



PCRBIOSYSTEMS  
simplifying research

• PRODUCTS •





PCR Biosystems offer a range of best-in-class kits and reagents for PCR and related technology. By maintaining the highest levels of integrity, professionalism, innovation and competitive pricing for our customers, we are leading the development of PCR.

Our PCR reagents combine enhanced polymerases with highly developed reaction buffers and antibody-mediated hot start chemistry to maximise yield and sensitivity from the simplest to most challenging of reactions. We continuously invest in research and development to bring innovative, high-performing products to market, covering a range of techniques including real-time PCR, endpoint PCR, high fidelity PCR, hot start PCR, long PCR, PCR direct from crude samples and molecular diagnostic PCR.

Our products are developed, manufactured and sold under a comprehensive quality management system in accordance with ISO 9001:2015 and ISO 13485:2016 international standards. Detailed competitor product comparisons show that on average we out-perform all competitors in yield, specificity, sensitivity and speed, giving your reaction the best chance of working as you want it to, first time.





# PRODUCTS

## Real-Time PCR

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# Real-Time **PCR**

- 
- Sensitive
  - Specific
  - Fast



# qPCRBIO Selection Table

	DNA Kits												RNA Kits				
	qPCR <sup>BIO</sup> SyGreen Mix   SyGreen Blue Mix Hi-ROX	qPCR <sup>BIO</sup> SyGreen Mix   SyGreen Blue Mix Lo-ROX	qPCR <sup>BIO</sup> SyGreen Mix   SyGreen Blue Mix Separate-ROX	qPCR <sup>BIO</sup> SyGreen Mix with Fluorescein	qPCR <sup>BIO</sup> Probe Mix   Probe Blue Mix Hi-ROX	qPCR <sup>BIO</sup> Probe Mix   Probe Blue Mix Lo-ROX	qPCR <sup>BIO</sup> Probe Mix   Probe Blue Mix Separate-ROX	qPCR <sup>BIO</sup> Probe Mix No-ROX	qPCR <sup>BIO</sup> Genotyping Mix Hi-ROX	qPCR <sup>BIO</sup> Genotyping Mix Lo-ROX	qPCR <sup>BIO</sup> Genotyping Mix No-ROX	qPCR <sup>BIO</sup> HRM Mix	qPCR <sup>BIO</sup> SyGreen 1-Step Detect   1-Step Go Hi-ROX	qPCR <sup>BIO</sup> SyGreen 1-Step Detect   1-Step Go Lo-ROX	qPCR <sup>BIO</sup> Probe 1-Step Go Hi-ROX	qPCR <sup>BIO</sup> Probe 1-Step Go Lo-ROX	qPCR <sup>BIO</sup> Probe 1-Step Go No-ROX
Agilent (Stratagene)																	
AriaMX		●	●			●	●			●		●		●		●	
MX3000P®, MX3005P®, MX4000P®		●	●			●	●			●				●		●	
Analytik Jena																	
qTOWER, qTOWER 2.x		●	●				●	●			●			●			●
BMS																	
Mic		●	●				●	●			●	●		●			●
Bio-Rad®																	
CFX96™, CFX384™		●	●				●	●			●	●		●			●
Chromo4™, MiniOpticon™ , Opticon™, Opticon™ 2		●	●				●	●			●			●			●
iCycler®, iQ™ 5, MyiQ™				●			●	●			●						●
BJS																	
Xpress®		●	●				●	●			●			●			●
Cepheid®																	
SmartCycler®		●	●				●	●			●			●			●
Eppendorf																	
Mastercycler® ep realplex, Mastercycler® ep realplex 2S		●	●				●	●			●	●		●			●
Fluidigm																	
BioMark™		●	●			●	●			●				●		●	
Hain Lifescience																	
FluoroCycler® 96		●	●				●	●			●			●			●
IT-IS Life Science																	
MyGo Pro, MyGo Mini		●	●				●	●			●			●			●
PCRmax																	
Eco™		●	●				●	●			●	●		●			●
Qiagen (Corbett)																	
Rotor-Gene™ 3000, Rotor-Gene™ 6000, Rotor-Gene™ Q		●	●				●	●			●	◇		●			●
Roche																	
LightCycler® 480, LightCycler® 96, LightCycler® Nano		●	●				●	●			●	●		●			●
Takara																	
Thermal Cycler Dice® (TP800)		●	●				●	●			●			●			●
Techne®																	
PrimeQ, Quantica®		●	●				●	●			●			●			●
Thermo Fisher (including Applied Biosystems and Life Technologies)																	
5700, 7000, 7300, StepOne™, StepOne™ plus	●		●		●		●		●			◇	●		●		
7500, 7500 FAST, QuantStudio™ 3, 5, 6, 7, 12k Flex, ViiA7™		●	●			●	●			●		◇		●		●	
7700, 7900, 7900HT, 7900HT FAST	●		●		●		●		●			◇	●		●		
Piko Real®		●	●				●	●			●			●			●

◇ qPCRBIO HRM Mix works with the following instruments:  
 Thermo Fisher: StepOne™, StepOne™plus, 7500 FAST, QuantStudio™ 6, 7, 12k Flex, ViiA7™, 7900HT FAST only  
 Qiagen (Corbett): Rotor-Gene™ 6000, Rotor-Gene™ Q only

# qPCRBIO SyGreen Mix

- Sensitive
- Specific
- Fast

qPCRBIO SyGreen Mix combines a proprietary non-inhibiting intercalating dye with the latest advances in polymerase technology and buffer chemistry to give you fast, highly sensitive and reproducible real-time PCR.

Antibody-mediated hot start technology prevents the formation of primer dimers and non-specific products leading to improved reaction sensitivity and specificity with minimal or no optimisation required. qPCRBIO SyGreen Mix can be used to reliably quantify any DNA template including genomic, cDNA and viral sequences, and is able to detect extremely low copy number targets with the highest efficiency.



Figure 1. qPCRBIO SyGreen Blue Mix for greater pipetting precision

qPCRBIO SyGreen Blue Mix contains a non-reactive blue dye to assist researchers during pipetting, allowing greater visibility and precision without affecting PCR performance.

## Features

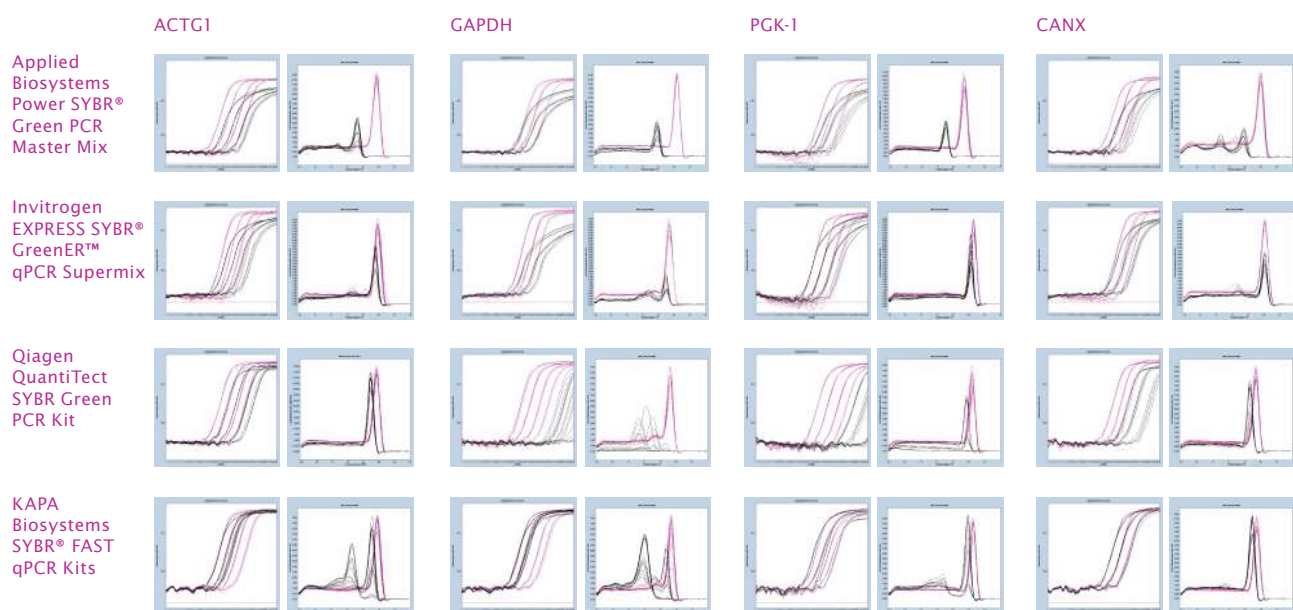
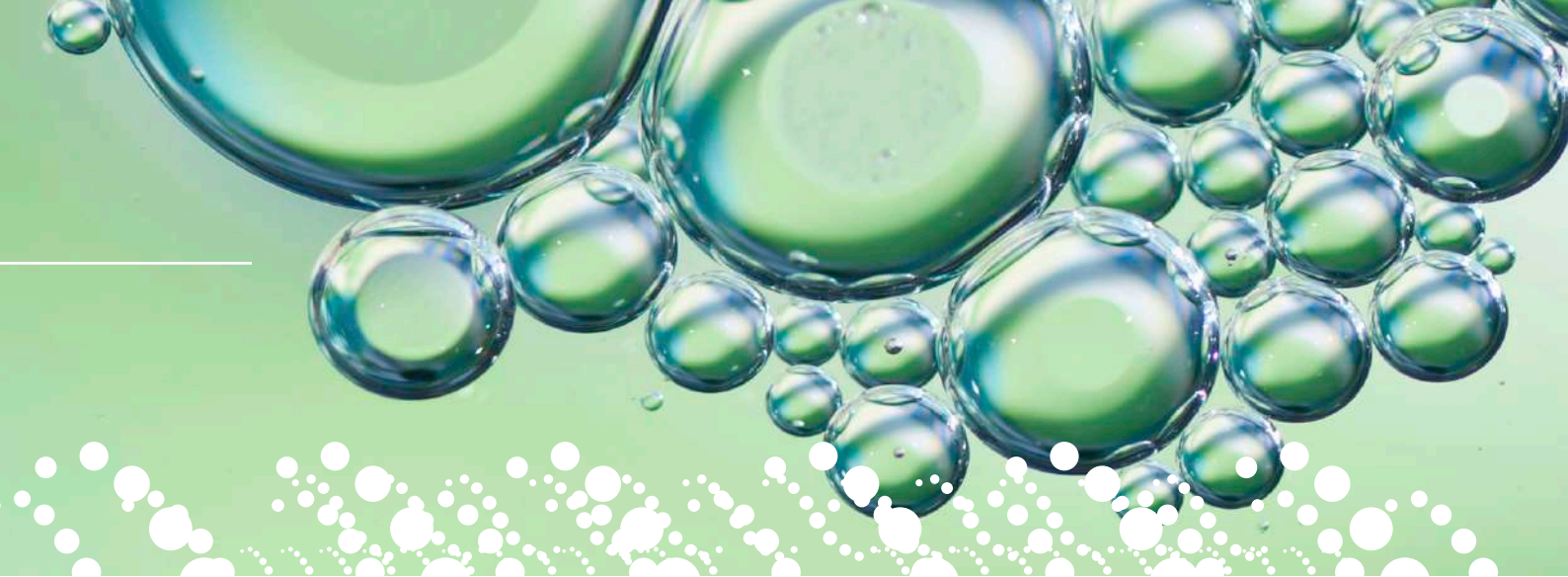
- Non-PCR inhibiting intercalating dye
- Rapid extension rate for early Ct values
- Market-leading sensitivity
- Increased limit of detection
- Specific amplification from complex templates including GC and AT-rich sequences
- Also available as an easy-to-see blue mix
- Compatible with all standard and fast cycling real-time instruments

## Applications

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

qPCRBIO SyGreen Blue Mix	Pack size	Presentation	Cat. no.
qPCRBIO SyGreen Blue Mix Lo-ROX	100 x 20µL reactions	1 x 1mL	PB20.15-01
	500 x 20µL reactions	5 x 1mL	PB20.15-05
	2000 x 20µL reactions	20 x 1mL	PB20.15-20
	5000 x 20µL reactions	1 x 50mL bottle	PB20.15-50
	5000 x 20µL reactions	50 x 1mL in pouch	PB20.15-51
qPCRBIO SyGreen Blue Mix Hi-ROX	100 x 20µL reactions	1 x 1mL	PB20.16-01
	500 x 20µL reactions	5 x 1mL	PB20.16-05
	2000 x 20µL reactions	20 x 1mL	PB20.16-20
	5000 x 20µL reactions	1 x 50mL bottle	PB20.16-50
	5000 x 20µL reactions	50 x 1mL in pouch	PB20.16-51
qPCRBIO SyGreen Blue Mix Separate-ROX	100 x 20µL reactions	[1 x 1mL mix] & [1 x 200µL ROX]	PB20.17-01
	500 x 20µL reactions	[5 x 1mL mix] & [1 x 200µL ROX]	PB20.17-05
	2000 x 20µL reactions	[20 x 1mL mix] & [4 x 200µL ROX]	PB20.17-20
	5000 x 20µL reactions	[1 x 50mL bottle mix] & [2 x 520µL ROX]	PB20.17-50
	5000 x 20µL reactions	[50 x 1mL mix] & [2 x 520µL ROX] in pouch	PB20.17-51





Black trace = Competitor Mix  
Purple trace = qPCR Bio SyGreen Mix

Figure 2.

