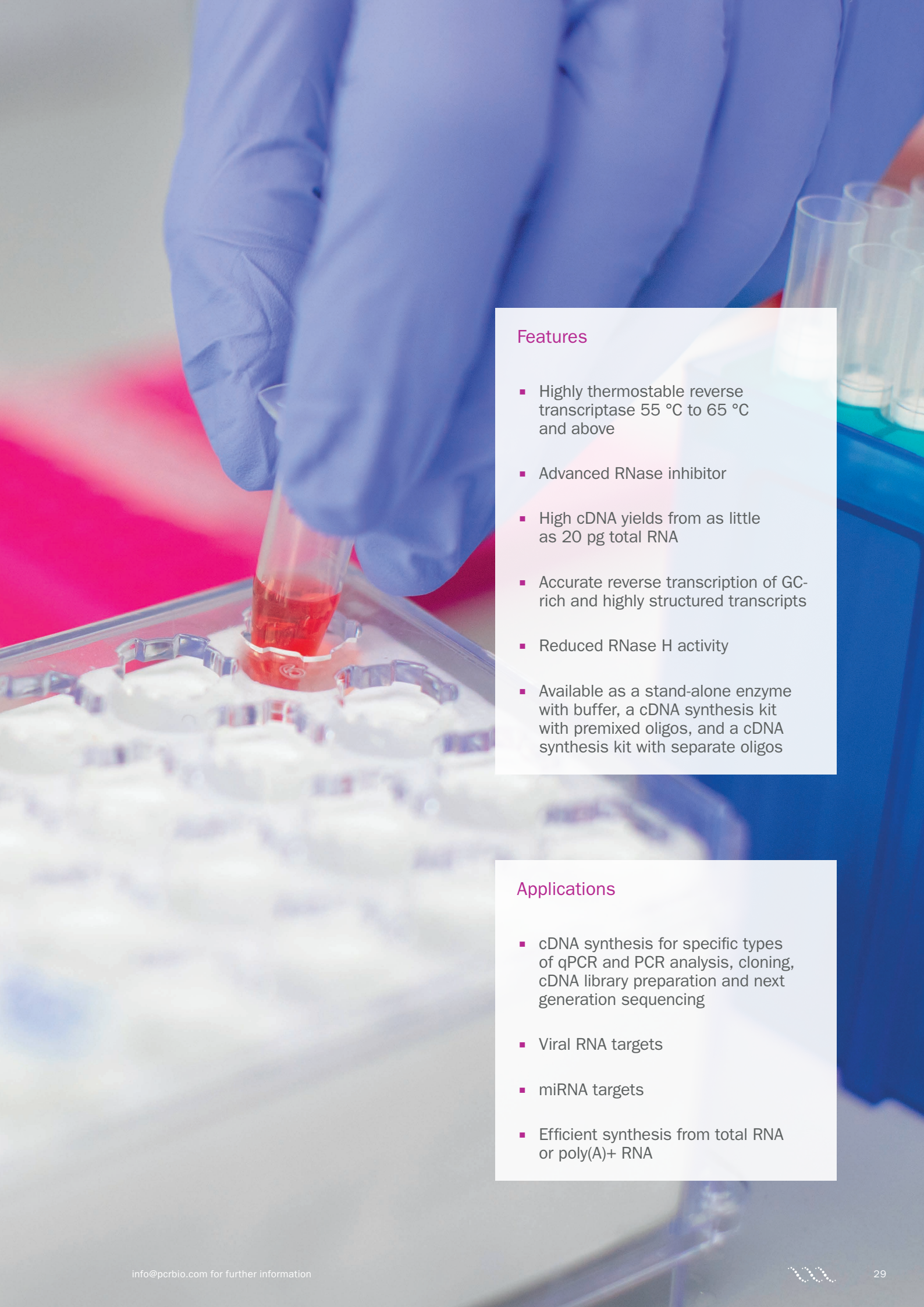
This modified MMLV reverse transcriptase can be used with reaction temperatures of over 55 °C, giving improved specificity and higher cDNA yields from tough RNA templates and high amounts of input RNA. The enzyme remains partially active even up to 90 °C. Because of this enhanced thermostability, this RTase enables efficient reverse transcription of the most difficult RNA targets, including GC-rich sequences and transcripts with stable secondary structures.

UltraScript® 2.0 Reverse Transcriptase enables efficient and reliable cDNA synthesis from a broad range of RNA concentrations and can be used with 20 pg to 3.5 µg total RNA or oligo(dT) purified mRNA. However, the mix is not a direct replacement for standard cDNA synthesis kits in most qPCR workflows.

The reverse transcriptase is available as a stand-alone enzyme with 5x buffer, and a cDNA synthesis kit with premixed anchored oligo(dT) and random hexamers optimised for downstream qPCR analysis. A cDNA synthesis kit with separate oligos is also available for user optimisation, depending on the type of analysis needed.

What our customers say...

> When it comes to difficult RNAs such as tRNAs, then Ultrascript® 2.0 produces superior results.



Features

- Highly thermostable reverse transcriptase 55 °C to 65 °C and above
- Advanced RNase inhibitor
- High cDNA yields from as little as 20 pg total RNA
- Accurate reverse transcription of GC-rich and highly structured transcripts
- Reduced RNase H activity
- Available as a stand-alone enzyme with buffer, a cDNA synthesis kit with premixed oligos, and a cDNA synthesis kit with separate oligos

Applications

- cDNA synthesis for specific types of qPCR and PCR analysis, cloning, cDNA library preparation and next generation sequencing
- Viral RNA targets
- miRNA targets
- Efficient synthesis from total RNA or poly(A)+ RNA

UltraScript® 2.0 Reverse Transcriptase

MORE INFO

This high-capacity, extremely thermostable reverse transcriptase is a special problem-solver enzyme suitable for cDNA synthesis in unique applications. However, it is not meant to replace UltraScript® Reverse Transcriptase in standard cDNA synthesis applications. This formulation is well suited for use with high amounts of RNA input and is also ideal for reverse transcription of RNA molecules with extremely stable secondary structure.

Units	Presentation	Catalogue No.
UltraScript 2.0 Reverse Transcriptase		
10000	[2x25 µL 200 U/µL] & [1x200 µL buffer]	PB30.33-01
40000	[2x100 µL 200 U/µL] & [4x200 µL buffer]	PB30.33-04

UltraScript® 2.0 cDNA Synthesis Kit

Designed for high-capacity reverse transcription with oligo(dT) and random hexamers blended in the reaction buffer. This kit is ideal for minimal pipetting and no need for optimisation of the priming strategy, regardless of the RNA input type.

Reactions (20 µL)	Presentation	Catalogue No.
UltraScript 2.0 cDNA Synthesis Kit		
25	[1x0.1 mL mix] & [1x0.025 mL RTase]	PB30.31-02
100	[4x0.1 mL mix] & [1x0.1 mL RTase]	PB30.31-10

UltraScript® 2.0 cDNA Synthesis Kit Separate-Oligos

Designed for high-capacity reverse transcription with oligo(dT) and random hexamers supplied separate to the reaction buffer. Users can choose which priming strategy they prefer and even optimise primer concentration for their specific reaction.

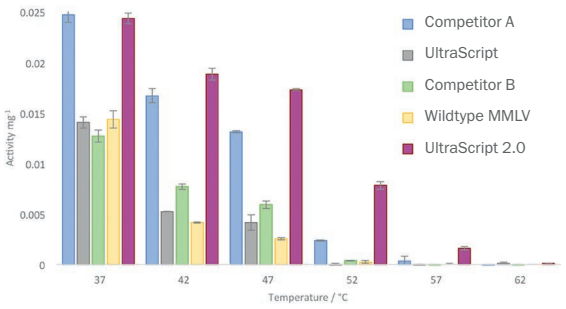
Reactions (20 µL)	Presentation	Catalogue No.
UltraScript 2.0 cDNA Synthesis Kit Separate-Oligos		
25	[1x0.1 mL mix] & [1x0.025 mL RTase] & [1x100 µL Anchored Oligo(dT)$_{18}$] & [1x100 µL Random Hexamers]	PB30.32-02
100	[4x0.1 mL mix] & [1x0.1 mL RTase] & [1x100 µL Anchored Oligo(dT)$_{18}$] & [1x100 µL Random Hexamers]	PB30.32-10

Scan the QR code for tips and tricks on your cDNA synthesis experiments

TIPS & TRICKS

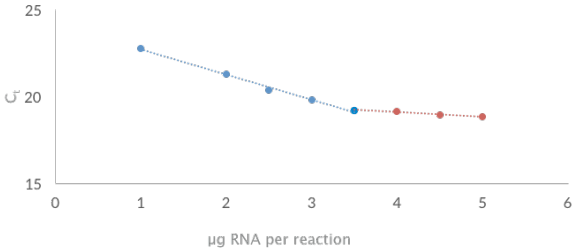
Higher specific activity at elevated temperatures

UltraScript® 2.0 Reverse Transcriptase maintains higher specific activity at elevated temperatures when compared to competing products and our original UltraScript® Reverse Transcriptase. Specific activity is measured at the given incubation temperatures using an RT-qPCR assay.



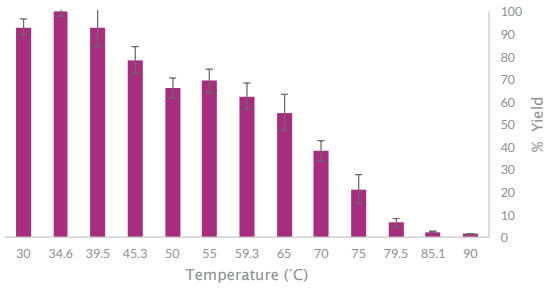
Increased upper limit of RNA per reaction

Mouse liver total RNA was reverse transcribed using UltraScript® 2.0 Reverse Transcriptase, followed by amplification of G-Act cDNA with qPCRBIO SyGreen® Mix. UltraScript® 2.0 Reverse Transcriptase can transcribe up to 3.5 µg of RNA while retaining a linear response.



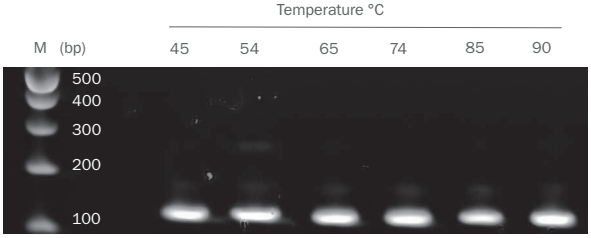
UltraScript® 2.0 remains partially active up to 90 °C

Mouse liver total RNA was reverse transcribed using UltraScript® 2.0 Reverse Transcriptase, followed by amplification of G-Act cDNA using qPCRBIO SyGreen® Mix. Up to 65 °C, UltraScript® 2.0 Reverse Transcriptase shows little change in yield (with ΔCt values within ± 1 Ct range), and remains partially active up to 90 °C.



UltraScript® 2.0 is a highly thermostable reverse transcriptase

UltraScript® 2.0 Reverse Transcriptase generates similar amounts of product across a wide range of temperatures in endpoint RT-PCR. Mouse reference RNA was reverse transcribed using UltraScript® 2.0 Reverse Transcriptase. G-Act cDNA was amplified using qPCRBIO SyGreen® Mix and visualised on EtBr 1% agarose gel.



Endpoint PCR

Enhanced polymerases Increased PCR success rates

PCRBIO Enzyme Selection Guide

	Endpoint polymerases								Endpoint kits	
	PCRBIO Taq DNA Polymerase	PCRBIO HS Taq DNA Polymerase	PCRBIO Classic Taq	PCRBIO Ultra Polymerase	PCRBIO HiFi Polymerase	VeriFi® Polymerase	VeriFi® Hot Start Polymerase	VeriFi® Library Amplification Mix	PCRBIO Rapid Extract PCR Kit	PCRBIO 1-Step Go RT-PCR Kit
Properties										
Maximum amplicon length	~6 kb	~6 kb	~6 kb	~6 kb	~10 kb	~20 kb	~20 kb	~20 kb	~6 kb	~6 kb
Fidelity vs Taq	x1	x1	x1	x3	x50	x100	x100	x100	x1	x1
3'→5' exonuclease (proofreading) activity				◊	◊	◊	◊	◊		
Hot start		◊		◊			◊	◊	◊	◊
High fidelity				◊	◊	◊	◊	◊		
Sensitivity	●●	●●●	●●	●●●	●●●	●●●●	●●●●	●●●●	●●●	●●●●
Specificity	●●	●●●	●●	●●●	●●●	●●●●	●●●●	●●●●	●●●	●●●
Stability at room temperature	●●●●	●●●●	●●●●	●●●	●●●●	●●●	●●●	●●●	●●●●	●●●●
Available formats										
Ready mix	◊	◊		◊		◊	◊	◊	◊	
Direct loading	◊	◊		◊		◊	◊		◊	
Applications										
Routine PCR	◊	◊	◊	◊					◊	
Long PCR				◊	◊	◊	◊	◊		
High-throughput		◊		◊			◊	◊	◊	
Multiplex PCR		◊		◊			◊	◊		
High fidelity PCR					◊	◊	◊	◊		
PCR from solid tissue		◊		◊			◊	◊	◊	
GC-rich templates		◊		◊	◊	◊	◊	◊		
Genotyping	◊	◊	◊						◊	◊
Bisulphite PCR	◊	◊		◊						
Methylated DNA	◊	◊	◊	◊	◊	◊	◊	◊	◊	◊
TA cloning	◊	◊	◊	◊					◊	◊
Blunt end cloning					◊	◊	◊	◊		
Colony PCR		◊		◊						
Crude sample PCR		◊		◊			◊	◊	◊	
Site directed mutagenesis					◊	◊	◊	◊		
Next generation sequencing					◊	◊	◊	◊		

◊ = Suitable for application

● = Relative activity

PCRBIO Taq DNA Polymerase & Mixes

MORE INFO

PCRBIO Taq DNA Polymerase is an affordable, versatile and robust enzyme for all your everyday PCR applications including genotyping, screening, and library construction.

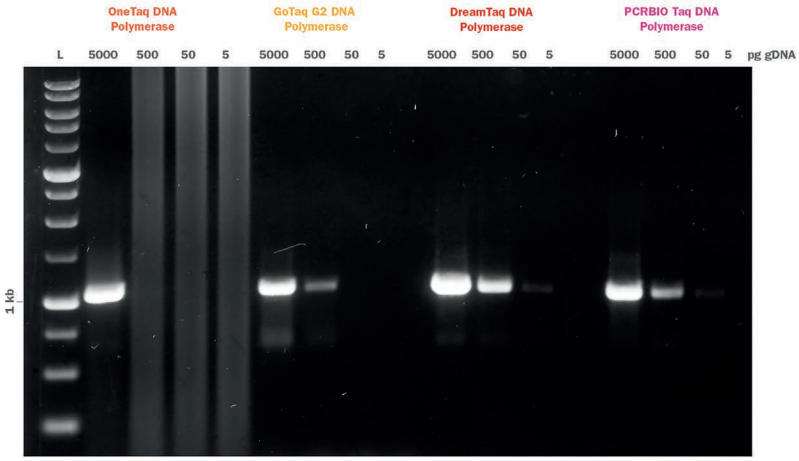
An enhanced 12-step purification strategy together with an optimised buffer system enable PCRBIO Taq DNA Polymerase to amplify with the highest speed, yield, and specificity on the market, ideal for complex templates such as mammalian genomic DNA.

Features

- Increased PCR success rates with amplicons up to 6 kb
- Ultra-low background DNA
- Advanced buffer chemistry including Mg and dNTP
- Efficient and specific amplification from GC and AT-rich sequences
- High yields under standard and fast PCR conditions

Applications

- Routine application PCR
- TA cloning
- High-throughput PCR
- Methylated DNA
- Crude sample PCR



PCRBIO Taq DNA Polymerase outperforms most competitors at amplifying a 1 kb fragment

PCR amplification of a 1 kb fragment of the GAPDH gene using a 1 in 10 serial dilution of mouse genomic DNA (5000, 500, 50 and 5 pg) with PCRBIO Taq DNA Polymerase (purple) and matching Taq polymerases from NEB (orange), Promega (yellow) and Thermo (red). Reactions were set up using master mix formats and following manufacturers' recommendations. Cycling conditions were 95 °C 2 min, then 40 cycles of 95 °C 15 sec, 63 °C 15 sec, 72 °C 30 sec. 1/5 of the reaction volume was loaded in 1% agarose gel. L: PCRBIO Ladder II. PCRBIO Taq DNA Polymerase outperforms NEB's OneTaq and Promega's GoTaq G2, and is similar to Thermo's DreamTaq.

PCRBIO Taq DNA Polymerase

This DNA polymerase is ideal for standard routine PCR in any molecular biology lab. In this formulation the polymerase and reaction buffer are supplied in separate tubes, with dNTPs and Mg in the buffer.

Units	Presentation	Catalogue No.
PCRBIO Taq DNA Polymerase		
500	[1x0.1 mL 5 U/µL] & [4x mL buffer]	PB10.11-05
2000	[4x0.1 mL 5 U/µL] & [16x1 mL buffer]	PB10.11-20
4000	[8x0.1 mL 5 U/µL] & [32x1 mL buffer]	PB10.11-40

PCRBIO Taq Mix

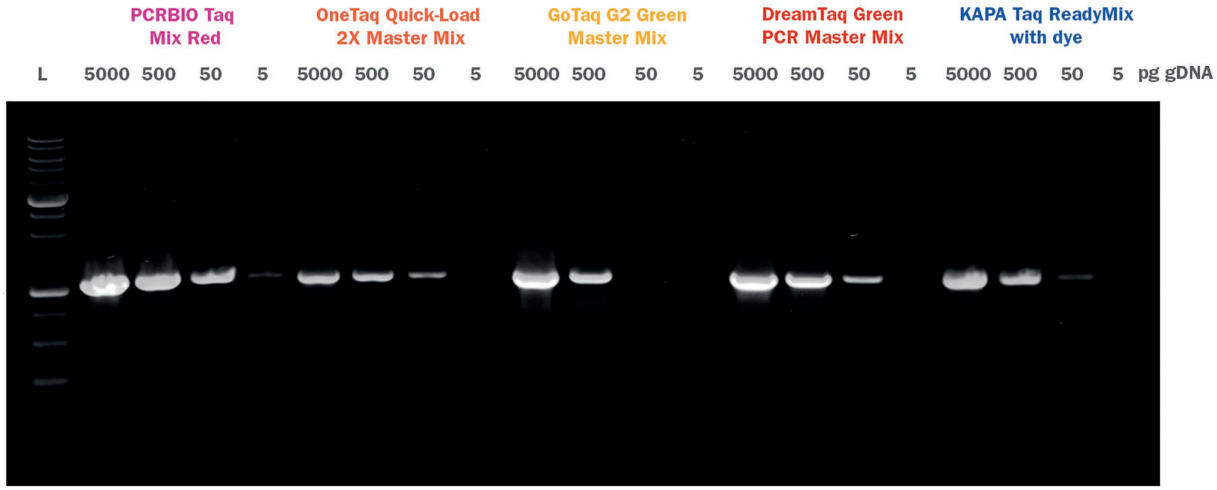
Designed for reduced pipetting, this 2x ready mix contains Taq DNA polymerase, dNTPs, Mg, and reaction buffer in one tube. Ideal for high throughput with reduced errors.

Reactions (50 µL)	Presentation	Catalogue No.
PCRBIO Taq Mix		
200	5x1 mL	PB10.12-02
1000	5x(5x1 mL)	PB10.12-10

PCRBIO Taq Mix Red

This 2x ready mix contains Taq DNA polymerase, dNTPs, Mg, reaction buffer, and an inert red dye in one tube. The red dye is suitable for direct sample loading on gels and mastermix visualisation.

Reactions (50 µL)	Presentation	Catalogue No.
PCRBIO Taq Mix Red		
200	5x1 mL	PB10.13-02
1000	5x(5x1 mL)	PB10.13-10



PCRBIO Taq Mix Red outperforms competitors at amplifying a 1 kb fragment

A PCR amplification of a 1 kb fragment (GAPDH gene) was carried out using a 1 in 10 serial dilution of mouse genomic DNA (5000, 500, 50, 5 pg) with PCRBIO Taq Mix Red and matching Taq mixes from competitors NEB (orange), Promega (yellow), Thermo (red) and Kapa Biosystems (blue). Reactions were set up using manufacturers' recommendations. Cycling conditions were 95 °C 2 min, then 40 cycles of 95 °C 15 sec, 63 °C 15 sec, 72 °C 30 sec except for NEB: 94 °C 2 min, then 40 cycles of 94 °C 15 sec, 63 °C 15 sec, 68 °C 30 sec. L: PCRBIO Ladder II.

PCRBIO HS Taq DNA Polymerase & Mixes

MORE INFO

PCRBIO HS Taq DNA Polymerase is an advanced antibody-mediated hot start DNA polymerase designed for fast, highly specific PCR.

Proprietary antibodies inhibit polymerase activity until an initial activation step at 95 °C, preventing the formation of primer dimers and non-specific products, giving improved specificity and sensitivity compared to other methods. The enzyme and buffer system allow for superior PCR performance on complex templates such as mammalian genomic DNA. Whether you need a hot start assay for high throughput, automated reaction setup or the detection of a low copy number template, PCR Biosystems offers you a robust industry-leading enzyme to meet your needs.

Features

- Hot start technology for unrivalled detection of low copy number templates
- Increased PCR success rates with amplicons up to 6 kb
- Ultra-low background DNA
- Advanced buffer chemistry including Mg and dNTP
- Efficient and specific amplification from GC and AT-rich sequences
- High yields under standard and fast PCR conditions

Applications

- Genotyping
- High-throughput PCR
- Standard and fast PCR
- Routine and multiplex PCR
- TA cloning
- Colony PCR
- Inhibitor tolerant PCR direct from bacterial culture, blood and urine
- ‘Difficult’ PCR - GC and AT-rich DNA

Sensitive amplification down to 5pg of target template

PCR amplification of a 1 kb fragment (GAPDH gene) was carried out using a 1 in 10 serial dilution of mouse genomic DNA (5000, 500, 50 and 5 pg) with PCRBIO HS Taq DNA Polymerase (purple) and matching hot start Taq polymerases from competitors. Reactions were set up using master mix formats and following manufacturers’ recommendations: NEB (orange), Promega (yellow) and Thermo (red). Cycling conditions were 95 °C 2 min, then 40 cycles of 95 °C 15 sec, 63 °C 15 sec, 72 °C 30 sec. 1/5 of the reaction volume was loaded in 1% agarose gel. L: PCRBIO Ladder II. PCRBIO Taq DNA Polymerase matches or outperforms the competitor products tested.

PCRBIO HS Taq DNA Polymerase

Standard DNA polymerase with powerful antibody-mediated hot start for increased specificity, sensitivity, and room temperature reaction setup. The enzyme and reaction buffer are provided in separate tubes.

Units	Presentation	Catalogue No.
PCRBIO HS Taq DNA Polymerase		
250	[1x0.05 mL 5 U/µL] & [2x1 mL buffer]	PB10.21-02
1000	[4x0.05 mL 5 U/µL] & [8x1 mL buffer]	PB10.21-10
5000	[20x0.05 mL 5 U/µL] & [40x1 mL buffer]	PB10.21-50

PCRBIO HS Taq Mix

This 2x ready mix contains hot start DNA polymerase, dNTPs, Mg, and reaction buffer in one tube. Ideal for high throughput with reduced errors and strict specificity

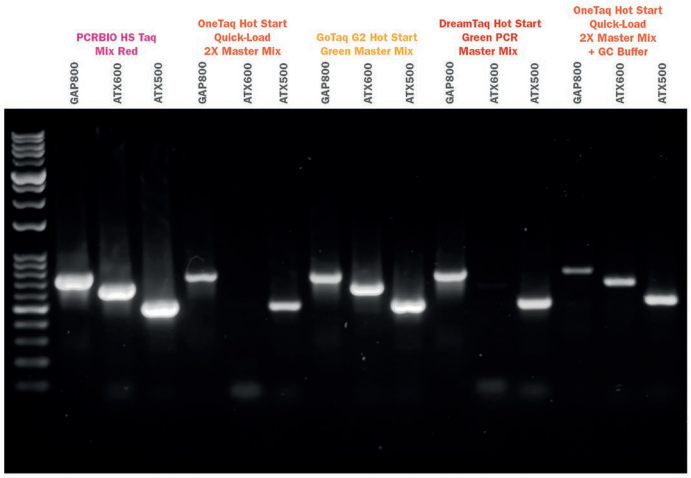
UNG mixes coming soon!