Amplification and melt traces of 4 mouse housekeeping genes from a cDNA dilution series. Cycling conditions were 95°C 2min, 40 cycles of 95°C 10sec, 60°C 15sec on Roche LC480. ACTG1: qPCR Bio mix was 2-4 Ct values earlier than 3 competitor mixes and equal to Kapa Biosystems. The sensitivity was equal to 3 mixes but superior to Kapa Biosystems, demonstrated by the absence of primer dimer at low template concentrations. GAPDH: qPCR Bio mix was 1-3 Ct values earlier than 2 competitor mixes and equal to 2 mixes. The sensitivity was superior to 3 competitor mixes, demonstrated by the absence of primer dimer, and equal to Applied Biosystems. PGK: qPCR Bio mix had Ct values equal or lower than the 4 competitor mixes. Sensitivity was superior to 2 mixes and equal to 2 mixes. CANX: Ct values were 1-6 lower than 3 of 4 mixes and equal to Kapa Biosystems. Sensitivity was equal to 2 mixes and superior to 2 mixes. Overall qPCR Bio SyGreen Mix outperforms each competitor mix on the 4 amplicons tested.

qPCR Bio SyGreen Mix	Pack size	Presentation	Cat. no.
qPCR Bio SyGreen Mix Lo-ROX	100 x 20µL reactions	1 x 1mL	PB20.11-01
	500 x 20µL reactions	5 x 1mL	PB20.11-05
	2000 x 20µL reactions	20 x 1mL	PB20.11-20
	5000 x 20µL reactions	1 x 50mL bottle	PB20.11-50
	5000 x 20µL reactions	50 x 1mL in pouch	PB20.11-51
qPCR Bio SyGreen Mix Hi-ROX	100 x 20µL reactions	1 x 1mL	PB20.12-01
	500 x 20µL reactions	5 x 1mL	PB20.12-05
	2000 x 20µL reactions	20 x 1mL	PB20.12-20
	5000 x 20µL reactions	1 x 50mL bottle	PB20.12-50
	5000 x 20µL reactions	50 x 1mL in pouch	PB20.12-51
qPCR Bio SyGreen Mix with Fluorescein	100 x 20µL reactions	1 x 1mL	PB20.13-01
	500 x 20µL reactions	5 x 1mL	PB20.13-05
	2000 x 20µL reactions	20 x 1mL	PB20.13-20
qPCR Bio SyGreen Mix Separate-ROX	100 x 20µL reactions	[1 x 1mL mix] & [1 x 200µL ROX]	PB20.14-01
	500 x 20µL reactions	[5 x 1mL mix] & [1 x 200µL ROX]	PB20.14-05
	2000 x 20µL reactions	[20 x 1mL mix] & [4 x 200µL ROX]	PB20.14-20
	5000 x 20µL reactions	[1 x 50mL bottle mix] & [2 x 520µL ROX]	PB20.14-50
	5000 x 20µL reactions	[50 x 1mL mix] & [2 x 520µL ROX] in pouch	PB20.14-51

# qPCRBIO Probe Mix

- Sensitive
- Specific
- Fast

qPCRBIO Probe Mix is a universal probe kit designed to give superior sensitivity and specificity in all probe-based real-time PCR assays including TaqMan®, Scorpions® and molecular beacon probes.

By combining antibody-mediated hot start technology with the latest advances in buffer chemistry we offer market-leading performance with minimal or no optimisation required. qPCRBIO Probe Mix can be used to reliably detect extremely low copy number targets and quantify any DNA template including genomic, cDNA and viral sequences. The enhanced sensitivity of qPCRBIO Probe Mix makes it the perfect choice for multiplexing.



Figure 1. qPCRBIO Probe Blue Mix for greater pipetting precision

qPCRBIO Probe Blue Mix contains a non-reactive blue dye for easy sample visualisation and greater precision, particularly useful when loading small volume reactions.

## Features

- High efficiency in multiplex reactions
- Rapid extension rate for early Ct values
- Market-leading sensitivity
- Increased limit of detection
- Efficient amplification from GC and AT-rich templates
- Also available as an easy-to-see blue mix
- Compatible with all standard and fast and 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

qPCRBIO Probe Blue Mix	Pack size	Presentation	Cat. no.
qPCRBIO Probe Blue Mix Lo-ROX	100 x 20µL reactions	1 x 1mL	PB20.25-01
	500 x 20µL reactions	5 x 1mL	PB20.25-05
	2000 x 20µL reactions	20 x 1mL	PB20.25-20
	5000 x 20µL reactions	1 x 50mL bottle	PB20.25-50
	5000 x 20µL reactions	50 x 1mL in pouch	PB20.25-51
qPCRBIO Probe Blue Mix Hi-ROX	100 x 20µL reactions	1 x 1mL	PB20.26-01
	500 x 20µL reactions	5 x 1mL	PB20.26-05
	2000 x 20µL reactions	20 x 1mL	PB20.26-20
	5000 x 20µL reactions	1 x 50mL bottle	PB20.26-50
	5000 x 20µL reactions	50 x 1mL in pouch	PB20.26-51
qPCRBIO Probe Blue Mix Separate-ROX	100 x 20µL reactions	[1 x 1mL mix] & [1 x 200µL ROX]	PB20.27-01
	500 x 20µL reactions	[5 x 1mL mix] & [1 x 200µL ROX]	PB20.27-05
	2000 x 20µL reactions	[20 x 1mL mix] & [4 x 200µL ROX]	PB20.27-20
	5000 x 20µL reactions	[1 x 50mL bottle mix] & [2 x 520µL ROX]	PB20.27-50
	5000 x 20µL reactions	[50 x 1mL mix] & [2 x 520µL ROX] in pouch	PB20.27-51

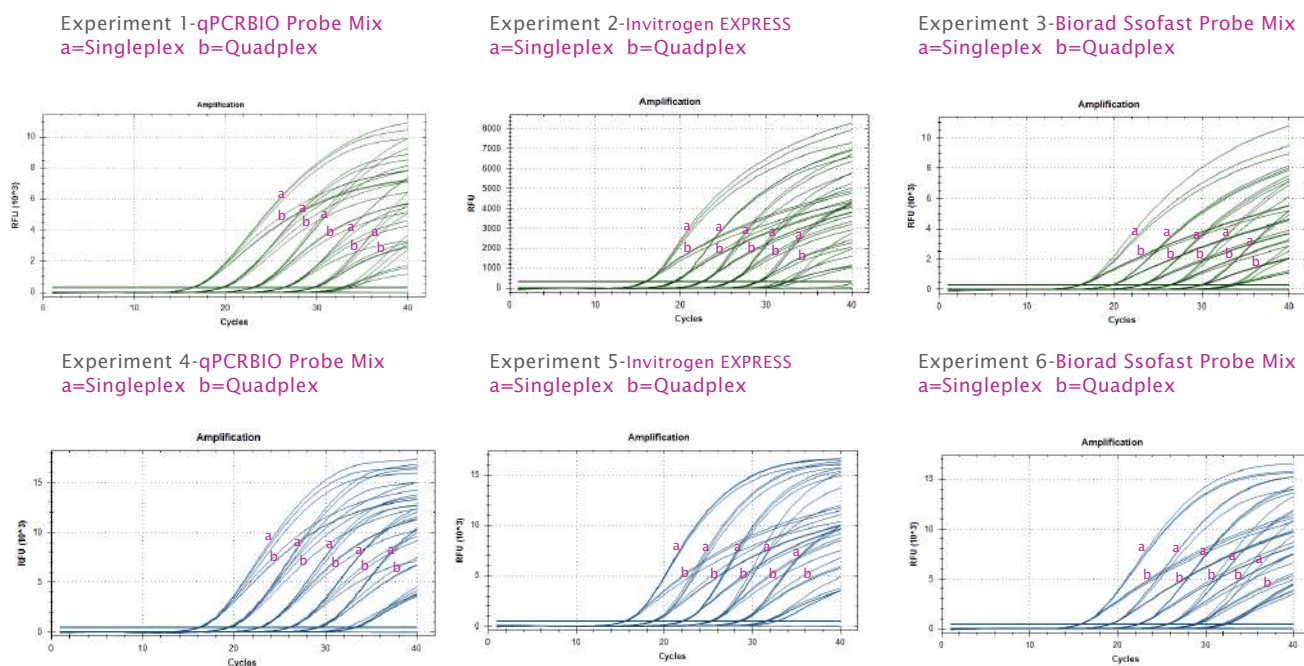


Figure 2.

Experiments 1-3 show TaqMan® probe amplification traces of human gene ACVR2B in singleplex and in quadplex (ACVR2B, LIMK1, ACVR1B and CDK7) from a cDNA dilution series. qPCRBIO Probe Mix shows the least PCR inhibition when in multiplex compared to Invitrogen and Biorad mixes. This is evident in more delayed amplification traces in quadplex (b) compared to singleplex (a). Experiments 4-6 show TaqMan® probe amplification traces of human gene LIMK1 in singleplex and quadplex (ACVR2B, LIMK1, ACVR1B and CDK7). As with experiments 1-3, LIMK1 amplification is less inhibited in multiplex in the qPCRBIO Probe Mix than the competitor mixes tested. Cycling conditions were 95°C 2min, 40 cycles of 95°C 10sec, 60°C 15sec on Biorad CFX instrument.

qPCRBIO Probe Mix	Pack size	Presentation	Cat. no.
qPCRBIO Probe Mix Lo-ROX	100 x 20µL reactions	1 x 1mL	PB20.21-01
	500 x 20µL reactions	5 x 1mL	PB20.21-05
	2000 x 20µL reactions	20 x 1mL	PB20.21-20
	5000 x 20µL reactions	1 x 50mL bottle	PB20.21-50
	5000 x 20µL reactions	50 x 1mL in pouch	PB20.21-51
qPCRBIO Probe Mix Hi-ROX	100 x 20µL reactions	1 x 1mL	PB20.22-01
	500 x 20µL reactions	5 x 1mL	PB20.22-05
	2000 x 20µL reactions	20 x 1mL	PB20.22-20
	5000 x 20µL reactions	1 x 50mL bottle	PB20.22-50
	5000 x 20µL reactions	50 x 1mL in pouch	PB20.22-51
qPCRBIO Probe Mix No-ROX	100 x 20µL reactions	1 x 1mL	PB20.23-01
	500 x 20µL reactions	5 x 1mL	PB20.23-05
	2000 x 20µL reactions	20 x 1mL	PB20.23-20
	5000 x 20µL reactions	1 x 50mL bottle	PB20.23-50
	5000 x 20µL reactions	50 x 1mL in pouch	PB20.23-51
qPCRBIO Probe Mix Separate-ROX	100 x 20µL reactions	[1 x 1mL mix] & [1 x 200µL ROX]	PB20.24-01
	500 x 20µL reactions	[5 x 1mL mix] & [1 x 200µL ROX]	PB20.24-05
	2000 x 20µL reactions	[20 x 1mL mix] & [4 x 200µL ROX]	PB20.24-20
	5000 x 20µL reactions	[1 x 50mL bottle mix] & [2 x 520µL ROX]	PB20.24-50
	5000 x 20µL reactions	[50 x 1mL mix] & [2 x 520µL ROX] in pouch	PB20.24-51

# qPCRBIO Genotyping Mix

qPCRBIO Genotyping Mix is designed for fast, accurate and reproducible allelic discrimination for use in TaqMan® and other dual-labelled probe-based genotyping assays.

Antibody-mediated hot start technology combined with advanced buffer chemistry gives highly sensitive and specific real-time PCR resulting in superior allele clustering. qPCRBIO Genotyping Mix is able to accurately call class I to class IV mutations and is compatible with LNA and PNA probes for more stringent allele calling.

## Features

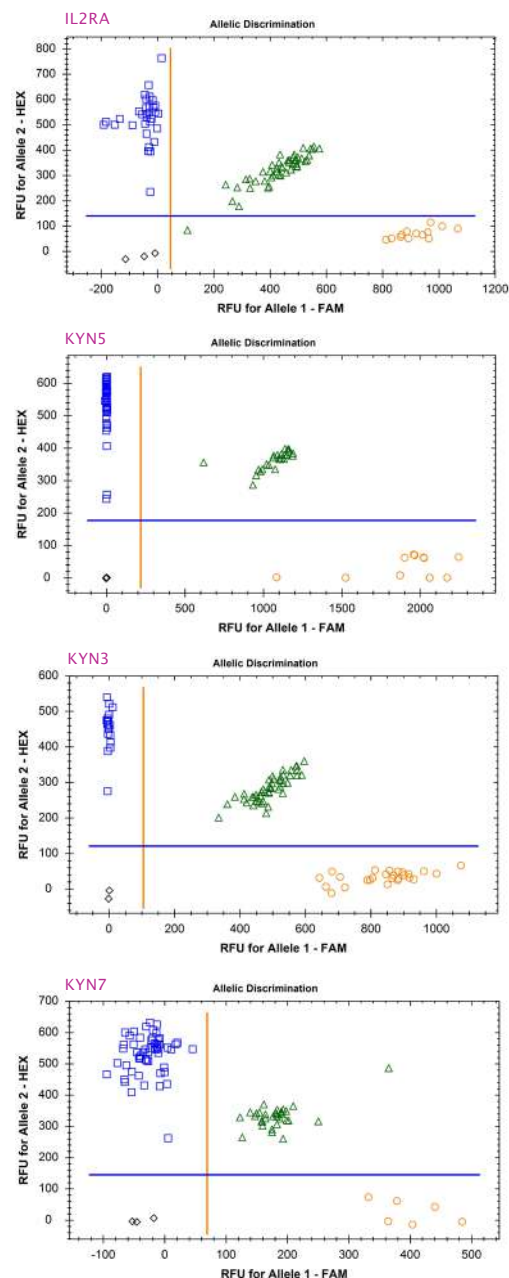
- Accurate genotype calling
- Superior allele clustering
- Antibody-mediated hot start for improved sensitivity
- Compatible with all standard and fast cycling real-time instruments

## Applications

- Genotyping single nucleotide polymorphisms (SNPs)
- TaqMan® allelic discrimination assays
- TaqMan® predesigned SNP genotyping assays
- High-throughput genotyping studies

Figure 1.