Reactions (50 µL)	Presentation	Catalogue No.
PCRBIO HS Taq Mix		
200	5x1 mL	PB10.22-02
1000	5x(5x1 mL)	PB10.22-10

PCRBIO HS Taq Mix Red

Perfect for direct gel loading, this version of the 2x hot start ready mix contains all reagents needed for PCR, along with an inert red dye for easy tracking.

Reactions (50 µL)	Presentation	Catalogue No.
PCRBIO HS Taq Mix Red		
200	5x1 mL	PB10.23-02
1000	5x(5x1 mL)	PB10.23-10



PCRBIO HS Taq Red Mix outperforms competitors at amplifying GC-rich fragments

The starting template amount was 5 ng mouse genomic DNA. Amplified fragments belong to 3 different genes chosen for their GC content (GAP800 bp with 49% GC, ATX500 bp with 69% GC and ATX600 bp with 71% GC). PCRBIO HS Taq Mix Red (purple) and matching hot start Taq mixes from competitors were used according to manufacturers' recommendations: NEB (orange, standard format and GC buffer format), Promega (yellow) and Thermo (red). Cycling conditions were 95 °C 5 min, then 40 cycles of 95 °C 15 sec, 60 °C 15 sec, 72 °C 20 sec. 2/5 of the reaction volume was loaded in 1.2% agarose gel. L: PCRBIO Ladder III.

VeriFi® Polymerase & Mixes: A PCR game changer

The VeriFi® family is a versatile and robust high fidelity product range engineered for all PCR applications where greater sequence accuracy is required. Enhanced processivity combined with advanced buffer chemistry give significant improvements in speed, yield and sensitivity, while also increasing PCR success rates of long and challenging templates.

VeriFi® Polymerase and mixes are derived from Pfu DNA polymerase for its 3'-5' exonuclease proofreading activity. The enzyme is engineered with proprietary mutations that significantly increase processivity, resulting in shorter extension times (10-30 s/kb), higher yields and the amplification of longer and more difficult targets.

High temperature cycling and the ability to denature up to 100 °C mean that even GC-rich templates can be amplified.

The high accuracy and enhanced 3'-5' exonuclease activity of VeriFi® Polymerase result in extremely low error rates and fidelity that is approximately 100 times higher than Taq DNA polymerase.

What our customers say...

> Had great results with VeriFi® Mix for the two longest genes we work with that are the most problematic (DRB1 and DPB1). It's great to have something higher fidelity and fast. Plus things seem to work well at low annealing temps so less time and lower temp hopefully means less DNA damage!

Senior Post-Doctoral Research Scientist

Features

- High temperature cycling - up to 100 °C denaturation
- Efficient and specific amplification from challenging templates including GC and AT-rich sequences
- Increased PCR success rates with complex genomic templates (17.5 kb and over)
- High yields under standard and fast PCR conditions (10-30 s/kb)
- 100x higher fidelity than Taq DNA polymerase
- Advanced buffer chemistry including Mg and dNTPs
- Generates blunt-end PCR products
- Also available as a 2x ready mix, with or without a red dye for direct gel loading

Applications

- High fidelity PCR
- Next Generation Sequencing
- Long range PCR
- Site-directed mutagenesis
- Cloning

VeriFi® Polymerase

MORE INFO

For cutting-edge proofreading performance, where you still want flexibility during setup. In this formulation, VeriFi® Polymerase, reaction buffer and enhancer are supplied in separate tubes.

Units	Presentation	Catalogue No.
VeriFi Polymerase		
100	[1x0.05 mL 2 U/µL] & [1x1.7 mL buffer] & [1x1.7 mL enhancer]	PB10.42-01
500	[1x0.250 mL 2 U/µL] & [3x1.7 mL buffer] & [2x1.7 mL enhancer]	PB10.42-05

VeriFi® Mix

This 2x ready mix contains VeriFi® Polymerase, dNTPs, Mg, and buffer in a reaction-ready formulation. Minimal pipetting is required for setup, making workflows faster and reducing the chance of handling errors.

Reactions (50 µL)	Presentation	Catalogue No.
VeriFi Mix Red		
100	2x1.25 mL	PB10.43-01
500	2x(5x1.25 mL)	PB10.43-05

VeriFi® Mix Red

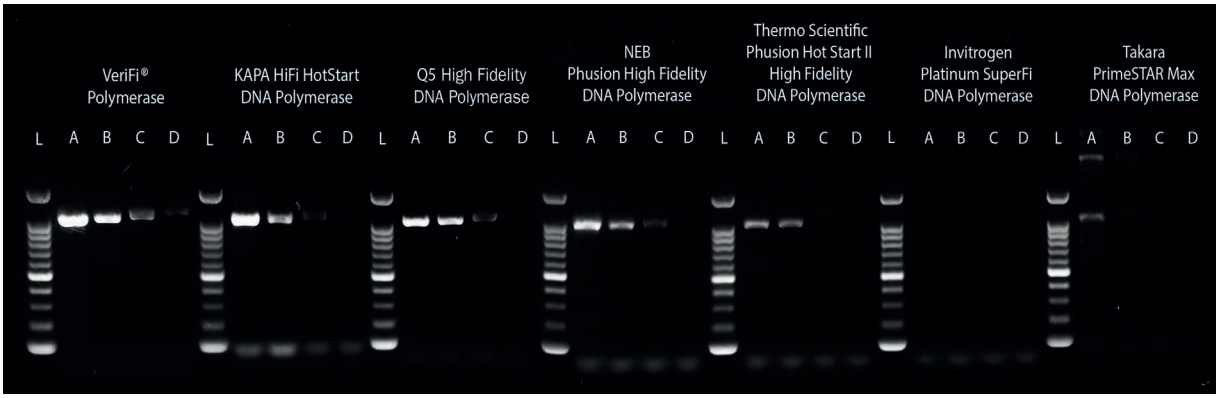
For direct gel loading after PCR, a 2x VeriFi® Mix with an inert red dye that enables mastermix visualisation during reaction setup in plates and high-throughput workflows and gel tracking.

Reactions (50 µL)	Presentation	Catalogue No.
VeriFi Mix Red		
100	2x1.25 mL	PB10.44-01
500	2x(5x1.25 mL)	PB10.44-05

What the experts say...

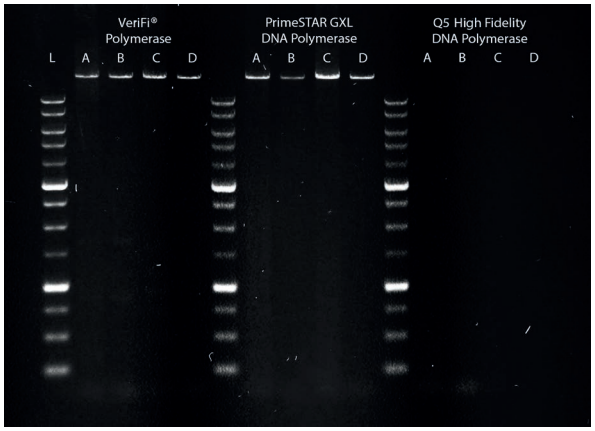
> Verifi® Red Mix has been brilliant, solid reproducible results time after time. Would thoroughly recommend it to others and will continue to use it in the future!

Senior Post-Doctoral Research Scientist



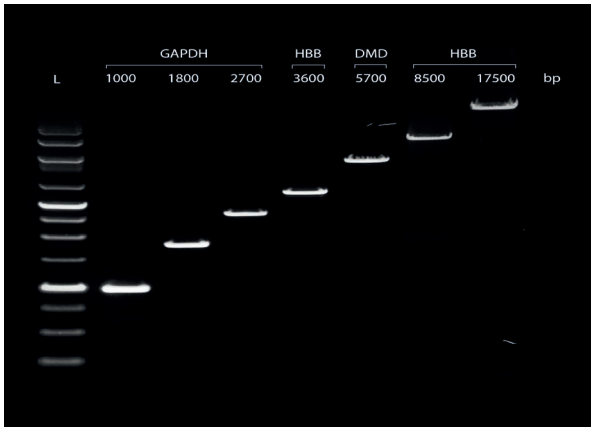
VeriFi® Polymerase amplifies targets with high sensitivity and specificity compared to leading competitors

Amplification of a 1.0 kb fragment of the GAPDH gene with different starting template amounts of mouse genomic DNA. A: 20 ng, B: 3.2 ng, C: 0.5 ng, D: 0.08 ng. GC content is 51%. L: PCRBIO Ladder IV. The reactions were set up following manufacturers' recommendations. Cycling conditions were 95°C 2 min, then 30 cycles of 98 °C 15 sec, 66 °C 15 sec and 72 °C 30 sec. VeriFi® Polymerase displays greater sensitivity and specificity compared to leading competitors.



Increased success rates with complex templates

Amplification of a 17.5 kb fragment of the HBB gene. The starting template amount is 150 ng (A and C) and 30 ng (B and D) of human genomic DNA, diluted 2 fold. A 2-step PCR protocol was used with amplification at 72 °C (A and B) or 68 °C (C and D). GC content is 37%. VeriFi® Polymerase amplifies long fragments with yields comparable to Takara PrimeSTAR GXL DNA Polymerase. L: PCRBIO Ladder II.



Versatility across a broad range of amplicon lengths

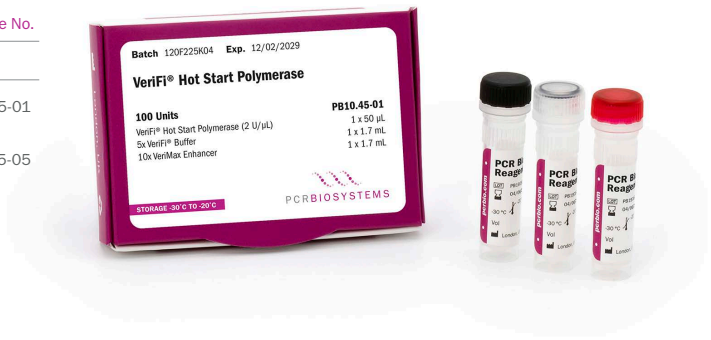
VeriFi® Hot Start Polymerase was used to amplify a broad range of fragment lengths with high yield and specificity. The genes amplified were mouse GAPDH (1000, 1800, 2700 bp), human β-globin (3600 and 17500 bp), mouse tumour antigen p53 isoform B (580 0 bp) and mouse myosin heavy polypeptide 6 (8000 bp). The starting template amount is 5-30 ng of mouse or human genomic DNA. GC content ranges from 37-55%. Cycling conditions were 95 °C 2 min, then 30 cycles of 95 °C 15 sec, 63 °C 15 sec, 72 °C 30 sec/kb. L: PCRBIO Ladder II. VeriFi® Hot Start Polymerase shows versatility across a broad range of amplicon lengths.

VeriFi® Hot Start Polymerase

MORE INFO

For cutting-edge proofreading performance with Aptalock™ reversible hot start technology. In this formulation, VeriFi® Polymerase, reaction buffer, and VeriMax enhancer are supplied in separate tubes, where you want flexibility during setup.

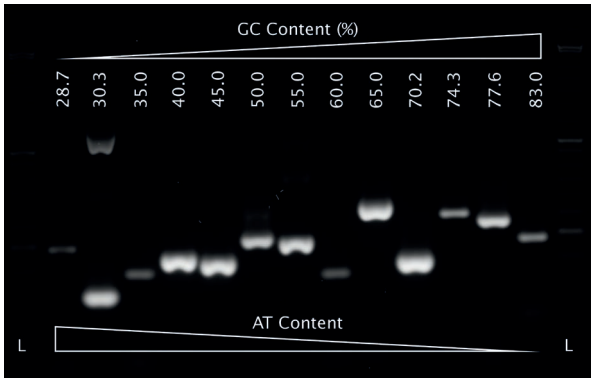
Units	Presentation	Catalogue No.
VeriFi Hot Start Polymerase		
100	[1x0.05 mL 2 U/µL] & [1x1.7 mL buffer] & [1x1.7 mL enhancer]	PB10.45-01
500	[1x0.250 mL 2 U/µL] & [3x1.7 mL buffer] & [2x1.7 mL enhancer]	PB10.45-05



VeriFi® Hot Start Mix

This 2x ready mix contains VeriFi® Hot Start Polymerase, dNTPs, Mg, VeriMax enhancer, buffer in a reaction-ready formulation. Minimal pipetting required for setup, making workflows faster and reducing the chance of handling errors.

Reactions (50 µL)	Presentation	Catalogue No.
VeriFi Hot Start Mix		
100	2x1.25 mL	PB10.46-01
500	2x(5x1.25 mL)	PB10.46-05



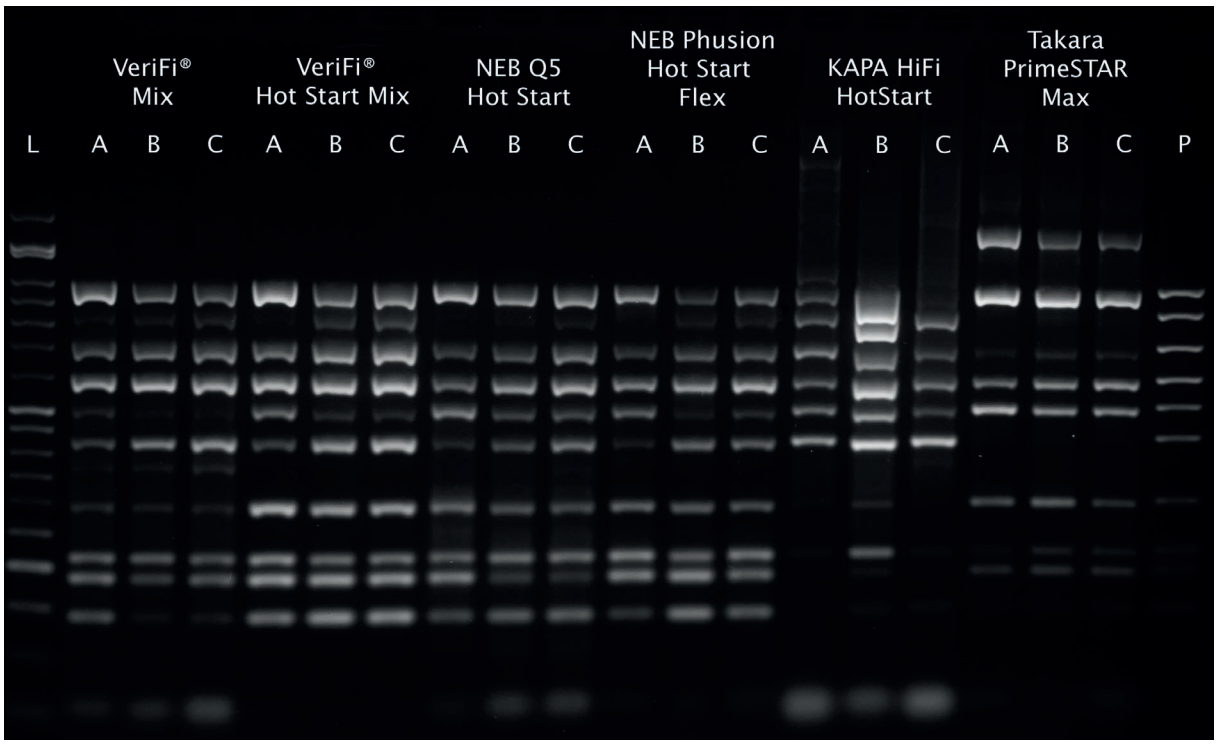
Successful PCR across a broad range of GC and AT content

Amplification of 13 targets with GC content ranging from 28.7% to 83% VeriFi® Hot Start Mix. The starting template amount is 30 ng mouse cDNA. Band size is between 99 bp and 274 bp. Cycling conditions were 98 °C 5 min, 40 cycles of 98 °C 15 sec, annealing between 54 °C and 62 °C (depending on target) 15 sec, 72 °C 30 sec. L: PCRBIO Ladder III. VeriFi® Hot Start Mix is able to amplify templates across a broad range of GC and AT content.

VeriFi® Hot Start Mix Red

A red, 2x hot start ready mix for direct gel loading after PCR. This formulation contains VeriFi® Hot Start Polymerase, dNTPs, Mg, VeriMax enhancer, buffer, and an inert red dye in a reaction-ready formulation. The dye is suitable for sample tracking in gels and enables mastermix visualisation during reaction setup in plates and high-throughput workflows.

Reactions (50 µL)	Presentation	Catalogue No.
VeriFi Hot Start Mix Red		
100	2x1.25 mL	PB10.47-01
500	2x(5x1.25 mL)	PB10.47-05



Superior performance in multiplex reactions

10-plex PCR using lambda phage genome (6 targets) and mouse genome (4 targets) at different annealing temperatures (A: 63.0 °C, B: 61.5 °C, C: 60.5 °C). The starting template amount is 1 pg lambda DNA and 1 ng mouse gDNA. Amplicon lengths are between 139 bp and 962 bp. Reactions were set up using master mix formats following manufacturers' recommendations. Cycling conditions were 95 °C 2 min, 40 cycles of 95°C 15 sec, annealing A to C 30 sec, 72 °C 90 sec. L: PCRBIO Ladder III. P: reference pool of single products. VeriFi® Hot Start Mix displays greater sensitivity and specificity in multiplex when compared to leading competitors.

What our customers say...

"Ran a lot of PCRs on some large high-GC products and VeriFi® Hot Start has been the most consistent. Very pleased with the product."

PhD Student, University of Manchester

PCRBIO Ultra Polymerase & Mixes

MORE INFO

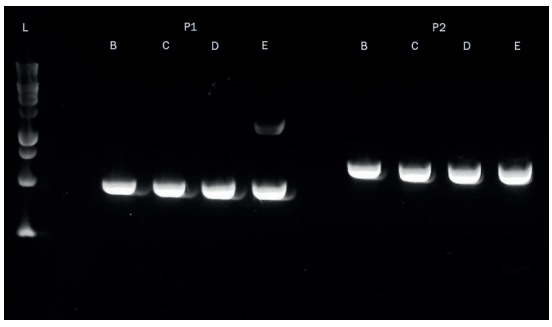
PCRBIO Ultra Polymerase has been engineered for the amplification of extremely difficult templates. Proprietary modifications that enhance processivity together with advanced buffer chemistry and hot start technology deliver outstanding performance whether your template is GC rich, low in abundance or contains PCR inhibitors.

Features

- Increased PCR success rates with difficult templates
- Antibody-mediated hot start for unrivalled detection of low copy number templates
- Advanced buffer chemistry including Mg and dNTPs
- High yields under standard and fast PCR conditions
- Efficient specific amplification from GC rich templates (up to 80% GC)
- 3 fold higher fidelity than Taq

Applications

- Colony PCR
- Crude sample PCR
- TA cloning
- GC/AT rich target amplification



GC-rich products visualised on agarose gel

Amplification of 0.5 kb (P1) and 0.6 kb (P2) fragments of the ATXN2 gene with GC contents of 69% and 71% respectively, using 20 ng of mouse genomic DNA as template and a range of annealing temperatures from 67 °C to 60 °C (B-E). PCRBIO Ultra Polymerase efficiently amplifies GC rich templates >65% GC and is recommended for templates up to 80% GC.

PCRBIO Ultra Polymerase

Reaction buffer and PCRBIO Ultra Polymerase supplied in separate tubes for flexible assay setup.

Units	Presentation	Catalogue No.
PCRBIO Ultra Polymerase		
250	[1x0.05 mL 5 U/µL] & [2x1 mL buffer]	PB10.31-02
1000	[4x0.05 mL 5 U/µL] & [8x1 mL buffer]	PB10.31-10

PCRBIO Ultra Mix

2x reaction-ready mix containing polymerase and reaction buffer in a single tube, for fast reaction setup.

Reactions (50 µL)	Presentation	Catalogue No.
PCRBIO Ultra Mix		
80	2x1 mL	PB10.32-01
400	5x(2x1 mL)	PB10.32-05

PCRBIO Ultra Mix Red

2x reaction-ready mix containing polymerase and reaction buffer, plus an inert red dye for direct gel loading.

Reactions (50 µL)	Presentation	Catalogue No.
PCRBIO Ultra Mix Red		
80	2x1 mL	PB10.33-01
400	5x(2x1 mL)	PB10.33-05

PCRBIO HiFi Polymerase

PCRBIO HiFi Polymerase is a versatile and cost effective high fidelity enzyme possessing 3'-5' exonuclease proofreading activity.

MORE INFO

Features

- Derived from Pfu DNA Polymerase
- 50x higher fidelity than Taq DNA polymerase
- Increased success rates with amplicons < 10 kb
- Advanced buffer chemistry including Mg and dNTPs
- High yields under standard and fast PCR conditions

Applications

- High fidelity PCR
- Site directed mutagenesis
- Blunt end cloning
- Long range PCR

Units	Presentation	Catalogue No.
PCRBIO HiFi Polymerase		
200	[1x0.1 mL 2 U/µL] & [3x1 mL buffer]	PB10.41-02
1000	[5x0.1 mL 2 U/µL] & [15x1 mL buffer]	PB10.41-10

PCRBIO Classic Taq

PCRBIO Classic Taq is a highly purified recombinant Taq DNA polymerase for all your everyday PCR applications. The polymerase and a 10x reaction buffer, without dNTPs, are supplied in separate tubes.

MORE INFO

Features

- Increased PCR success rates with amplicons up to 6 kb
- High yields under standard and fast PCR conditions
- Efficient specific amplification from complex templates including GC and AT-rich sequences
- 10x buffer includes $MgCl_2$ and enhancers

Applications

- Standard PCR
- TA cloning
- Genotyping & screening

Units	Presentation	Catalogue No.
PCRBIO Classic Taq		
1000	[2x0.1 mL 5 U/µL] & [4x1 mL buffer]	PB10.15-01
2000	[4x0.1 mL 5 U/µL] & [8x1 mL buffer]	PB10.15-02
6000	[12x0.1 mL 5 U/µL] & [24x1 mL buffer]	PB10.15-06

PCRBIO 1-Step Go RT-PCR Kit

Red Mix coming soon!

This easy-to-use kit is designed for fast and efficient cDNA synthesis and PCR in a single tube. The advanced buffer system, RTase and hot start polymerase give highly specific and ultra-sensitive 1-step RT-PCR from any RNA template.

MORE INFO

Features

- Thermostable reverse transcription 45 °C to 55 °C
- High yields under standard and fast PCR conditions
- Efficient specific amplification from complex templates including GC and AT-rich sequences

Reactions (50 µL)	Presentation	Catalogue No.
PCRBIO 1-Step Go RT-PCR Kit		
50	[1x1.25 mL mix] & [1x125 µL RTase Go]	PB10.53-05
100	[2x1.25 mL mix] & [2x125 µL RTase Go]	PB10.53-10
500	[10x1.25 mL mix] & [10x125 µL RTase Go]	PB10.53-50

Accessory Products

Dyes Buffers Water

Scan the code for a comprehensive performance overview of PCRBIO DNA Markers

APPLICATION NOTE

PCRBIO DNA Markers

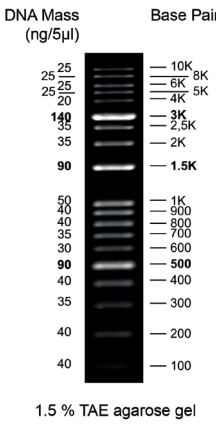
PCRBIO Ladders I-IV are designed for easy size determination and DNA quantification using agarose gel electrophoresis. The ladders are room temperature stable and ready for immediate gel loading.