Extracted genomic DNA from 96 human samples was analysed at 4 loci using TaqMan® probes and qPCRBIO Genotyping Mix. The analysis was performed on a Biorad CFX96 instrument and analysed using the Biorad CFX Manager software version 3.0. Single nucleotide polymorphisms (SNPs) within 4 genes were analysed: IL2RA (A/G), KYN3 (T/G), KYN5 (A/C), KYN7 (A/T). For each SNP analysed, high confidence, clear clustering of homozygous w/t, homozygous mutant and heterozygous was demonstrated. qPCRBIO Genotyping Mix provides a fast, accurate and reliable 2x mix for reproducible allelic discrimination.



qPCRBIO Genotyping Mix	Pack size	Presentation	Cat. no.
qPCRBIO Genotyping Mix Lo-ROX	100 x 20µL reactions	1 x 1mL	PB20.41-01
	500 x 20µL reactions	5 x 1mL	PB20.41-05
	2000 x 20µL reactions	20 x 1mL	PB20.41-20
qPCRBIO Genotyping Mix Hi-ROX	100 x 20µL reactions	1 x 1mL	PB20.42-01
	500 x 20µL reactions	5 x 1mL	PB20.42-05
	2000 x 20µL reactions	20 x 1mL	PB20.42-20
qPCRBIO Genotyping Mix No-ROX	100 x 20µL reactions	1 x 1mL	PB20.43-01
	500 x 20µL reactions	5 x 1mL	PB20.43-05
	2000 x 20µL reactions	20 x 1mL	PB20.43-20



# qPCRBIO HRM Mix

High Resolution Melt is a powerful post-PCR technique for the analysis of mutations, polymorphisms and epigenetic differences in double stranded DNA samples.

Samples are characterized based on DNA strand dissociation behavior as temperature is increased in the presence of a fluorescent dye. qPCRBIO HRM Mix uses SyGreen 2, a 3<sup>rd</sup> generation non-PCR inhibiting saturating dye which produces ultra-sensitive melt profiles capable of discriminating class I to IV mutations as well as CpG methylation differences.

## Features

- 3<sup>rd</sup> generation saturating dye SyGreen 2
- Ultra-sensitive fluorescence profile
- Antibody-mediated hot start for improved sensitivity
- Accurate discrimination of class I to IV SNP mutations and CpG methylation differences
- Compatible with all standard and fast cycling real-time instruments

## Applications

- Accurate SNP genotyping
- Gene scanning
- CpG methylation analysis

Figure 1.

Figures 1-4 show HRM analysis of class I, II, III and IV single nucleotide polymorphisms. In each case, three samples of human genomic DNA were amplified using qPCRBIO HRM Mix with primers specific for a fragment of gene containing the SNPs. Figure 1 shows Factor V 1691G/A (class I), figure 2 shows MTHFR 1298A/C (class II), figure 3 shows HFE 187 C/G (class III) and figure 4 shows beta-globulin 17A/T (class IV). After amplification the products were subjected to HRM analysis. The traces show clear allele calling of class I, II, III and IV SNPs.

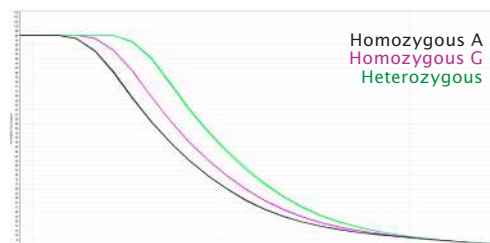


Figure 1. Class I SNP - Factor V 1691G/A

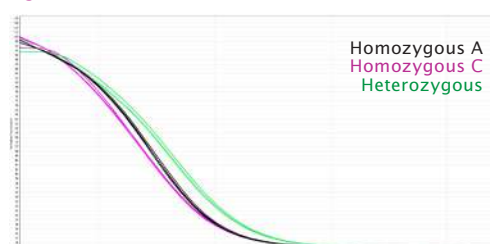


Figure 2. Class II SNP - MTHFR 1298A/C

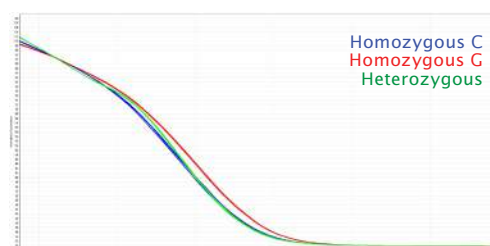


Figure 3. Class III SNP - HFE 187C/G

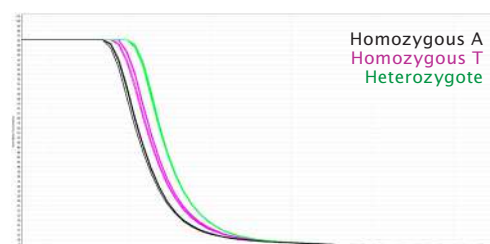


Figure 4. Class IV SNP - Beta Globulin 17A/T

qPCRBIO HRM Mix	Pack size	Presentation	Cat. no.
qPCRBIO HRM Mix	100 x 20µL reactions	1 x 1mL	PB20.31-01
	500 x 20µL reactions	5 x 1mL	PB20.31-05
	2000 x 20µL reactions	20 x 1mL	PB20.31-20

# qPCRBIO SyGreen 1-Step Detect 1-Step Go

- Thermostable reverse transcription
- Sensitive
- Early Ct

qPCRBIO SyGreen 1-Step Kits have been designed for fast, highly specific and ultra-sensitive cDNA synthesis and real-time PCR in a single tube.

The kits can be used to quantify any RNA template including mRNA, total RNA and viral RNA sequences. qPCRBIO SyGreen 1-Step Detect is designed for sensitivity and is ideally suited to the detection of extremely low copy number targets. qPCRBIO SyGreen 1-Step Go gives the earliest Ct and is formulated for rapid and accurate results from high template concentrations.

By combining antibody-mediated hot start technology and advanced buffer chemistry together with a thermostable and extremely active modified MMLV reverse transcriptase, qPCRBIO SyGreen 1-Step Kits offer market-leading performance with minimal or no optimisation required.

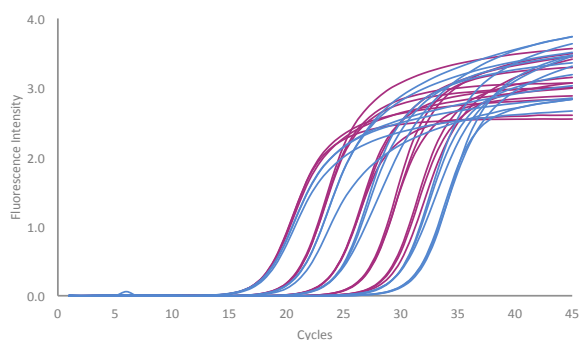
## Features

- Thermostable reverse transcriptase 45°C to 55°C
- Advanced RNase inhibitor
- Non-PCR inhibiting intercalating dye
- Rapid extension rate for early Ct values
- Market-leading sensitivity
- Increased limit of detection
- Antibody-mediated hot start PCR
- Compatible on all standard and fast cycling real-time PCR platforms

## Applications

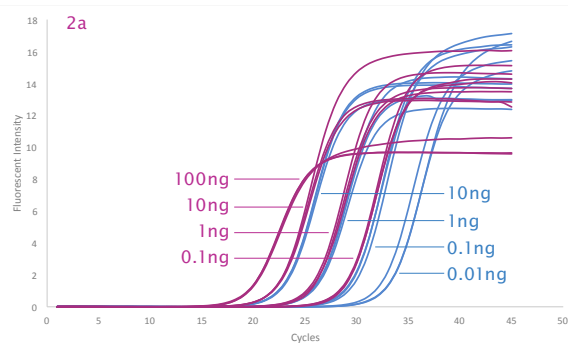
- Absolute quantification
- Relative gene expression analysis
- Detection of extremely low copy number targets
- qPCRBIO SyGreen 1-Step Detect recommended for template amounts of 1pg-10ng total RNA or >0.01pg mRNA per reaction
- qPCRBIO SyGreen 1-Step Go recommended for template amounts of 10pg-100ng total RNA or >0.01pg mRNA per reaction

qPCRBIO SyGreen 1-Step Detect   1-Step Go	Pack size	Presentation	Cat. no.
qPCRBIO SyGreen 1-Step Detect Lo-ROX	100 x 20µL reactions	[1 x 1mL mix] & [1 x 200µL RTase]	PB25.11-01
	300 x 20µL reactions	[3 x 1mL mix] & [3 x 200µL RTase]	PB25.11-03
	1200 x 20µL reactions	[12 x 1mL mix] & [12 x 200µL RTase]	PB25.11-12
qPCRBIO SyGreen 1-Step Detect Hi-ROX	100 x 20µL reactions	[1 x 1mL mix] & [1 x 200µL RTase]	PB25.12-01
	300 x 20µL reactions	[3 x 1mL mix] & [3 x 200µL RTase]	PB25.12-03
	1200 x 20µL reactions	[12 x 1mL mix] & [12 x 200µL RTase]	PB25.12-12
qPCRBIO SyGreen 1-Step Go Lo-ROX	100 x 20µL reactions	[1 x 1mL mix] & [1 x 100µL RTase Go]	PB25.31-01
	300 x 20µL reactions	[3 x 1mL mix] & [3 x 100µL RTase Go]	PB25.31-03
	1200 x 20µL reactions	[12 x 1mL mix] & [12 x 100µL RTase Go]	PB25.31-12
qPCRBIO SyGreen 1-Step Go Hi-ROX	100 x 20µL reactions	[1 x 1mL mix] & [1 x 100µL RTase Go]	PB25.32-01
	300 x 20µL reactions	[3 x 1mL mix] & [3 x 100µL RTase Go]	PB25.32-03
	1200 x 20µL reactions	[12 x 1mL mix] & [12 x 100µL RTase Go]	PB25.32-12



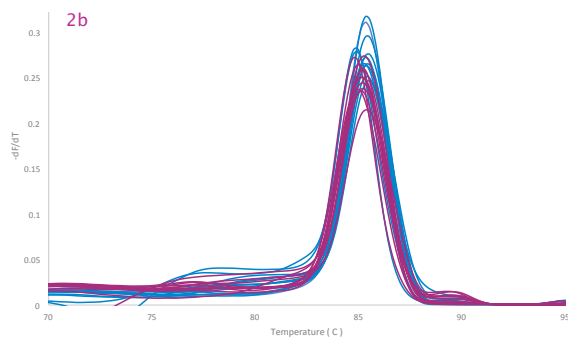
**Figure 1. Comparison of qPCRBIO SyGreen 1-Step Go (purple) against competitor Bioline (blue)**

Shows amplification traces of the ACTG1 gene from a dilution series of total RNA extracted from mouse liver. Total RNA concentration varied from 25pg to 250ng per 20µl reaction. Cycling conditions were 45°C 10 minutes for cDNA synthesis, followed by 95°C 2 minutes hot start, then 45 cycles of 95°C 10sec, 60°C 10sec on Roche LC480. 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 dimer.



**Figure 2. Comparison of qPCRBIO SyGreen 1-Step Detect (blue) and qPCRBIO SyGreen 1-Step Go (purple), showing ideal template ranges for each product**

The ACTG1 gene was amplified from a dilution series of total RNA extracted from mouse liver. qPCRBIO SyGreen 1-Step Go (purple) shows efficient amplification of total RNA in the range 100pg to 100ng per reaction. qPCRBIO SyGreen 1-Step Detect (blue) shows efficient amplification of total RNA in the range 10pg to 10ng per reaction (figure 2a). Cycling conditions were 45°C 10min for cDNA synthesis, followed by 95°C 2min hot start, then 45 cycles of 95°C 10sec, 60°C 30sec, concluding with a melt analysis (figure 2b) on a Roche LC480.



# qPCRBIO Probe 1-Step Go

- Thermostable reverse transcription
- Sensitive
- Early Ct

qPCRBIO Probe 1-Step Go uses the latest developments in enzyme technology and buffer chemistry to give fast, efficient cDNA synthesis and subsequent real-time PCR in a single tube.