MORE INFO

Features

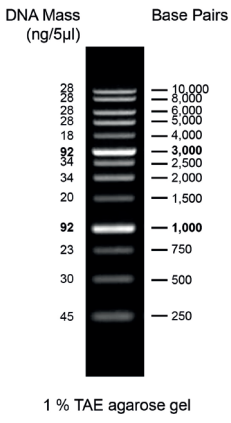
- Ready to use – load straight onto your gel
- Room temperature stable – store at 25 °C
- Quantitative – helps to visualise PCR yield
- Wide range – 50 bp to 10 kb
- Evenly spaced bands
- Easy to identify reference bands

Lanes	Presentation	Catalogue No.
PCRBIO Ladder I (100 bp - 10 kb)		
100	[1x0.5 mL ladder] & [1x0.4 mL loading buffer]	PB40.11-01
500	[5x0.5 mL ladder] & [1x2.0 mL loading buffer]	PB40.11-05
PCRBIO Ladder II (250 bp - 10 kb)		
100	[1x0.5 mL ladder] & [1x0.4 mL loading buffer]	PB40.12-01
500	[5x0.5 mL ladder] & [1x2.0 mL loading buffer]	PB40.12-05
PCRBIO Ladder III (50 bp - 1500 bp)		
100	[1x0.5 mL ladder] & [1x0.4 mL loading buffer]	PB40.13-01
500	[5x0.5 mL ladder] & [1x2.0 mL loading buffer]	PB40.13-05
PCRBIO Ladder IV (100 bp - 1500 bp)		
100	[1x0.5 mL ladder] & [1x0.4 mL loading buffer]	PB40.14-01
500	[5x0.5 mL ladder] & [1x2.0 mL loading buffer]	PB40.14-05



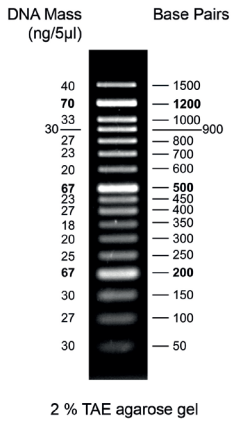
1.5 % TAE agarose gel

PCRBIO Ladder I



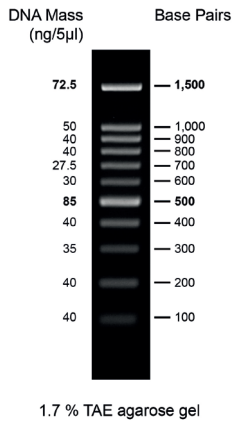
1 % TAE agarose gel

PCRBIO Ladder II



2 % TAE agarose gel

PCRBIO Ladder III



1.7 % TAE agarose gel

PCRBIO Ladder IV

PCRBIO dNTP Mix

MORE INFO

PCRBIO dNTP Mix contains premixed aqueous solutions of dATP, dCTP, dGTP and dTTP available at a final concentration of 10 mM each or 25 mM each.

The mix is ultra pure (more than 99%), stable after multiple freeze-thaw cycles and perfect for a wide variety of applications. 95% of dNTPs remain in triphosphate form after 5 weeks at room temperature.

Volume (mL)	Presentation	Catalogue No.
PCRBIO dNTP Mix 25 mM each (100 mM total)		
0.5	1x0.5 mL	PB10.72-05
1	1x1 mL	PB10.72-10
PCRBIO dNTP Mix 10 mM each (40 mM total)		
0.5	1x0.5 mL	PB10.71-05
1	1x1 mL	PB10.71-10

Features

- Ultra pure
- Stable
- Versatile

Applications

- Standard PCR
- Real-time PCR
- High fidelity PCR
- 1-step PCR
- Isothermal amplification
- DNA sequencing

PCR Water

MORE INFO

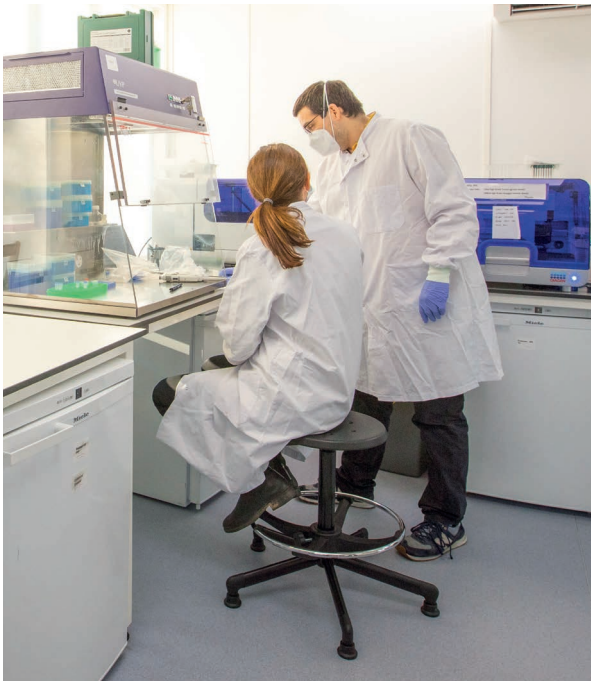
Ultra-pure DNase, RNase, protease and DNA-free water, suitable for making up reaction volumes of PCR and other molecular biology reactions, or simply for sample dilution.

Volume (mL)	Presentation	Catalogue No.
PCR Water		
5	5x1 mL	PB40.40-05
5	1x5 mL Bottle	PB40.40-06
50	1x50 mL Bottle	PB40.40-50
50	50x1 mL	PB40.40-51

Nuclease-Free Water

Suitable for sample dilution and use as an ultra-pure diluent for PCRs and other molecular biology reactions. Guaranteed free of nucleases.

Volume (mL)	Presentation	Catalogue No.
Nuclease-Free Water		
100	1x100 mL Bottle	PB40.41-100
500	1x500 mL Bottle	PB40.41-500



Magnesium Chloride Solution

MORE INFO

Optimised for PCR reactions, our Magnesium Chloride Solution ensures consistent and efficient amplification in standard and multiplex PCR applications.

It is supplied in a ready-to-use format and can enhance enzyme activity and amplification specificity as a required co-factor of DNA-manipulating enzymes, including DNA polymerases. This 50 mM solution is intended for optimisation of the Mg2+ ion concentration in PCR and qPCR reactions.

Volume (mL)	Presentation	Catalogue No.
50 mM $MgCl_2$		
6	4x1.5 mL	PB40.21-06

ROX Additive Solution

Enables precise real-time PCR data normalisation. Our ROX additive is a stabilised conjugate of 5-carboxy-X-rhodamine ester used as a passive reference dye to normalise fluorescent signal and correct for well-to-well variation in real time qPCR.

The dye is supplied at a 50 µM concentration that can be used as a 100x stock solution for instuments requiring high ROX concentration (500 nM) and as a 1000x stock for instruments requiring a low ROX concentration (50 nM).

Volume (µL)	Presentation	Catalogue No.
50 µM ROX Additive		
200	1x200 µL	PB40.51-01

Gel Loading Buffer

Our Gel Loading Buffer facilitates accurate and efficient DNA/RNA sample visualisation in electrophoresis workflows.

Volume (mL)	Presentation	Catalogue No.
Sample Loading Buffer		
1	1x1 mL	PB40.61-01
5	5x1 mL	PB40.61-05

This buffer contains xylene cyanol, bormophenol blue and glycerol for sharp band visualisation and retains nucleic acids in wells when setting up electrophoresis experiments. It is suitable for both agarose and polyacrylamide gels and can be used with all PCR Biosystems endpoint reagents and standard PCR products from other suppliers that do not already contain a gel loading dye.

The two tracking dyes migrate at approximately 150 bp and 800 bp on a 2% TAE agarose gel or at approximately 500 bp and 4,000 bp on a 1% TAE agarose gel.

DNA Extraction

Column-free Convenient Fast

PCRBIO Rapid Extract Kits

Eliminate the need for time-consuming DNA extraction methods with our rapid and easy-to-use column-free extraction kits. When moving straight to PCR, our integrated extraction and amplification kit offers a streamlined workflow for powerful results.

PCRBIO Rapid Extract Kits are particularly suited to solid tissue such as mouse tail cliping. Sample processing is simplified and contamination risks minimised as DNA extraction is performed in a single tube, removing the need for multiple washing steps.

Features

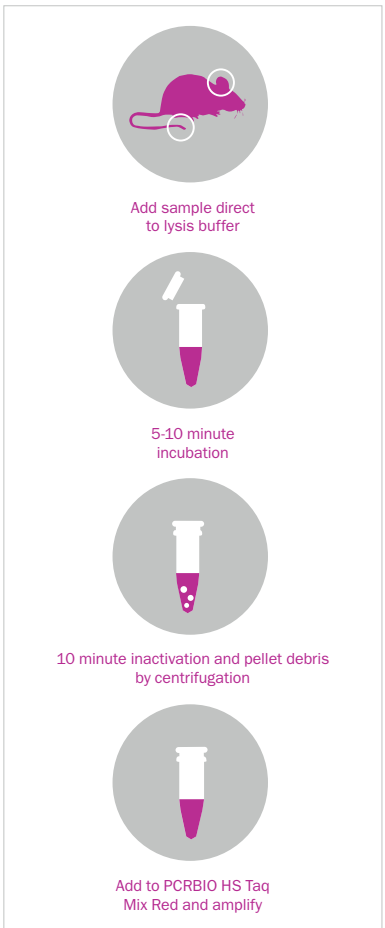
- Rapid, convenient, single-tube DNA extraction
- Produces high yield, PCR-ready DNA in 15 minutes
- Powered by PCRBIO HS Taq Mix Red for direct gel loading
- Ideal for complex templates
- Also available as a lysis-only kit

Sample types

- Mouse tail clip and ear punch
- Animal tissue
- Hair follicle
- Buccal swab
- Mammalian blood
- FFPE tissue

Applications

- Genotyping
- Transgene detection
- Knockout analysis
- Sequencing



PCRBIO Rapid Extract PCR Kit

Fast, column-free, two-step DNA extraction for genotyping and sample screening. This kit contains 2x PCRBIO HS Taq Mix Red and two extraction solutions in separate tubes for streamlined sample-to-result workflows.

MORE INFO

Reactions (50 µL)	Presentation	Catalogue No.
PCRBIO Rapid Extract PCR Kit		
80	[2 x 1 mL mix] & [1 x 1.6 mL buffer A] & [1 x 0.8 mL buffer B]	PB10.24-08
400	[10 x 1 mL mix] & [5 x 1.6 mL buffer A] & [5 x 0.8 mL buffer B]	PB10.24-40

PCRBIO Rapid Extract Lysis Kit

Fast, column-free, two-step DNA extraction for genotyping and sample screening. Two extraction solutions provided in separate tubes, perfect for high throughput extraction. No polymerase is supplied with this kit.

MORE INFO

Extractions (100 µL)	Presentation	Catalogue No.
PCRBIO Rapid Extract Lysis Kit		
80	[1x1.6 mL buffer A] & [1x0.8 mL buffer B]	PB15.11-08
240	[3x1.6 mL buffer A] & [3x0.8 mL buffer B]	PB15.11-24

Isothermal Amplification

High yield Versatile Fast

IsoFast® Bst Polymerases & Mixes

IsoFast® Bst Polymerase is a recombinant form of the large fragment of Bst DNA polymerase containing strand-displacing 5’-3’ polymerase activity. The enzyme offers fast amplification and strong strand displacement capabilities, making it ideal for nucleic acid amplification methods such as isothermal amplification.