This universal probe kit is engineered for use on a wide range of probe technologies and can be used to quantify any RNA template including mRNA, total RNA and viral RNA sequences. qPCRBIO Probe 1-Step Go is designed to give rapid and accurate results over a broad range of template concentrations and is ideally suited to the detection of extremely low copy number targets.

The kit includes a thermostable and extremely active reverse transcriptase and advanced RNase inhibitor. Antibody-mediated hot start technology prevents primer dimer formation and non-specific amplification giving highly specific and ultra-sensitive real-time RT-PCR with unrivalled efficiency in multiplex.

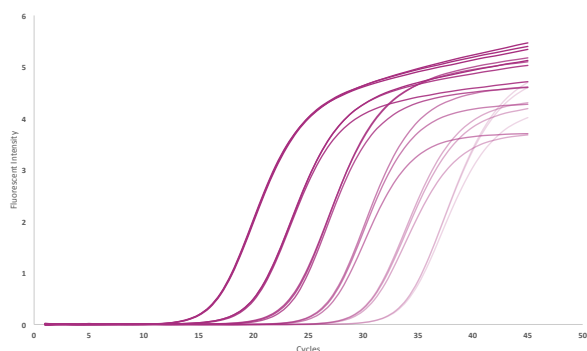
## Features

- High efficiency in multiplex reactions
- Thermostable reverse transcriptase 45°C to 55°C
- Advanced RNase inhibitor
- Rapid extension rate for early Ct values
- Market-leading sensitivity
- Increased limit of detection
- Antibody-mediated hot start PCR
- Compatible on all standard and fast cycling real-time PCR platforms

## Applications

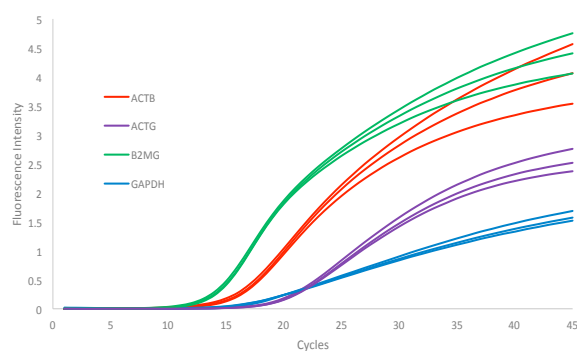
- Absolute quantification
- Relative gene expression analysis
- TaqMan®, Scorpions® and molecular beacon probes
- Detection of extremely low copy number targets
- Multiplex or singleplex
- Diagnostic real-time PCR





**Figure 1. High efficiency and broad dynamic range**

Shows TaqMan® probe amplification traces of mouse gene ACTB using mouse liver total RNA as template in triplicate. Template concentrations are 10x serial dilutions ranging from 10pg to 1µg total RNA per 20µl reaction. Cycling conditions were 45°C 10min, 95°C 3min, then 45 cycles of 95°C 10s, 60°C 30s. qPCR BIO Probe 1-Step Go shows high efficiency over a broad dynamic range.



**Figure 2. qPCR BIO Probe 1-Step Go in multiplex**

Four mouse housekeeping genes were amplified simultaneously in a single multiplex reaction. 1µg 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 10min, 95°C 3min, then 45 cycles of 95°C 10s, 60°C 30s. This demonstrates that the qPCR BIO Probe 1-Step Go mix can be used to quantify and compare expression levels of multiple genes in a single reaction.

qPCR BIO Probe 1-Step Go	Pack size	Presentation	Cat. no.
qPCR BIO Probe 1-Step Go Lo-ROX	100 x 20µL reactions	[1 x 1mL mix] & [1 x 100µL RTase Go]	PB25.41-01
	300 x 20µL reactions	[3 x 1mL mix] & [3 x 100µL RTase Go]	PB25.41-03
	1200 x 20µL reactions	[12 x 1mL mix] & [12 x 100µL RTase Go]	PB25.41-12
qPCR BIO Probe 1-Step Go Hi-ROX	100 x 20µL reactions	[1 x 1mL mix] & [1 x 100µL RTase Go]	PB25.42-01
	300 x 20µL reactions	[3 x 1mL mix] & [3 x 100µL RTase Go]	PB25.42-03
	1200 x 20µL reactions	[12 x 1mL mix] & [12 x 100µL RTase Go]	PB25.42-12
qPCR BIO Probe 1-Step Go No-ROX	100 x 20µL reactions	[1 x 1mL mix] & [1 x 100µL RTase Go]	PB25.43-01
	300 x 20µL reactions	[3 x 1mL mix] & [3 x 100µL RTase Go]	PB25.43-03
	1200 x 20µL reactions	[12 x 1mL mix] & [12 x 100µL RTase Go]	PB25.43-12

# Endpoint **PCR**



- Enhanced polymerases
- Advanced buffer chemistry
- 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	PCRBIO VeriFi Polymerase	PCRBIO Rapid Extract PCR kit	PCRBIO 1-Step Go RT-PCR kit
<b>Properties</b>								
Amplicon length	<6kb	<6kb	<6kb	<10kb	<10kb	<20kb	<6kb	<6kb
Fidelity vs Taq	x1	x1	x1	x3	x50	x100	x1	x1
3'→5' exonuclease (proofreading) activity				◇	◇	◇		
Hot start		◇		◇			◇	◇
High fidelity				◇	◇	◇		
Sensitivity	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●
Specificity	●●	●●●	●●	●●●	●●●●	●●●●	●●●	●●●
Stability at room temperature	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●
<b>Available formats</b>								
Ready mix	◇	◇		◇		◇	◇	
Direct loading	◇	◇		◇		◇	◇	
<b>Applications</b>								
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

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.

For added convenience, PCRBIO Taq DNA Polymerase is available as a ready-to-use 2x mix containing all reaction components except primers and template. PCRBIO Taq Mix Red contains a red dye suitable for direct loading and tracking during agarose gel electrophoresis.

## Features

- Increased PCR success rates with amplicons up to 6kb
- Ultra-low background DNA
- Advanced buffer chemistry including Mg and dNTP
- Efficient specific amplification from GC and AT-rich sequences
- High yields under standard and fast PCR conditions
- Stable at 25°C and 37°C for 4 weeks

## Applications

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

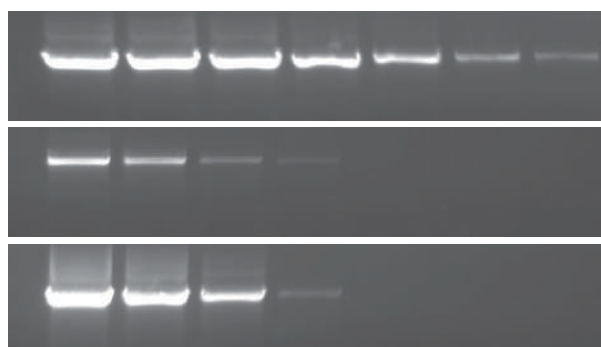


Figure 1.

Shows amplification of a 1.2kb fragment of 60% GC GADPH from human genomic DNA in a 3 fold dilution from left to right. Starting concentration is 200ng of DNA and is diluted to 0.7pg in the 7th dilution. PCRBIO Taq DNA Polymerase is able to amplify lower concentration template DNA compared with competitor P and I (rows 2 and 3).

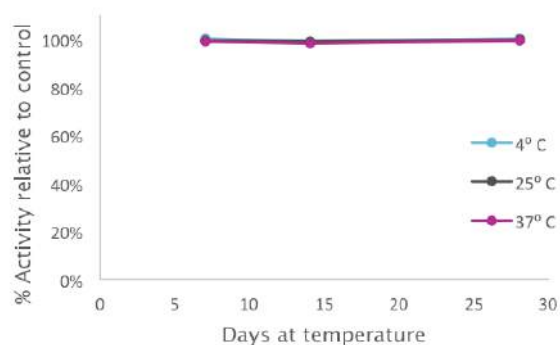


Figure 2.

No change in activity is detected in PCRBIO Taq DNA Polymerase after 28 days at 4°C, 25°C and 37°C.

PCRBIO Taq DNA Polymerase	Pack size	Presentation	Cat. no.
PCRBIO Taq DNA Polymerase	500 units	[1 x 0.1mL 5u/μL] & [4 x 1mL buffer]	PB10.11-05
	2000 units	[4 x 0.1mL 5u/μL] & [16 x 1mL buffer]	PB10.11-20
	4000 units	[8 x 0.1mL 5u/μL] & [32 x 1mL buffer]	PB10.11-40
PCRBIO Taq Mix	200 x 50μL reactions	5 x 1mL	PB10.12-02
	1000 x 50μL reactions	5 x (5 x 1mL)	PB10.12-10
PCRBIO Taq Mix Red	200 x 50μL reactions	5 x 1mL	PB10.13-02
	1000 x 50μL reactions	5 x (5 x 1mL)	PB10.13-10



# PCRBIO HS Taq DNA Polymerase

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.

PCRBIO HS Taq DNA Polymerase is also available as a convenient, ready-to-use 2x mix containing all reaction components except primers and template. PCRBIO HS Taq Mix Red contains a pre-loaded red dye for direct gel loading.

## Features

- Hot start technology for unrivalled detection of low copy number templates
- Increased PCR success rates with amplicons up to 6kb
- Ultra-low background DNA
- Advanced buffer chemistry including Mg and dNTP
- Efficient specific amplification from GC and AT-rich sequences
- High yields under standard and fast PCR conditions
- Stable at 25°C and 37°C for 4 weeks

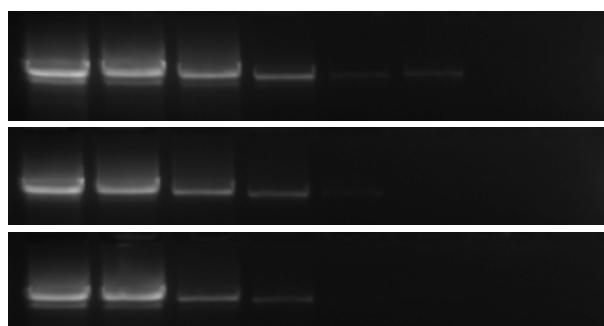


Figure 1.

Shows amplification of a 400bp gene from human genomic DNA under fast cycling conditions (40 cycles of 95°C 5sec, 60°C 5sec). A 10 fold dilution series of template starting from 100ng was used. The top row is PCRBIO HS Taq DNA Polymerase, the 2nd row is an equivalent product from Kapa Biosystems and the 3rd row is an equivalent product from Invitrogen.

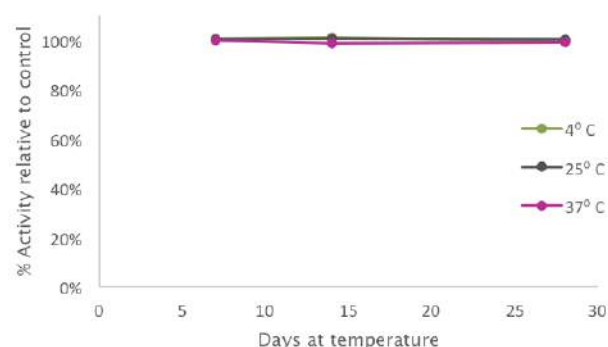


Figure 2.

No change in activity is detected in PCRBIO HS Taq DNA Polymerase after 28 days at 4°C, 25°C and 37°C.

## Applications

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

PCRBIO HS Taq DNA Polymerase	Pack size	Presentation	Cat. no.
PCRBIO HS Taq DNA Polymerase	250 units	[1 x 0.05mL 5u/μL] & [2 x 1mL buffer]	PB10.21-02
	1000 units	[4 x 0.05mL 5u/μL] & [8 x 1mL buffer]	PB10.21-10
	5000 units	[20 x 0.05mL 5u/μL] & [40 x 1mL buffer]	PB10.21-50
PCRBIO HS Taq Mix	200 x 50μL reactions	5 x 1mL	PB10.22-02
	1000 x 50μL reactions	5 x (5 x 1mL)	PB10.22-10
PCRBIO HS Taq Mix Red	200 x 50μL reactions	5 x 1mL	PB10.23-02
	1000 x 50μL reactions	5 x (5 x 1mL)	PB10.23-10

# PCRBIO Ultra Polymerase

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 or AT-rich, low in abundance or contains PCR inhibitors.

The enzyme and buffer system have been developed to give superior PCR performance and higher success rates on a broad range of templates, including complex genomic DNA and targets with a high GC content (up to 80% GC). PCRBIO Ultra Polymerase exhibits a high tolerance to PCR inhibitors making it the ideal choice for colony and crude sample PCR.

## 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 complex templates including GC and AT-rich sequences
- 3 fold higher fidelity than Taq
- Stable at 25°C for 4 weeks

## Applications

- Crude sample PCR
- Colony PCR
- Long range PCR
- Multiplex PCR
- TA cloning
- Next generation sequencing

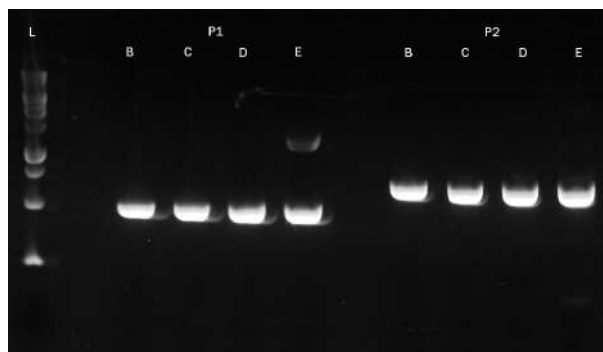


Figure 1. GC-rich products visualised on agarose gel

Amplification of 0.5kb (P1) and 0.6kb (P2) fragments of the ATXN2 gene with GC contents of 69% and 71% respectively, using 20ng 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.