Strand displacement refers to the ability of an enzyme to dissociate the hydrogen bonding of double stranded template DNA as the polymerase moves along it, essentially unzipping the DNA as the complementary strand is synthesised. The IsoFast® Bst range utilises this enzyme's strong strand displacement activity to enable amplification at a fixed temperature, without the need for thermocycling.

Features

- Has strand-displacing 5'-3' polymerase activity
- Lacks 5'-3' exonuclease activity
- DNA synthesis is performed at a constant temperature
- Operates over a broad temperature range, with an optimum of 65 °C
- Gives rapid and consistent amplification across a wide range of templates
- Supplied in flexible formats for DNA and RNA detection
- 30 minute protocol

Applications

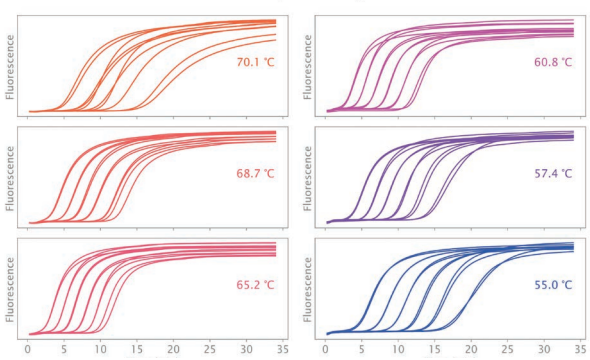
- Multiple displacement amplification
- Isothermal amplification
- Loop mediated isothermal amplification (LAMP)
- Molecular diagnostics
- Field diagnostics

IsoFast® Bst Polymerase

MORE INFO

IsoFast® Bst Polymerase is provided with an advanced 2-part buffer system to ensure high yields and performance even under difficult conditions. The enzyme is glycerol free and comes with the option of a separate fluorescent dye enabling real-time detection with any qPCR thermocycler.

Units	Presentation	Catalogue No.
IsoFast Bst Polymerase		
1600	[1x200 µL 8 U/µL] & [1x500 µL Buffer A] & [1x1 mL Buffer B]	PB80.10-01
8000	[1x1 mL 8 U/µL] & [2x1.25 mL Buffer A] & [3x1.7 mL Buffer B]	PB80.10-08
IsoFast Bst Polymerase with Dye		
1600	[1x200 µL 8 U/µL] & [1x500 µL Buffer A] & [1x1 mL Buffer B] & [2x125 µL Dye]	PB80.10-01
8000	[1x1 mL 8U/ µL] & [2x1.25 mL Buffer A] & [3x1.7 mL Buffer B] & [2x625 µL Dye]	PB80.10-08



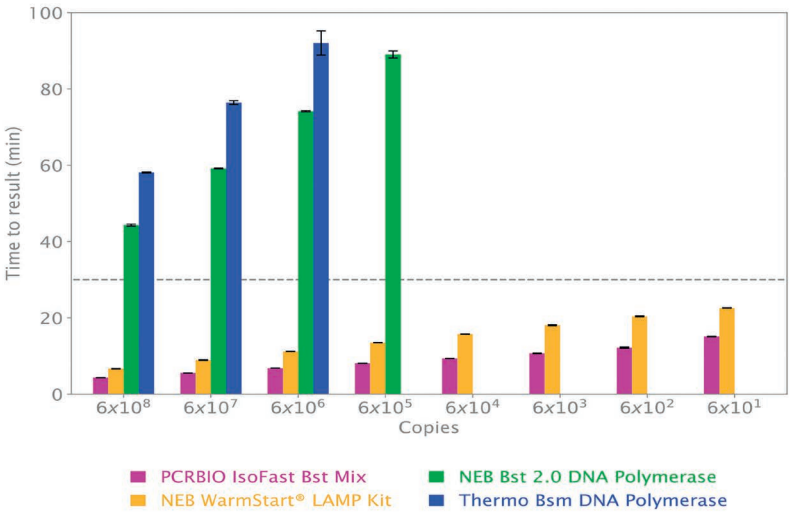
Active over a broad temperature range

Isothermal amplification of scaffolding protein gene (using M13mp18 ssDNA genome) was performed using IsoFast™ Bst Mix. 6 serial dilutions of ssDNA template were used and the reaction run at the indicated temperature for 34 mins. A BioRad CFX96 Touch instrument was used to record fluorescence every 10 sec. IsoFast® Bst Mix is active over a broad temperature range.

IsoFast® Bst Mix

IsoFast® Bst Mix is a 2x mix containing all the components required for rapid isothermal amplification. Just add template and primers. The kit includes a separate fluorescent dye real-time detection with any qPCR thermocycler.

Reactions (25 µL)	Presentation	Catalogue No.
IsoFast Bst Polymerase		
100	[1x1.25 mL Mix] & [1x125 µL Dye]	PB80.12-01
500	[5x1.25 mL Mix] & [1x625 µL Dye]	PB80.12-05



Fast and consistent isothermal amplification performance

Isothermal amplification of scaffolding protein gene from M13mp18 ssDNA genome using IsoFast® Bst Mix, NEB WarmStart LAMP Kit, NEB Bst 2.0 DNA Polymerase and Thermo Bsm DNA Polymerase. The manufacturers' protocols were followed to set up the reaction mix.

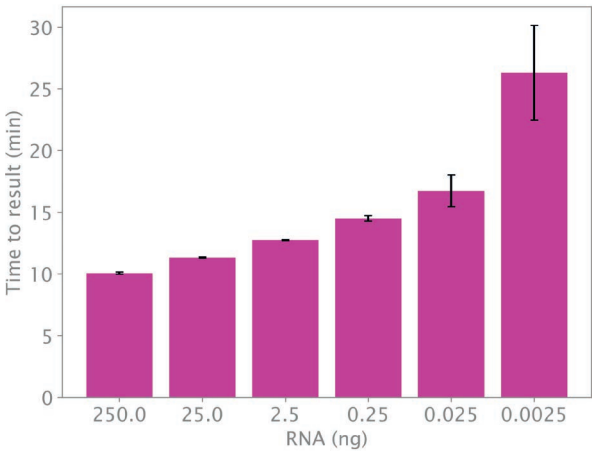
8 serial dilutions of ssDNA template were used, corresponding to the number of copies of M13 genome indicated. The reaction was run at 65 °C for 100 mins. A BioRad CFX96 Touch instrument was used to record fluorescence every 10 sec. The time to result is the time required to reach the same fluorescent threshold.

IsoFast® Bst 1-Step Mix

IsoFast® Bst 1-Step Mix is a dual enzyme system for rapid and sensitive isothermal amplification of RNA targets in one step. The kit contains IsoFast® Bst Polymerase together with the highly active modified MMLV RTase Go.

MORE INFO

Reactions (25 µL)	Presentation	Catalogue No.
IsoFast Bst 1-Step Mix		
100	[1x1.25 mL Mix] & [1x200 µL RTase Go] & [1x125 µL Dye]	PB80.21-01
500	[4 x 1.6 mL Mix] & [1x1 mL RTase Go] & [1x625 µL Dye]	PB80.21-05

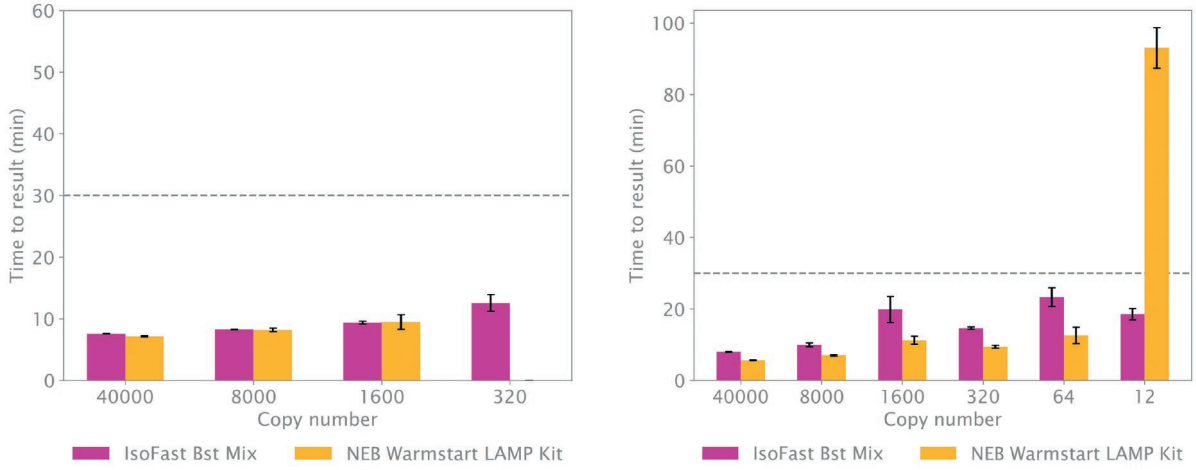


Rapid and sensitive amplification performance

Isothermal amplification of beta actin from human lung total RNA using IsoFast® Bst 1-Step Mix. A primer mix of 0.2 µM for F3 and B3 primers, 1.6 µM for FIP and BIP primers and 0.8 µM for LoopF and LoopB primers was used. The total reaction volume was 25 µL. 7 serial dilutions of template were used, corresponding to 250ng, 25ng, 2.5 ng, 250 pg, 25 pg, 2.5 pg and 250 fg of total RNA. The reaction was run at 65 ˚C for 34 minutes. A BioRad CFX96 Touch instrument was used to record fluorescence every 10 seconds. Time to result is the time required to reach the same fluorescent threshold. IsoFast® Bst 1-Step Mix provides rapid and sensitive amplification down to 2.5 pg of total RNA.

E1 Sequence in SARS-CoV-2

N2 Sequence in SARS-CoV-2: Time to result



Rapid detection of SARS-CoV-2 E1 and N2 sequences

Isothermal amplification of E1 (top panel) and N2 (bottom panel) targets in SARS-CoV-2 RNA using IsoFast® Bst 1-Step Mix and compared to results obtained with NEB WarmStart LAMP Kit. A primer mix of 0.2 µM for F3 and B3, 1.6 µM for FIP and BIP and 0.8 µM for LoopF and LoopB primers was used. The total reaction volume was 25 µL. 7 serial dilutions of template were used, corresponding to 40000, 8000, 1600, 320, 64, 12.8, 2.56 copies of SARS-CoV-2 RNA. The reaction was run at 65 ˚C for 100 minutes. A BioRad CFX96 Touch instrument was used to record fluorescence every 10 seconds. Time to result is the time required to reach the same fluorescent threshold. IsoFast® Bst 1-Step Mix enables rapid detection of SARS-CoV-2 RNA.

IsoFast® Hot Start Bst Polymerase

MORE INFO

IsoFast® Hot Start Bst Polymerase is a recombinant form of the large fragment of Bst DNA polymerase containing strand-displacing 5'-3' polymerase activity combined with AptaLock™ hot start technology.

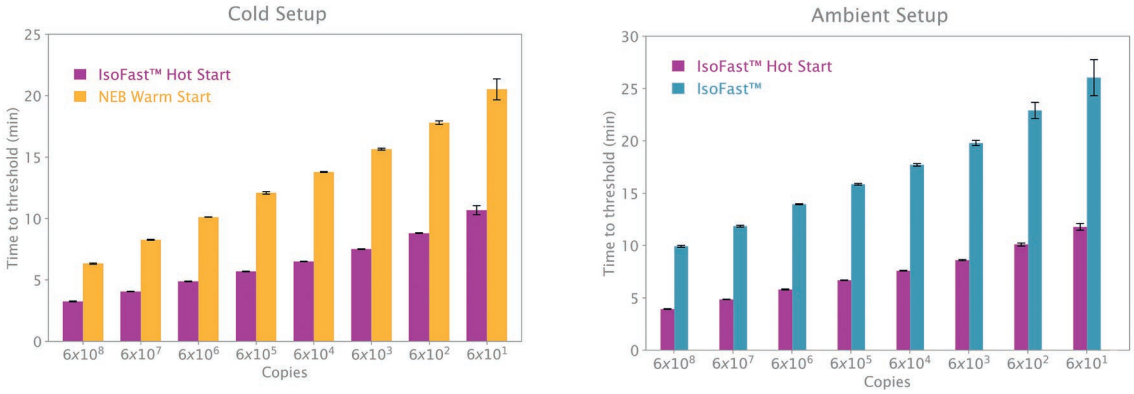
The unique AptaLock™ hot start technology in these products relies on an aptamer-like molecule that inhibits Bst polymerase at temperatures below 40 ˚C. This prevents non-specific amplification and mispriming at ambient conditions, thereby increasing both specificity and sensitivity of isothermal reactions. Hot start activation also enables room temperature reaction preparation, thus allowing for smooth workflows and improved results.

Features

- AptaLock™ hot start for ultra-sensitive detection of DNA targets
- Rapid polymerisation for faster time to result (as little as 10 mins)
- Detect down to 3 target copies per µL
- Ideal for both cold and room temperature setup
- Improved speed and sensitivity for early target detection
- High activity at a broad range of temperatures from 55-70 °C

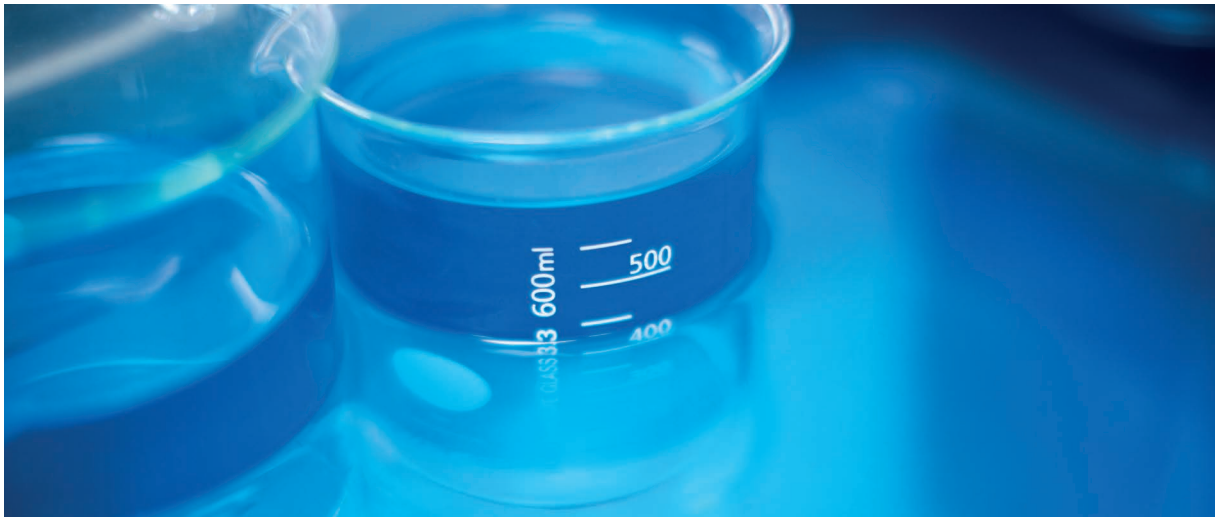
Applications

- Colourimetric Isothermal Amplification
- Colourimetric LAMP
- Positive/negative DNA testing
- Rapid target screening
- Point-of-care testing



Faster detection with both cold and ambient setup

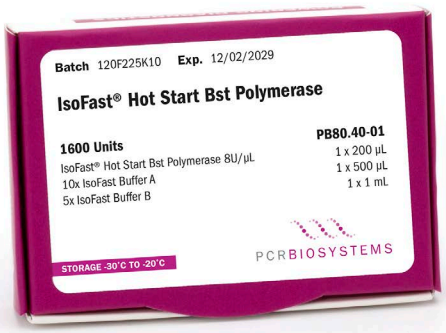
Isothermal amplification of a target sequence in the scaffolding protein gene from the M13 bacteriophage genome using IsoFast® Hot Start Bst Mix and NEB WarmStart LAMP Kit. The total reaction volume was 25 µL. 8 serial dilutions of M13 ssDNA genome were used, starting with a stock of 0.5 ng/µL and using a dilution factor of 10, corresponding to the number of genome copies indicated in the plot. Reaction master mixes and plates were prepared either using cold blocks (cold setup) or at room temperature (ambient setup), for approximately 20 min. The reaction was run at 65 °C for 100 min. A BioRad CFX96 Touch instrument was used to record fluorescence every 10 seconds. The time to threshold indicates the time required to reach the same fluorescent threshold. IsoFast® Hot Start Bst Mix shows faster amplification when compared to NEB WarmStart LAMP Kit, both under cold and ambient setup.



IsoFast® Hot Start Bst Polymerase

In this format the enzyme and reaction buffers are supplied in separate tubes. Suitable for multiple detection methods and available both with and without fluorescent dye.

Units	Presentation	Catalogue No.
IsoFast® Hot Start Bst Polymerase		
1600	[1x200 µL 8 U/µL] & [1x500 µL Buffer A] & [1x1 mL Buffer B]	PB80.40-01
8000	[1x1 mL 8 U/µL] & [2x1.25 mL Buffer A] & [3x1.7 mL Buffer B]	PB80.40-08
IsoFast® Hot Start Bst Polymerase with Dye		
1600	[1x200 µL 8 U/µL] & [1x500 µL Buffer A] & [1x1 mL Buffer B] & [2x125 µL Dye]	PB80.41-01
8000	[1x1 mL 8U/ µL] & [2x1.25 mL Buffer A] & [3x1.7 mL Buffer B] & [2x625 µL Dye]	PB80.41-08



IsoFast® Hot Start Bst Mix

Combines IsoFast® Hot Start Bst Polymerase with reaction buffer in a single tube as a 2x mix. This format is perfect for rapid reaction setup with minimal pipetting and reduced probability of handling errors. 20x fluorescent dye is supplied in a separate tube, offering flexibility in choosing a detection method.

Reactions (25 µL)	Presentation	Catalogue No.
IsoFast® Hot Start Bst Mix		
100	[1x1.25 mL Mix] & [1x125 µL Dye]	PB80.42-01
500	[5x1.25 mL Mix] & [1x625 µL Dye]	PB80.42-05

IsoFast® Hot Start Bst Colour Kits

MORE INFO

IsoFast® Hot Start Bst Colour reagents are colourimetric isothermal amplification enzyme formulations that combine IsoFast® Hot Start Bst Polymerase with a pH-based dye for rapid positive/negative screening.

These kits enable a PCR-free, direct, colour-based readout for DNA target detection that is ideal for point-of-care diagnostics and field testing. Isothermal amplification eliminates the need for thermal cycling, and therefore expensive equipment, whilst the colour reagent means there is no need for additional equipment or reagents to generate an assay result, making these products ideal for rapid high-throughput sample screening.

Features

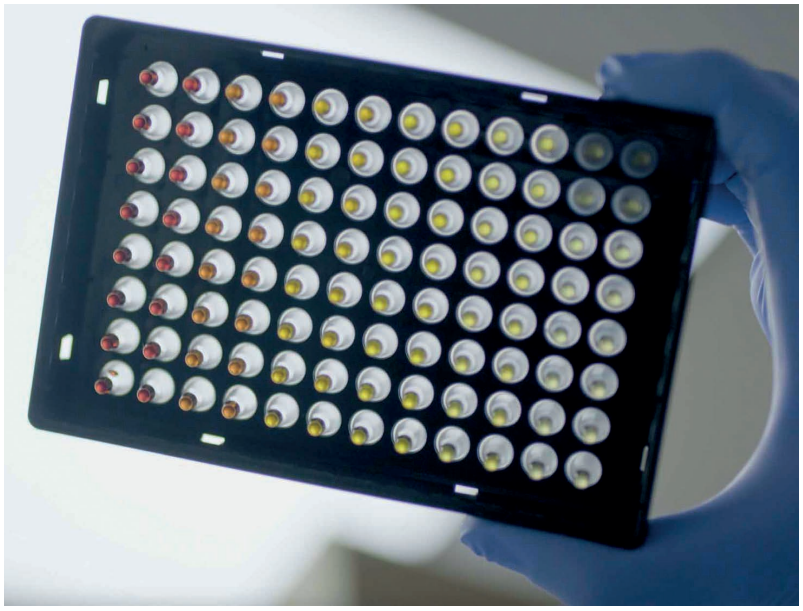
- Fast colour readout for positive/negative testing
- AptaLock™ hot start for ultra-sensitive detection of DNA targets
- Rapid polymerisation for faster time to results (as little as 10 mins)
- Detect down to 3 target copies per µL
- Ideal for both cold and room temperature setup
- Improved speed and sensitivity for early target detection
- High activity at a broad range of temperatures from 55-70 °C

Applications

- Colourimetric Isothermal Amplification
- Colourimetric LAMP
- Positive/negative DNA testing
- Rapid target screening
- Point-of-care testing

IsoFast® Hot Start Bst Color Mix

Get rapid and reliable colourimetric readout from isothermal amplification reactions with both cold and ambient temperature reaction setup.



IsoFast® Hot Start Bst Colour Mix

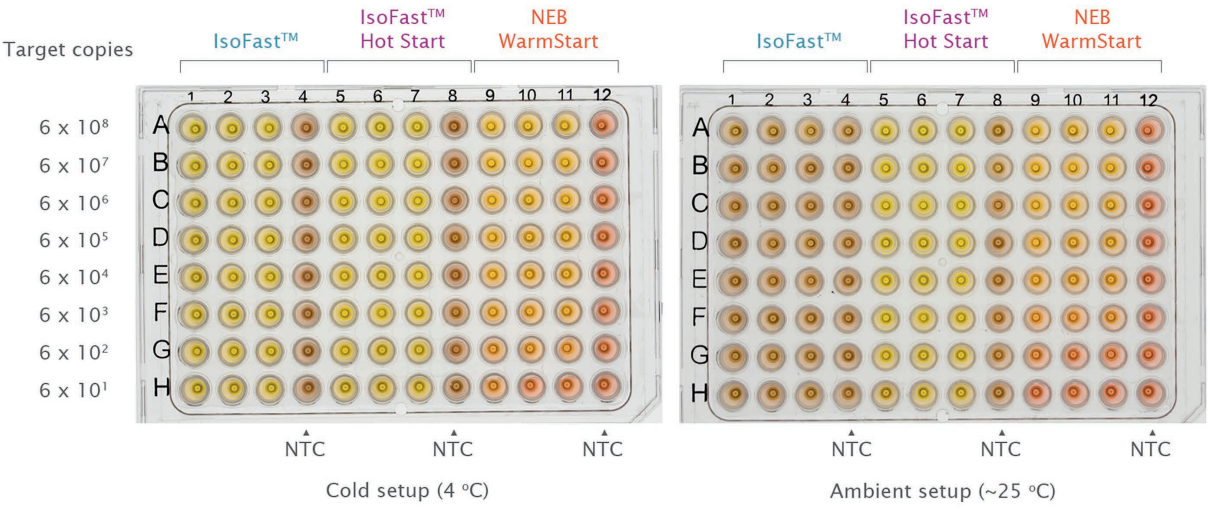
Combines IsoFast® Hot Start Bst Polymerase with both reaction buffers in a single tube as a 2x mix. This format is perfect for rapid reaction setup with minimal pipetting and reduced probability of handling errors. The mix also contains a pH-sensitive dye enabling fast positive/negative screening based on a colour readout.

Reactions (25 µL)	Presentation	Catalogue No.
IsoFast® Hot Start Bst Colour Mix		
100	1x1.25 mL	PB80.51-01
500	5x1.25 mL	PB80.51-05

IsoFast® Hot Start Bst Polymerase Colour

IsoFast® Hot Start Bst Polymerase enzyme and reaction buffers A and B are supplied in separate tubes. This format is ideal for assay customisation and expirimentation during assay developement. Buffer A is combined with a pH-sensitive dye, enabling direct colourimetric readout.