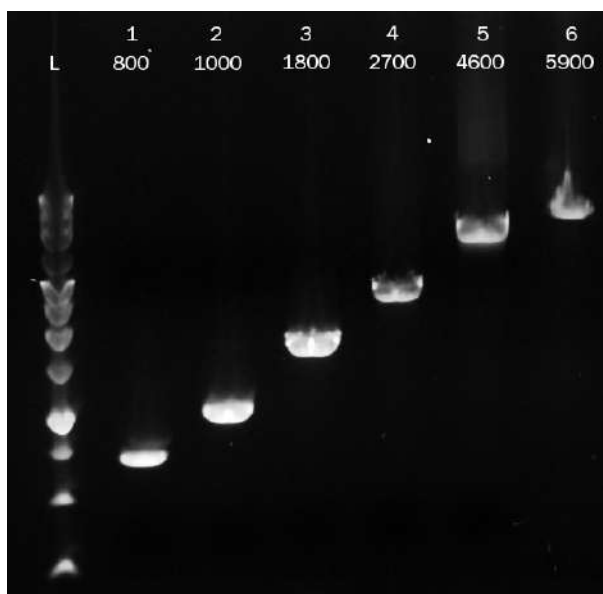


Figure 2. Long PCR products visualised on agarose gel

Amplification of 0.8kb, 1.0kb, 1.8kb, and 2.7kb fragments of the GAPDH gene, a 4.6kb fragment of the RBL15 gene, and a 5.9kb fragment of the MYH6 gene. The starting template amount is 20ng (50ng for the 5.9kb fragment) of mouse genomic DNA and is diluted 2 to 5 fold. PCRBIO Ultra Polymerase amplifies the range of fragment lengths indicated with high yield and specificity.

PCRBIO Ultra Polymerase	Pack size	Presentation	Cat. no.
PCRBIO Ultra Polymerase	250 units	[1 x 0.05mL 5u/μL] & [2 x 1mL buffer]	PB10.31-02
	1000 units	[4 x 0.05mL 5u/μL] & [8 x 1mL buffer]	PB10.31-10
PCRBIO Ultra Mix	80 x 50μL reactions	2 x 1mL	PB10.32-01
	400 x 50μL reactions	5 x (2 x 1mL)	PB10.32-05
PCRBIO Ultra Mix Red	80 x 50μL reactions	2 x 1mL	PB10.33-01
	400 x 50μL reactions	5 x (2 x 1mL)	PB10.33-05

# PCRBIO HiFi Polymerase

PCRBIO HiFi Polymerase is a versatile high fidelity enzyme possessing 3'-5' exonuclease proofreading activity. Enhanced DNA binding gives inherently high processivity, increased yields and shorter cycling times while minimising PCR inhibition from impure samples such as colony and direct PCR.

Advanced buffer chemistry together with the latest developments in polymerase technology give increased PCR success rates with amplicons up to 10kb. PCRBIO HiFi Polymerase is room temperature stable for 4 weeks and is ideally suited to the robust amplification of complex templates including problematic GC and AT-rich targets.

## Features

- Derived from Pfu DNA Polymerase
- 50x higher fidelity than Taq DNA polymerase
- Increased success rates with amplicons up to 10kb
- Advanced buffer chemistry including Mg and dNTPs
- High yields under standard and fast PCR conditions
- Efficient specific amplification from complex templates including GC-rich and AT-rich sequences
- Stable at 25°C and 37°C for 4 weeks

## Applications

- High fidelity PCR
- Blunt end cloning
- Site directed mutagenesis
- Long range PCR
- Next generation sequencing
- 'Difficult' PCR - GC and AT-rich DNA
- Crude sample PCR

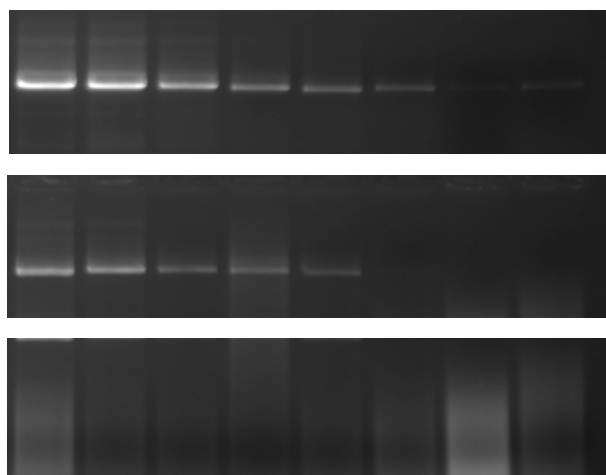


Figure 1.

Shows amplification of a 5kb amplicon from GAPDH derived from purified human genomic DNA. A 2 fold template dilution series was made from a starting concentration of 100ng of DNA. 25 cycles of 30sec denaturation, 30sec annealing and 75sec extension were completed in 1 hour. The top row shows PCRBIO HiFi Polymerase, the 2nd row an equivalent product from Finnzymes and the 3rd row standard Pfu.

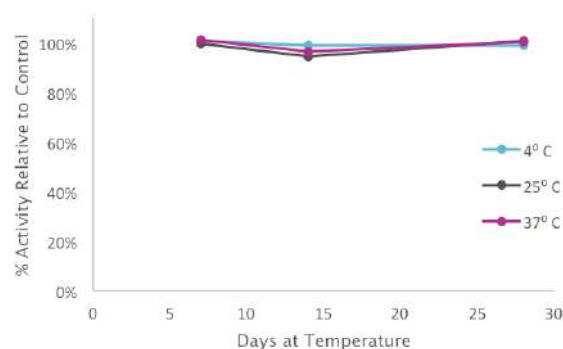


Figure 2.

No change in activity is detected in PCRBIO HiFi Polymerase after 28 days at 4°C, 25°C and 37°C.

PCRBIO HiFi Polymerase	Pack size	Presentation	Cat. no.
PCRBIO HiFi Polymerase	200 units	[1 x 0.1mL 2u/μL] & [3 x 1mL buffer]	PB10.41-02
	1000 units	[5 x 0.1mL 2u/μL] & [15 x 1mL buffer]	PB10.41-10

# PCRBIO VeriFi Polymerase



- High fidelity
- Long range
- Superior sensitivity

PCRBIO VeriFi Polymerase is a versatile and robust high fidelity enzyme 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.

PCRBIO VeriFi Polymerase is derived from Pfu DNA polymerase for its 3'-5' exonuclease proof-reading 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 means even GC-rich templates can be amplified.

The high accuracy and enhanced 3'-5' exonuclease activity of PCRBIO VeriFi Polymerase result in extremely low error rates and fidelity that is approximately 100 times higher than Taq DNA polymerase. The enzyme is ideal for applications where superior accuracy is required, such as cloning, site-directed mutagenesis and sequencing. PCR products generated with this range of products are blunt ended.

## Features

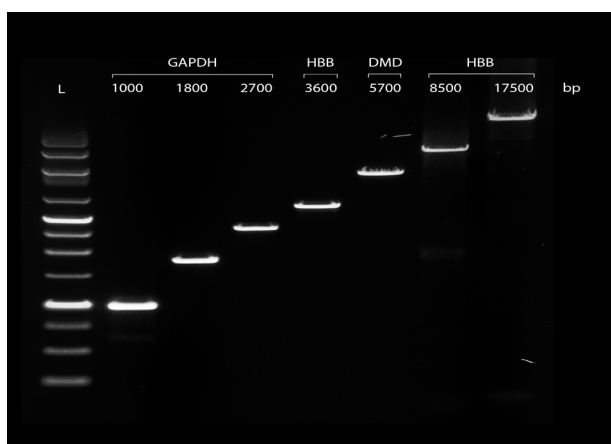
- High temperature cycling - up to 100°C denaturation
- Efficient and specific amplification from challenging templates including GC and AT-rich sequences
- Increased PCR success rates with complex genomic templates (17.5kb and over)
- High yields under standard and fast PCR conditions (10-30s/kb)
- 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
- Long range PCR
- Site-directed mutagenesis
- Cloning
- Sequencing

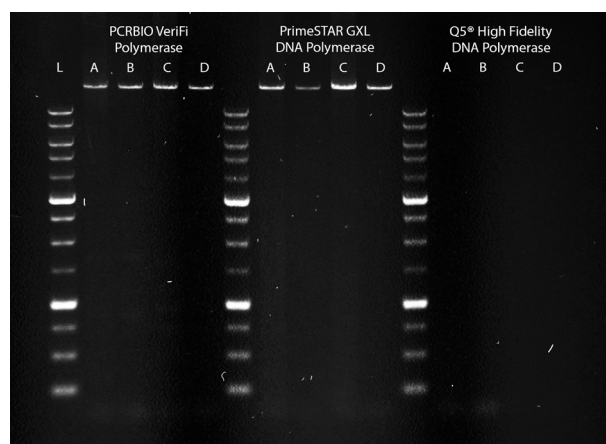
PCRBIO VeriFi Polymerase	Pack size	Presentation	Cat. no.
PCRBIO VeriFi Polymerase	100 units	[1 x 0.05mL 2u/μL] & [1 x 1.7mL buffer]	PB10.42-01
	500 units	[1 x 0.250mL 2u/μL] & [3 x 1.7mL buffer]	PB10.42-05
PCRBIO VeriFi Mix	100 x 50μL reactions	2 x 1.25mL	PB10.43-01
	500 x 50μL reactions	2 x (5 x 1.25mL)	PB10.43-05
PCRBIO VeriFi Mix Red	100 x 50μL reactions	2 x 1.25mL	PB10.44-01
	500 x 50μL reactions	2 x (5 x 1.25mL)	PB10.44-05





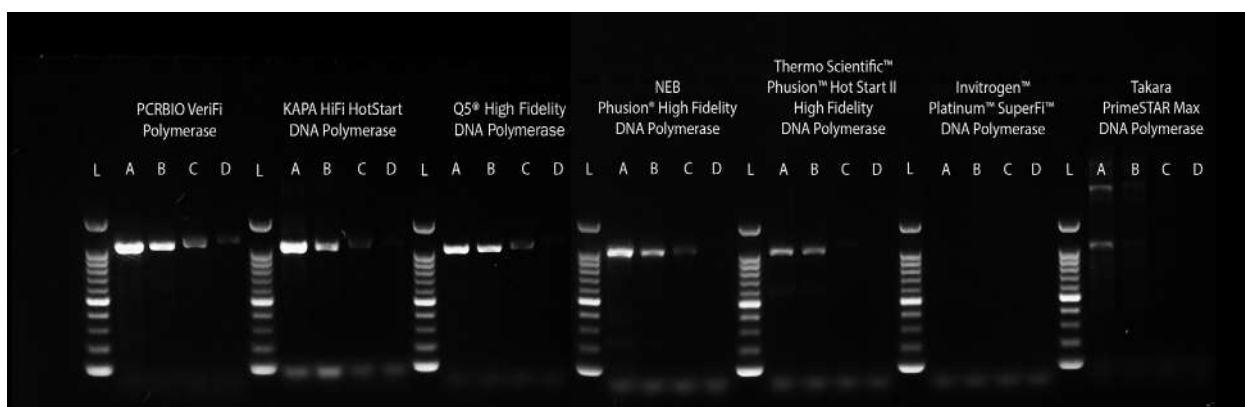
**Figure 1. Versatility across a broad range of amplicon lengths**

PCRBIOL VeriFi Polymerase amplifies the range of fragment lengths indicated with high yield and specificity. The starting template amount is 4-30ng of mouse or human genomic DNA, diluted 1.5 to 3 fold. GC content ranges from 37-55%. L: PCRBIOL Ladder II.



**Figure 2. Increased success rates with complex templates**

Amplification of a 17.5kb fragment of the HBB gene. The starting template amount is 150ng (A and C) and 30ng (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%. PCRBIOL VeriFi Polymerase amplifies long fragments with yields comparable to Takara PrimeSTAR GXL DNA Polymerase. L: PCRBIOL Ladder II.



**Figure 3. Amplification of targets with high sensitivity and specificity compared to leading competitors**

Amplification of a 1.0kb fragment of the GAPDH gene with different starting template amounts of mouse genomic DNA. A: 20ng, B: 3.2ng, C: 0.5ng, D: 0.08ng. GC content is 51%. L: PCRBIOL 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. PCRBIOL VeriFi Polymerase displays greater sensitivity and specificity compared to leading competitors.

# PCRBIO Classic Taq

PCRBIO Classic Taq is a highly purified recombinant Taq DNA Polymerase for all your everyday PCR applications including genotyping, screening and library construction.

The enzyme and buffer system provide enhanced PCR speed, yield and specificity allowing for superior performance on complex templates such as mammalian genomic DNA. PCRBIO Classic Taq performs consistently well on a broad range of templates including both GC and AT-rich. PCR products generated with PCRBIO Classic Taq are A-tailed and may be cloned into TA cloning vectors.