Units	Presentation	Catalogue No.
IsoFast® Hot Start Bst Polymerase Colour Mix		
1600	[1 x 200 µL 8 U/µL] & [1 x 500 µL Colour Buffer A] & [1 x 1 mL Buffer B]	PB80.50-01
8000	[1x1 mL 8 U/µL] & [2x1.25 mL Colour Buffer A] & [3x1.7 mL Buffer B]	PB80.50-08



Reliable colourimetric readout with cold and ambient reaction setup

Isothermal amplification of a target sequence in the scaffolding protein gene from the M13 bacteriophage genome using IsoFast® Hot Start Bst Polymerase or IsoFast® Bst Polymerase in 10x IsoFast® Colour Buffer A, and NEB WarmStart Colorimetric LAMP 2X Master Mix. A primer mix consisting of 0.2 µM for F3 and B3 primers, 1.6 µM for FIP and BIP primers and 0.8 µM for LoopF and LoopB primers was used. The total reaction volume was 25 µL. 8 serial dilutions of M13 ssDNA genome were used, starting with a stock of 0.5 ng/µL and using a dilution factor of 10, corresponding to the number of genome copies indicated next to the plates. Reaction master mixes and plates were prepared either using cold blocks (cold Setup) or at room temperature (ambient setup), for approximately 20 min. The reaction was run at 65 °C for 30 minutes. Plates were then photographed to show the colours obtained at the end of the run. IsoFast® Bst Polymerase and IsoFast® Hot Start Bst Polymerase showed a better sensitivity compared to NEB WarmStart Colorimetric LAMP 2X Master Mix in Cold Setup. IsoFast® Hot Start Bst Polymerase allows easy screening for positives even with ambient temperature setup.

Next Generation Sequencing

Accurate Wide dynamic range Low GC-bias

VeriFi® Library Amplification Mix

VeriFi® Library Amplification Mix is ideal for NGS library amplification workflows and challenging PCRs. Combining a powerful and robust proofreading enzyme, greatly reduced GC-dependent bias, and AptaLock™ hot start technology, this mix enables precise PCR, regardless of the target you are sequencing.

MORE INFO

A superior proofreading Pfu polymerase in a specially formulated 2x PCR ready mix designed for NGS library amplification with reduced GC bias. This cutting-edge mix offers market leading performance enabling the acquisition of superior quality datasets with a higher number of unique reads.

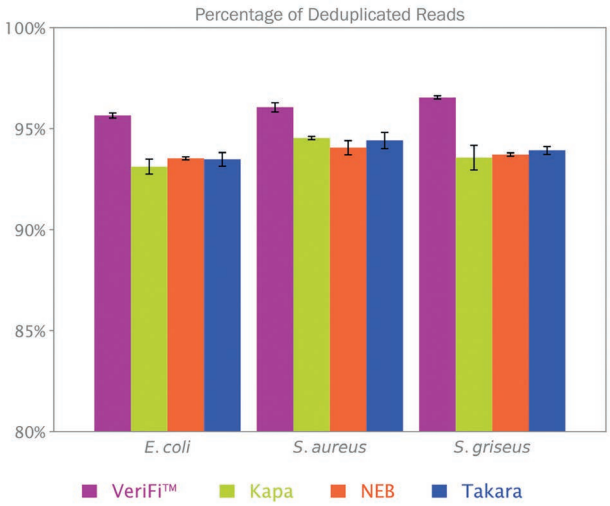
Reactions (50 µL)	Presentation	Catalogue No.
VeriFi Library Amplification Mix		
50	1 x 1.25 mL	PB72.10-01
250	5 x 1.25 mL	PB72.10-05

Features

- Low GC bias, ideal for high GC/AT targets
- More unique reads per NGS dataset for superior data quality
- AptaLock™ hot start technology for maximum sensitivity and specificity
- 100x higher fidelity than Taq DNA polymerase
- Room temperature setup
- 2x ready mix for minimal pipetting

Applications

- NGS library amplification
- Whole genome sequencing
- RNA-Seq
- Multiplex and high throughput PCR
- GC/AT rich target sequencing
- Metagenomic studies



Higher number of unique reads per dataset

The number of uniquely mapped reads for three microbial genomes with different average GC content (E. coli ~50% GC, S. aureus ~30% GC, and S. griseus ~70% GC) shown as a percentage of total reads in four sequencing datasets. Datasets were generated using Illumina sequencing in a blind experiment where all three genome libraries were amplified with different proofreading polymerases, VeriFi® Library Amplification Mix (purple), KAPA HiFi HotStart Library Amplification Kit (green), NEBNext Ultra II Q5 Master Mix (orange), and Takara SeqAmp DNA Polymerase (blue).

NGS library amplification with VeriFi® Library Amplification Mix leads to a higher number of unique reads per dataset after read deduplication compared to leading competitors.

NGSBIO Library Quant Kits

NGSBIO Library Quant Kits contain all the components required for accurate and sensitive quantification of libraries prepared for Illumina NGS systems. The kit uses qPCR to specifically quantify adapter-ligated DNA molecules, ensuring optimal cluster densities for improved sequencing efficiency and quality of data.

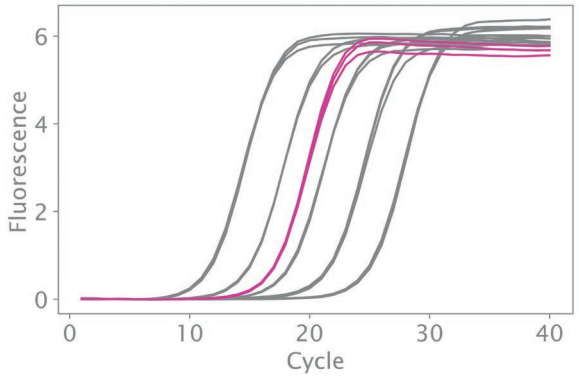
The kit includes 5 DNA standards, primers specific to the P5 and P7 Illumina adapter sequences and qPCRBIO SyGreen® Mix or qPCRBIO SyGreen® Blue Mix. The blue mix contains a non-reactive dye to improve reaction mix visibility, allowing greater pipetting precision and reduced errors without affecting your real-time PCR performance.

Features

- Uses qPCR to accurately and rapidly quantify a library prior to sequencing
- Gives consistent library quantification across a wide range of sample types, concentrations, fragment sizes and GC content
- Uses a single extension time for all libraries
- Allows specific quantification of only DNA molecules that can be sequenced by NGS
- Uses antibody-mediated hot start technology to ensure all reactions start simultaneously
- Compatible with all Illumina instruments and qPCR platforms
- Suitable for manual and automated workflows
- Easily calculate library concentration with the online NGSBIO Library Quantification Tool

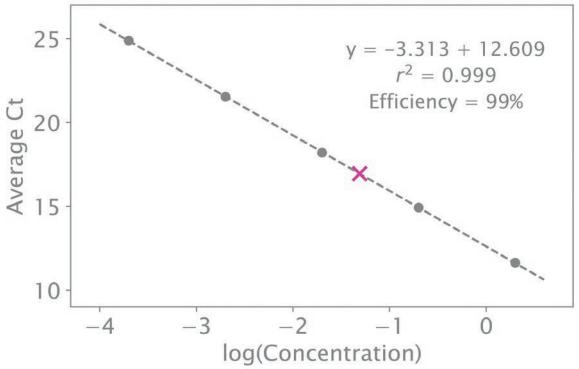
Kit Contents

- qPCRBIO SyGreen® Mix or Blue Mix
- Illumina primers
- Dilution buffer
- 5 DNA standards



Amplification curves

An adapter-ligated library sample (purple) is run alongside six standard templates (grey) provided in the NGSBIO Library Quant Kits.



Standard curve

The Cts of the amplification curves are plotted against the log of the concentration of the standard templates. A linear curve is fitted through the standards. The concentration of the unknown sample is then calculated from its position on the curve.

NGSBIO Library Quant Kit for Illumina

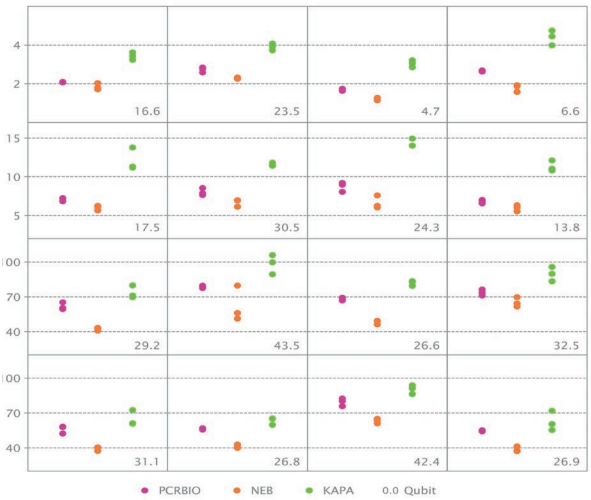
Reactions (20 µL)	Presentation	Catalogue No.
NGSBIO Library Quant Kit for Illumina Lo-ROX		
100	[1 x 1 mL mix] & [1 x 0.2 mL primers] & [1 x 0.6 mL buffer] & [5 x 30 µL standards]	PB71.11-01
500	[5 x 1 mL mix] & [1 x 1 mL primers] & [2 x 1.5 mL buffer] & [5 x 85 µL standards]	PB71.11-05
NGSBIO Library Quant Kit for Illumina Hi-ROX		
100	[1 x 1 mL mix] & [1 x 0.2 mL primers] & [1 x 0.6 mL buffer] & [5 x 30 µL standards]	PB71.12-01
500	[5 x 1 mL mix] & [1 x 1 mL primers] & [2 x 1.5 mL buffer] & [5 x 85 µL standards]	PB71.12-05
NGSBIO Library Quant Kit for Illumina Separate-ROX		
100	[1 x 1 mL mix] & [1 x 0.2 mL ROX] & [1 x 0.2 mL primers] & [1 x 0.6 mL buffer] & [5 x 30 µL standards]	PB71.14-01
500	[5 x 1 mL mix] & [1 x 0.2 mL ROX] & [1 x 1 mL primers] & [2 x 1.5 mL buffer] & [5 x 85 µL standards]	PB71.14-05

MORE INFO

NGSBIO Library Quant Kit Blue for Illumina

Reactions (20 µL)	Presentation	Catalogue No.
NGSBIO Library Quant Kit Blue for Illumina Lo-ROX		
100	[1 x 1 mL mix] & [1 x 0.2 mL primers] & [1 x 0.6 mL buffer] & [5 x 30 µL standards]	PB71.15-01
500	[5 x 1 mL mix] & [1 x 1 mL primers] & [2 x 1.5 mL buffer] & [5 x 85 µL standards]	PB71.15-05
NGSBIO Library Quant Kit Blue for Illumina Hi-ROX		
100	[1 x 1 mL mix] & [1 x 0.2 mL primers] & [1 x 0.6 mL buffer] & [5 x 30 µL standards]	PB71.16-01
500	[5 x 1 mL mix] & [1 x 1 mL primers] & [2 x 1.5 mL buffer] & [5 x 85 µL standards]	PB71.16-05
NGSBIO Library Quant Kit Blue for Illumina Separate-ROX		
100	[1 x 1 mL mix] & [1 x 0.2 mL ROX] & [1 x 0.2 mL primers] & [1 x 0.6 mL buffer] & [5 x 30 µL standards]	PB71.17-01
500	[5 x 1 mL mix] & [1 x 0.2 mL ROX] & [1 x 1 mL primers] & [2 x 1.5 mL buffer] & [5 x 85 µL standards]	PB71.17-05

MORE INFO



High consistency and reproducibility of quantification

Quantification of 16 adapter-ligated libraries using NGSBIO Library Quant Kit (purple), NEBNext Library Quant Kit (orange) and KAPA Library Quantification Kit (green). The NGSBIO Library Quant Kit shows less spread and greater consistency among replicates. The quantification results are within those obtained by two leading manufacturers of NGS library quantification kits. The number on the bottom right corner of each graph represents the concentration of dsDNA obtained using a Qubit Fluorometer from Invitrogen.

Notes

We take pride in delivering exceptional customer service, offering dedicated pre- and post-sales support to help you get the best results from our market-leading polymerases and mixes.

To place an order, or for more information and technical assistance, please contact us using the details below.

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