## Features

- Increased PCR success rates with amplicons up to 6kb
- Advanced buffer chemistry
- High yields under standard and fast PCR conditions
- Efficient specific amplification from complex templates including GC and AT-rich sequences

## Applications

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

PCRBIO Classic Taq	Pack size	Presentation	Cat. no.
PCRBIO Classic Taq	1000 units	[2 x 0.1mL 5u/μL] & [4 x 1mL buffer]	PB10.15-01
	2000 units	[4 x 0.1mL 5u/μL] & [8 x 1mL buffer]	PB10.15-02
	6000 units	[12 x 0.1mL 5u/μL] & [24 x 1mL buffer]	PB10.15-06

# PCRBIO

## 1-Step Go RT-PCR Kit

PCRBIO 1-Step Go RT-PCR Kit is a convenient, easy-to-use kit for fast and efficient cDNA synthesis and PCR in a single tube. The advanced buffer system, reverse transcriptase and hot start polymerase give highly specific and ultra-sensitive 1-step RT-PCR from any RNA template including mRNA, total RNA and viral RNA sequences.

The kit combines our thermostable and extremely active reverse transcriptase with an advanced RNase inhibitor to enhance cDNA synthesis speed and yield. Antibody-mediated hot start technology prevents the formation of primer dimers and non-specific amplification giving robust RT-PCR performance with minimal or no optimisation required.

### Features

- Thermostable reverse transcription 45°C to 55°C
- Advanced RNase inhibitor
- Antibody-mediated hot start technology for unrivalled detection of low copy number templates
- High PCR yields under standard and fast PCR conditions
- Efficient specific amplification from complex templates including GC and AT-rich sequences

### Applications

- Gene expression analysis
- Transcription analysis
- Gene cloning
- Multiplex RT-PCR

PCRBIO 1-Step Go RT-PCR Kit	Pack size	Presentation	Cat. no.
PCRBIO 1-Step Go RT-PCR Kit	50 x 50µL reactions	[1 x 1.25mL mix] & [1 x 125µL RTase]	PB10.53-05
	100 x 50µL reactions	[2 x 1.25mL mix] & [2 x 125µL RTase]	PB10.53-10
	500 x 50µL reactions	[10 x 1.25mL mix] & [10 x 125µL RTase]	PB10.53-50

# PCRBIO Rapid Extract PCR Kit



- Fast
- Convenient
- Reliable



Add sample  
directly to  
lysis buffer



5-10 minute  
incubation



10 minute inactivation  
and pellet debris by  
centrifugation



Add to PCRBIO HS  
Taq Mix Red and  
amplify

PCRBIO Rapid Extract PCR Kit combines rapid DNA extraction with fast, highly specific DNA amplification in a convenient, easy-to-use format. Eliminate the need for laborious and time-consuming DNA extraction methods with this simple, integrated extraction and amplification kit powered by the latest advances in hot start polymerase technology.

PCRBIO Rapid Extract PCR Kit is particularly suited to solid tissue such as mouse tail or mouse ear. Sample processing is simplified and contamination risks minimised as DNA extraction is performed in a single tube, removing the need for multiple washing steps. Extracted DNA is amplified using hot start technology to enhance PCR speed, yield and sensitivity. The kit offers superior specificity, ideal for complex templates such as mammalian genomic DNA.

PCRBIO Rapid Extract Lysis Kit contains only the lysis and protease buffer system, allowing the generation of PCR-ready DNA for use in downstream PCR or qPCR reactions.

## Features

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

## Samples

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

## Applications

- Genotyping
- Transgene detection
- Knockout analysis
- Sequencing

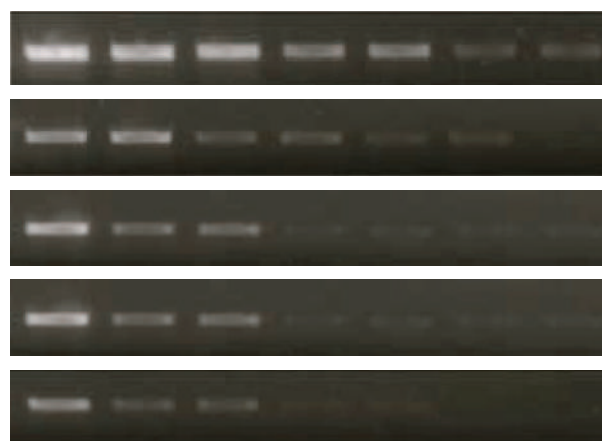


Figure 1. Mouse tail DNA rapid extraction comparison

PCRBIO Rapid Extract PCR Kit was used to extract DNA from 3mg of mouse tail clipping following the standard 15min protocol. The extraction was repeated using equivalent extraction kits from alternative manufacturers. A serial three-fold dilution series was made from each supernatant. PCRBIO HS Taq Mix Red was used to amplify a 1kb fragment of mouse GAPDH gene from each dilution. Results were compared by agarose gel electrophoresis. Row 1 shows results from PCR Biosystems, row 2 Kapa Biosystems, row 3 Bioline, row 4 Sigma and row 5 Fermentas.

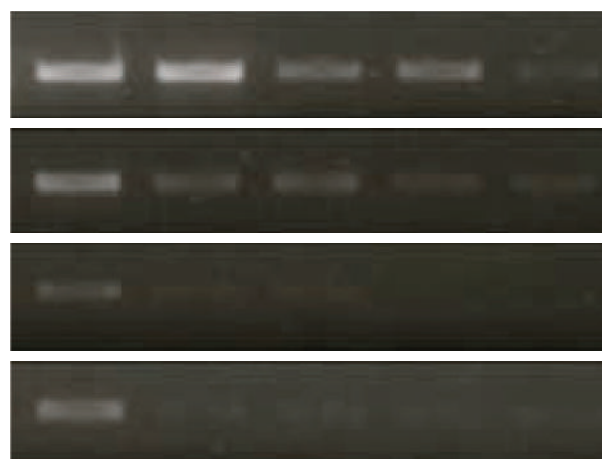


Figure 2. Mouse ear DNA rapid extraction and 2.5kb amplification using supplied PCR reagent

PCRBIO Rapid Extract PCR Kit was used to extract DNA from 3mg of mouse ear clipping following the standard 15min protocol. The extraction was repeated using equivalent extraction kits from alternative manufacturers. A serial two fold dilution series was made from each supernatant. The supplied polymerase was used to amplify a 2.5kb fragment of the mouse Calnexin gene from each dilution. Results were compared by agarose gel electrophoresis. Row 1 shows results from PCR Biosystems, row 2 Kapa Biosystems, row 3 Bioline and row 4 Sigma.

PCRBIO Rapid Extract Kits	Pack size	Presentation	Cat. no.
PCRBIO Rapid Extract PCR Kit	80 x 50µL reactions	[2 x 1mL mix] & [1 x 1.6mL buffer A] & [1 x 0.8mL buffer B]	PB10.24-08
	400 x 50µL reactions	[10 x 1mL mix] & [5 x 1.6mL buffer A] & [5 x 0.8mL buffer B]	PB10.24-40
PCRBIO Rapid Extract Lysis Kit	80 x 50µL reactions	[1 x 1.6mL buffer A] & [1 x 0.8mL buffer B]	PB15.11-08
	240 x 50µL reactions	[3 x 1.6mL buffer A] & [3 x 0.8mL buffer B]	PB15.11-24



# PCRBIO DNA Markers

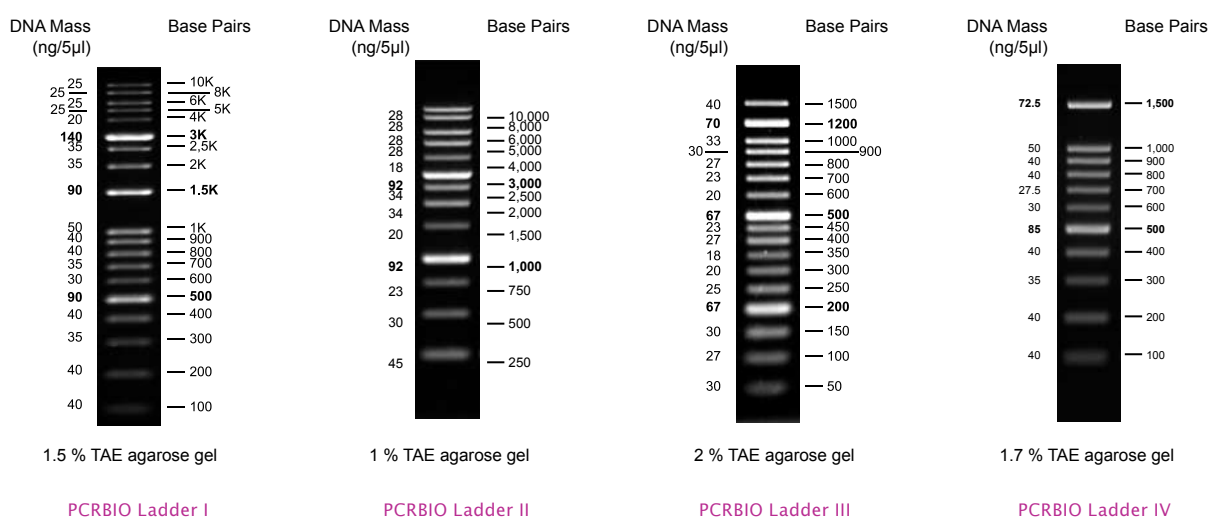
PCRBIO Ladders I-IV are designed for easy size determination and DNA quantification using agarose gel electrophoresis.

The ladders are room temperature stable and ready for immediate gel loading. They cover a wide range (from 50bp to 10kb) and contain loading dye for simple migration observation.

All four PCRBIO Ladders are manufactured using a combination of plasmid restriction digest fragments and PCR amplification products.

## Features

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



DNA Markers	Pack size	Presentation	Cat. no.
PCRBIO Ladder I (100bp - 10kb)	100 lanes	[1 x 0.5mL ladder] & [1 x 0.4mL loading dye]	PB40.11-01
	500 lanes	[5 x 0.5mL ladder] & [1 x 2.0mL loading dye]	PB40.11-05
PCRBIO Ladder II (250bp - 10kb)	100 lanes	[1 x 0.5mL ladder] & [1 x 0.4mL loading dye]	PB40.12-01
	500 lanes	[5 x 0.5mL ladder] & [1 x 2.0mL loading dye]	PB40.12-05
PCRBIO Ladder III (50bp - 1500bp)	100 lanes	[1 x 0.5mL ladder] & [1 x 0.4mL loading dye]	PB40.13-01
	500 lanes	[5 x 0.5mL ladder] & [1 x 2.0mL loading dye]	PB40.13-05
PCRBIO Ladder IV (100bp - 1500bp)	100 lanes	[1 x 0.5mL ladder] & [1 x 0.4mL loading dye]	PB40.14-01
	500 lanes	[5 x 0.5mL ladder] & [1 x 2.0mL loading dye]	PB40.14-05

# PCRBIO dNTP MIX

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

The mix is ultra pure (more than 99%), stable after multiple freeze-thaw cycles and perfect for a wide variety of applications including standard PCR, real-time PCR, high-fidelity PCR, 1-Step PCR and long range PCR. 95% dNTPs in triphosphate form after 5 weeks at room temperature.

## Features

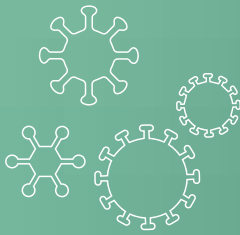
- Ultra pure
- Stable
- Versatile

## Applications

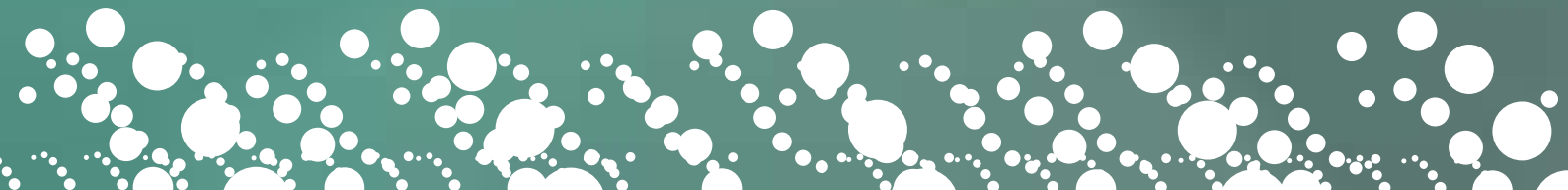
- Standard PCR
- Real-time PCR
- High fidelity PCR
- 1-Step PCR
- Isothermal amplification
- DNA sequencing

PCRBIO dNTP Mix	Pack size	Presentation	Cat. no.
PCRBIO dNTP Mix 10mM each (40mM total)	10mM each	1 x 0.5mL	PB10.71-05
	10mM each	1 x 1mL	PB10.71-10
PCRBIO dNTP Mix 25mM each (100mM total)	25mM each	1 x 0.5mL	PB10.72-05
	25mM each	1 x 1mL	PB10.72-10

# cDNA Synthesis



- Thermostable reverse transcriptases
- High yields
- Versatile





# PCRBIO cDNA Synthesis Kit

High quality cDNA synthesis is essential for downstream real-time PCR analysis and successful expression studies. qPCRBIO cDNA Synthesis Kit is an easy-to-use 2 tube system specifically developed to generate cDNA for use in real-time PCR.

The reverse transcriptase, buffer system and optimised blend of random hexamers with anchored oligo(dT) primers provide unbiased, efficient and sensitive cDNA synthesis over a broad range of RNA template concentrations.

The kit combines a thermostable and extremely active modified MMLV reverse transcriptase with advanced RNase inhibitor to enhance cDNA synthesis speed and yield with accurate transcript representation. The enzyme is not inhibited by ribosomal and transfer RNAs making total RNA an ideal substrate.

## Features

- Unbiased representation of 5' and 3' mRNA transcript ends
- High cDNA yields from as little as 4pg total RNA
- Simple 2 tube system
- Reduced RNase H activity
- 20x thermostable reverse transcriptase blended with RNase Inhibitor
- 5x buffer contains anchored oligo(dT), random hexamers, enhancers, dNTPs and MgCl<sub>2</sub>

## Applications

- cDNA synthesis for real-time PCR analysis
- Low copy number transcripts
- Viral RNA and miRNA targets
- Efficient synthesis from total RNA or poly(A)<sup>+</sup> RNA

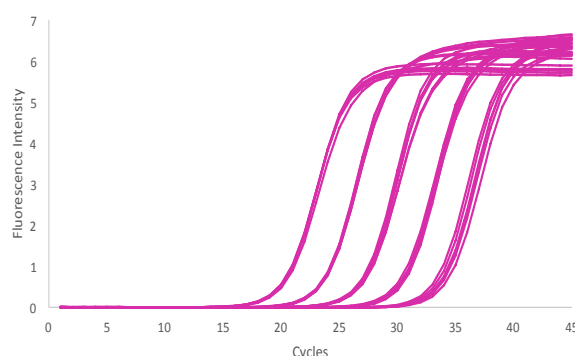


Figure 1. Broad reverse transcription dynamic range

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

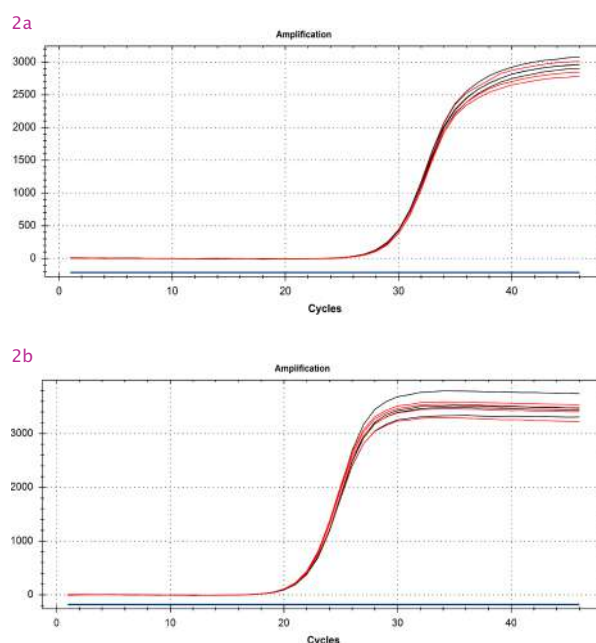


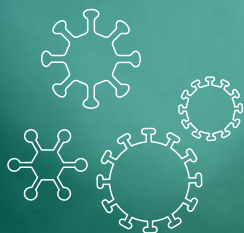
Figure 2. Unbiased representation of mRNA ends

2a) qPCRBIO cDNA Synthesis Kit was used to synthesise cDNA from mouse liver total RNA. 2 primer pairs were designed against the 5' (red traces) and the 3' (black traces) ends of the 4.2kb mouse CANX transcript. qPCRBIO SyGreen Mix was used for analysis. The primer pairs were 4kb apart and did not show any reverse transcription bias, hence the amplification traces overlap.

2b) 2 primer pairs against the 5' (red) and 3' (black) traces of RNS18 gene (1.8kb). Again, no reverse transcription bias was evident.

qPCRBIO cDNA Synthesis Kit	Pack size	Presentation	Cat. no.
qPCRBIO cDNA Synthesis Kit	25 x 20µL reactions	[1 x 0.1mL mix] & [1 x 0.025mL RTase]	PB30.11-02
	100 x 20µL reactions	[4 x 0.1mL mix] & [1 x 0.1mL RTase]	PB30.11-10

# UltraScript Reverse Transcriptase



- Thermostable
- Flexible
- High yield

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 give efficient and sensitive cDNA synthesis.

The enhanced thermostability of UltraScript Reverse Transcriptase enables the reaction temperature to be increased up to 55°C, providing higher specificity and efficient transcription of RNA regions with a high secondary structure.

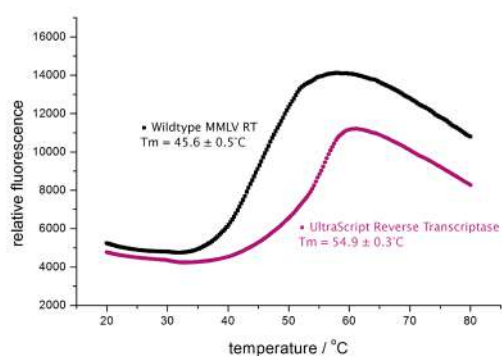
The enzyme is supplied with a 5x buffer containing Mg, dNTPs, stabilizers and enhancers. As oligos are not included, UltraScript Reverse Transcriptase provides the flexibility for users to define their own priming strategy. The enzyme gives exceptional performance with gene-specific primers, oligo-dT and random hexamers to produce high quality cDNA ideal for a variety of downstream applications.

## Features

- Thermostable reverse transcriptase 45°C to 55°C
- Advanced RNase inhibitor
- High cDNA yields from as little as 4pg total RNA
- Accurate reverse transcription of GC-rich templates
- Sensitive detection of low copy number transcripts
- Reduced RNase H activity
- Advanced buffer chemistry including Mg and dNTPs

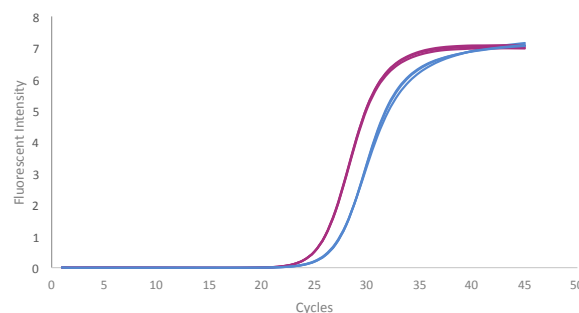
## Applications

- Random hexamer, oligo-dT and gene-specific primers
- cDNA synthesis for PCR analysis, cloning, library preparation and Next Generation Sequencing
- Low copy number transcripts
- Viral RNA targets
- miRNA targets
- Efficient synthesis from total RNA or poly(A)+ RNA



**Figure 1. Thermostable enzyme up to 55°C**

The thermostability of UltraScript Reverse Transcriptase was measured using the Sypro Orange fluorescence assay. The protein is incubated with Sypro Orange dye and the temperature gradually increased. The fluorescence intensity increases as the protein unfolds and the melting point is the temperature where 50% of the protein is unfolded. The DSF curve shows UltraScript Reverse Transcriptase (purple) and wildtype MMLV RT (black) at 0.1mg/ml. This experiment shows that UltraScript Reverse Transcriptase unfolds at  $54.9 \pm 0.3^\circ\text{C}$ , which is  $9.3^\circ\text{C}$  higher than the wildtype enzyme, indicating it is more thermostable and more likely to remain active during the reaction.

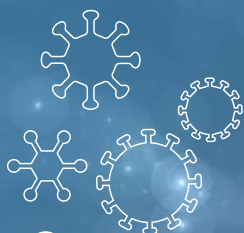


**Figure 2. Generation of high cDNA yields**

cDNA was created from 100ng of total RNA from mouse liver using UltraScript Reverse Transcriptase (purple) and a competitor mix (blue).  $5\mu\text{M}$  oligo-dT<sub>(18)</sub> and  $5\mu\text{M}$  random hexamers were added as primers. The reaction was incubated for 10 minutes at  $42^\circ\text{C}$ . The resulting cDNA was quantified using qPCR BIO SyGreen Mix. PCR Biosystems UltraScript Reverse Transcriptase created >10x more cDNA than the competitor in the same amount of time.

UltraScript Reverse Transcriptase	Pack size	Presentation	Cat. no.
UltraScript Reverse Transcriptase	10,000 units	[2 x 25 $\mu\text{L}$ 200 u/ $\mu\text{L}$ ] & [1 x 200 $\mu\text{L}$ buffer]	PB30.12-01
	40,000 units	[2 x 100 $\mu\text{L}$ 200 u/ $\mu\text{L}$ ] & [4 x 200 $\mu\text{L}$ buffer]	PB30.12-04

# UltraScript 2.0 Reverse Transcriptase and cDNA Synthesis Kits



- Highly thermostable
- Superior yields
- Versatile

UltraScript 2.0 Reverse Transcriptase is a highly thermostable reverse transcriptase engineered for superior cDNA synthesis speed, yield and representation of the most challenging RNA sample types, including GC-rich and low abundance templates.

This modified MMLV reverse transcriptase can be used with reaction temperatures of over 55°C, giving improved specificity, higher cDNA yields and more full length cDNA product. The enzyme remains partially active even up to 90°C and is designed for efficient reverse transcription of the most difficult RNA templates, including GC-rich and highly structured transcripts.

UltraScript 2.0 Reverse Transcriptase gives sensitive and efficient cDNA synthesis from a broad range of RNA concentrations and can be used with 20pg to 3.5µg total RNA or oligo(dT) purified mRNA. 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.

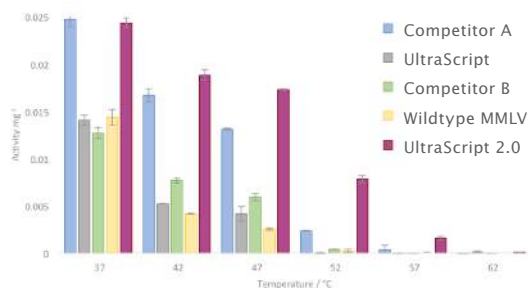
## Features

- Highly thermostable reverse transcriptase 55°C to 65°C and above
- Advanced RNase inhibitor
- High cDNA yields from as little as 20pg total RNA
- Accurate reverse transcription of GC-rich and highly structured transcripts
- Sensitive detection of low copy number 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

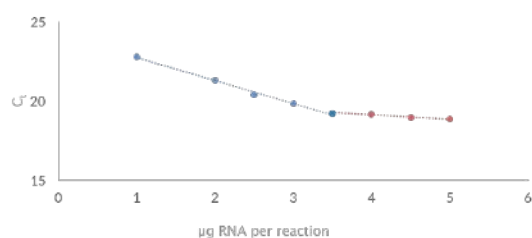
- cDNA synthesis for qPCR and PCR analysis, cloning, cDNA library preparation and next generation sequencing
- Viral RNA targets
- miRNA targets
- Efficient synthesis from total RNA or poly(A)+ RNA

UltraScript 2.0 Reverse Transcriptase	Pack size	Presentation	Cat. no.
UltraScript 2.0 Reverse Transcriptase	10,000 units	[2 x 25µL UltraScript 2.0, 200 u/µL] & [1 x 200µL buffer]	PB30.33-01
	40,000 units	[2 x 100µL UltraScript 2.0, 200 u/µL] & [4 x 200µL buffer]	PB30.33-04
UltraScript 2.0 cDNA Synthesis Kit	25 x 20µL reactions	[1 x 25µL UltraScript 2.0] & [1 x 100µL reaction mix]	PB30.31-02
	100 x 20µL reactions	[1 x 100µL UltraScript 2.0] & [4 x 100µL reaction mix]	PB30.31-10
UltraScript 2.0 cDNA Synthesis Kit Separate Oligos	25 x 20µL reactions	[1 x 25µL UltraScript 2.0] & [1 x 200µL buffer] & [1 x 100µL Anchored Oligo(dT) <sub>18</sub> ] & [1 x 100µL Random Hexamers]	PB30.32-02
	100 x 20µL reactions	[1 x 100µL UltraScript 2.0] & [2 x 200µL buffer] & [1 x 100µL Anchored Oligo(dT) <sub>18</sub> ] & [1 x 100µL Random Hexamers]	PB30.32-10



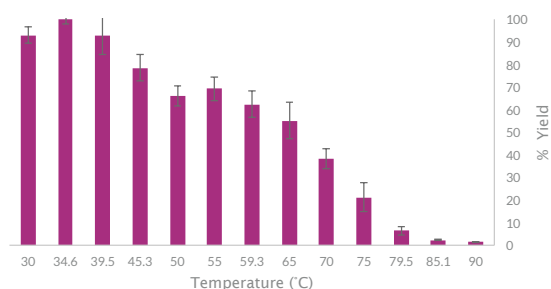
**Figure 1. Higher specific activity at elevated temperatures**

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.



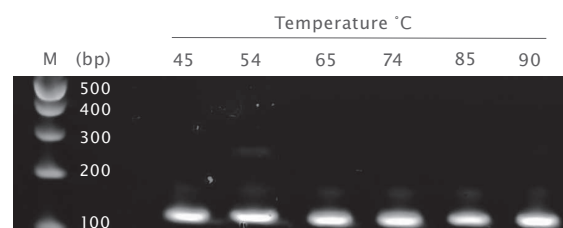
**Figure 2. Increased upper limit of RNA per reaction**

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



**Figure 3. 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 qPCR BIO SyGreen Mix. Up to 65°C, UltraScript 2.0 Reverse Transcriptase shows little change in yield (with  $\Delta Ct$  values within  $\pm 1$  Ct range), and remains partially active up to 90°C.



**Figure 4. Highly thermostable reverse transcriptase**

UltraScript 2.0 Reverse Transcriptase gives 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 qPCR BIO SyGreen Mix and visualised on EtBr 1% agarose gel.



# PRODUCT List

Real-Time PCR Mixes - 2x mix includes dNTPs, MgCl<sub>2</sub>, enhancers and stabilizers

Product name	Technique	Pack size	Presentation	Cat. no.
qPCRBIO SyGreen Mix Lo-ROX	SyGreen real-time PCR	100 x 20µL reactions	1 x 1mL	PB20.11-01
	SyGreen real-time PCR	500 x 20µL reactions	5 x 1mL	PB20.11-05
	SyGreen real-time PCR	2000 x 20µL reactions	20 x 1mL	PB20.11-20
	SyGreen real-time PCR	5000 x 20µL reactions	1 x 50mL bottle	PB20.11-50
	SyGreen real-time PCR	5000 x 20µL reactions	50 x 1mL in pouch	PB20.11-51
qPCRBIO SyGreen Mix Hi-ROX	SyGreen real-time PCR	100 x 20µL reactions	1 x 1mL	PB20.12-01
	SyGreen real-time PCR	500 x 20µL reactions	5 x 1mL	PB20.12-05
	SyGreen real-time PCR	2000 x 20µL reactions	20 x 1mL	PB20.12-20
	SyGreen real-time PCR	5000 x 20µL reactions	1 x 50mL bottle	PB20.12-50
	SyGreen real-time PCR	5000 x 20µL reactions	50 x 1mL in pouch	PB20.12-51
qPCRBIO SyGreen Mix with Fluorescein	SyGreen real-time PCR	100 x 20µL reactions	1 x 1mL	PB20.13-01
	SyGreen real-time PCR	500 x 20µL reactions	5 x 1mL	PB20.13-05
	SyGreen real-time PCR	2000 x 20µL reactions	20 x 1mL	PB20.13-20
qPCRBIO SyGreen Mix Separate-ROX	SyGreen real-time PCR	100 x 20µL reactions	[1 x 1mL mix] & [1 x 200µL ROX]	PB20.14-01
	SyGreen real-time PCR	500 x 20µL reactions	[5 x 1mL mix] & [1 x 200µL ROX]	PB20.14-05
	SyGreen real-time PCR	2000 x 20µL reactions	[20 x 1mL mix] & [4 x 200µL ROX]	PB20.14-20
	SyGreen real-time PCR	5000 x 20µL reactions	[1 x 50mL bottle mix] & [2 x 520µL ROX]	PB20.14-50
	SyGreen real-time PCR	5000 x 20µL reactions	[50 x 1mL mix] & [2 x 520µL ROX] in pouch	PB20.14-51
qPCRBIO SyGreen Blue Mix Lo-ROX	SyGreen real-time PCR	100 x 20µL reactions	1 x 1mL	PB20.15-01
	SyGreen real-time PCR	500 x 20µL reactions	5 x 1mL	PB20.15-05
	SyGreen real-time PCR	2000 x 20µL reactions	20 x 1mL	PB20.15-20
	SyGreen real-time PCR	5000 x 20µL reactions	1 x 50mL bottle	PB20.15-50
	SyGreen real-time PCR	5000 x 20µL reactions	50 x 1mL in pouch	PB20.15-51
qPCRBIO SyGreen Blue Mix Hi-ROX	SyGreen real-time PCR	100 x 20µL reactions	1 x 1mL	PB20.16-01
	SyGreen real-time PCR	500 x 20µL reactions	5 x 1mL	PB20.16-05
	SyGreen real-time PCR	2000 x 20µL reactions	20 x 1mL	PB20.16-20
	SyGreen real-time PCR	5000 x 20µL reactions	1 x 50mL bottle	PB20.16-50
	SyGreen real-time PCR	5000 x 20µL reactions	50 x 1mL in pouch	PB20.16-51
qPCRBIO SyGreen Blue Mix Separate-ROX	SyGreen real-time PCR	100 x 20µL reactions	[1 x 1mL mix] & [1 x 200µL ROX]	PB20.17-01
	SyGreen real-time PCR	500 x 20µL reactions	[5 x 1mL mix] & [1 x 200µL ROX]	PB20.17-05
	SyGreen real-time PCR	2000 x 20µL reactions	[20 x 1mL mix] & [4 x 200µL ROX]	PB20.17-20
	SyGreen real-time PCR	5000 x 20µL reactions	[1 x 50mL bottle mix] & [2 x 520µL ROX]	PB20.17-50
	SyGreen real-time PCR	5000 x 20µL reactions	[50 x 1mL mix] & [2 x 520µL ROX] in pouch	PB20.17-51
qPCRBIO Probe Mix Lo-ROX	probe-based assays	100 x 20µL reactions	1 x 1mL	PB20.21-01
	probe-based assays	500 x 20µL reactions	5 x 1mL	PB20.21-05
	probe-based assays	2000 x 20µL reactions	20 x 1mL	PB20.21-20
	probe-based assays	5000 x 20µL reactions	1 x 50mL bottle	PB20.21-50
	probe-based assays	5000 x 20µL reactions	50 x 1mL in pouch	PB20.21-51
qPCRBIO Probe Mix Hi-ROX	probe-based assays	100 x 20µL reactions	1 x 1mL	PB20.22-01
	probe-based assays	500 x 20µL reactions	5 x 1mL	PB20.22-05
	probe-based assays	2000 x 20µL reactions	20 x 1mL	PB20.22-20
	probe-based assays	5000 x 20µL reactions	1 x 50mL bottle	PB20.22-50
	probe-based assays	5000 x 20µL reactions	50 x 1mL in pouch	PB20.22-51
qPCRBIO Probe Mix No-ROX	probe-based assays	100 x 20µL reactions	1 x 1mL	PB20.23-01
	probe-based assays	500 x 20µL reactions	5 x 1mL	PB20.23-05
	probe-based assays	2000 x 20µL reactions	20 x 1mL	PB20.23-20
	probe-based assays	5000 x 20µL reactions	1 x 50mL bottle	PB20.23-50
	probe-based assays	5000 x 20µL reactions	50 x 1mL in pouch	PB20.23-51
qPCRBIO Probe Mix Separate-ROX	probe-based assays	100 x 20µL reactions	[1 x 1mL mix] & [1 x 200µL ROX]	PB20.24-01
	probe-based assays	500 x 20µL reactions	[5 x 1mL mix] & [1 x 200µL ROX]	PB20.24-05
	probe-based assays	2000 x 20µL reactions	[20 x 1mL mix] & [4 x 200µL ROX]	PB20.24-20
	probe-based assays	5000 x 20µL reactions	[1 x 50mL bottle mix] & [2 x 520µL ROX]	PB20.24-50
	probe-based assays	5000 x 20µL reactions	[50 x 1mL mix] & [2 x 520µL ROX] in pouch	PB20.24-51

## Real-Time PCR Mixes - 2x mix includes dNTP, MgCl<sub>2</sub>, enhancers and stabilizers

Product name	Technique	Pack size	Presentation	Cat. no.
qPCRBIO Probe Blue Mix Lo-ROX	probe-based assays	100 x 20µL reactions	1 x 1mL	PB20.25-01
	probe-based assays	500 x 20µL reactions	5 x 1mL	PB20.25-05
	probe-based assays	2000 x 20µL reactions	20 x 1mL	PB20.25-20
	probe-based assays	5000 x 20µL reactions	1 x 50mL bottle	PB20.25-50
	probe-based assays	5000 x 20µL reactions	50 x 1mL in pouch	PB20.25-51
qPCRBIO Probe Blue Mix Hi-ROX	probe-based assays	100 x 20µL reactions	1 x 1mL	PB20.26-01
	probe-based assays	500 x 20µL reactions	5 x 1mL	PB20.26-05
	probe-based assays	2000 x 20µL reactions	20 x 1mL	PB20.26-20
	probe-based assays	5000 x 20µL reactions	1 x 50mL bottle	PB20.26-50
	probe-based assays	5000 x 20µL reactions	50 x 1mL in pouch	PB20.26-51
qPCRBIO Probe Blue Mix Separate-ROX	probe-based assays	100 x 20µL reactions	[1 x 1mL mix] & [1 x 200µL ROX]	PB20.27-01
	probe-based assays	500 x 20µL reactions	[5 x 1mL mix] & [1 x 200µL ROX]	PB20.27-05
	probe-based assays	2000 x 20µL reactions	[20 x 1mL mix] & [4 x 200µL ROX]	PB20.27-20
	probe-based assays	5000 x 20µL reactions	[1 x 50mL bottle mix] & [2 x 520µL ROX]	PB20.27-50
	probe-based assays	5000 x 20µL reactions	[50 x 1mL mix] & [2 x 520µL ROX] in pouch	PB20.27-51
qPCRBIO Genotyping Mix Lo-ROX	probe-based genotyping	100 x 20µL reactions	1 x 1mL	PB20.41-01
	probe-based genotyping	500 x 20µL reactions	5 x 1mL	PB20.41-05
	probe-based genotyping	2000 x 20µL reactions	20 x 1mL	PB20.41-20
qPCRBIO Genotyping Mix Hi-ROX	probe-based genotyping	100 x 20µL reactions	1 x 1mL	PB20.42-01
	probe-based genotyping	500 x 20µL reactions	5 x 1mL	PB20.42-05
	probe-based genotyping	2000 x 20µL reactions	20 x 1mL	PB20.42-20
qPCRBIO Genotyping Mix No-ROX	probe-based genotyping	100 x 20µL reactions	1 x 1mL	PB20.43-01
	probe-based genotyping	500 x 20µL reactions	5 x 1mL	PB20.43-05
	probe-based genotyping	2000 x 20µL reactions	20 x 1mL	PB20.43-20
qPCRBIO HRM Mix	high resolution melt analysis	100 x 20µL reactions	1 x 1mL	PB20.31-01
	high resolution melt analysis	500 x 20µL reactions	5 x 1mL	PB20.31-05
	high resolution melt analysis	2000 x 20µL reactions	20 x 1mL	PB20.31-20
qPCRBIO SyGreen 1-Step Detect Lo-Rox	SyGreen qPCR from RNA	100 x 20µL reactions	[1 x 1mL mix] & [1 x 200µL RTase]	PB25.11-01
	SyGreen qPCR from RNA	300 x 20µL reactions	[3 x 1mL mix] & [3 x 200µL RTase]	PB25.11-03
	SyGreen qPCR from RNA	1200 x 20µL reactions	[12 x 1mL mix] & [12x 200µL RTase]	PB25.11-12
qPCRBIO SyGreen 1-Step Detect Hi-Rox	SyGreen qPCR from RNA	100 x 20µL reactions	[1 x 1mL mix] & [1 x 200µL RTase]	PB25.12-01
	SyGreen qPCR from RNA	300 x 20µL reactions	[3 x 1mL mix] & [3 x 200µL RTase]	PB25.12-03
	SyGreen qPCR from RNA	1200 x 20µL reactions	[12 x 1mL mix] & [12x 200µL RTase]	PB25.12-12
qPCRBIO SyGreen 1-Step Go Lo-Rox	SyGreen qPCR from RNA	100 x 20µL reactions	[1 x 1mL mix] & [1 x 100µL RTase]	PB25.31-01
	SyGreen qPCR from RNA	300 x 20µL reactions	[3 x 1mL mix] & [3 x 100µL RTase]	PB25.31-03
	SyGreen qPCR from RNA	1200 x 20µL reactions	[12 x 1mL mix] & [12x 100µL RTase]	PB25.31-12
qPCRBIO SyGreen 1-Step Go Hi-Rox	SyGreen qPCR from RNA	100 x 20µL reactions	[1 x 1mL mix] & [1 x 100µL RTase]	PB25.32-01
	SyGreen qPCR from RNA	300 x 20µL reactions	[3 x 1mL mix] & [3 x 100µL RTase]	PB25.32-03
	SyGreen qPCR from RNA	1200 x 20µL reactions	[12 x 1mL mix] & [12x 100µL RTase]	PB25.32-12
qPCRBIO Probe 1-Step Go Lo-Rox	Probe qPCR from RNA	100 x 20µL reactions	[1 x 1mL mix] & [1 x 100µL RTase]	PB25.41-01
	Probe qPCR from RNA	300 x 20µL reactions	[3 x 1mL mix] & [3 x 100µL RTase]	PB25.41-03
	Probe qPCR from RNA	1200 x 20µL reactions	[12 x 1mL mix] & [12x 100µL RTase]	PB25.41-12
qPCRBIO Probe 1-Step Go Hi-Rox	Probe qPCR from RNA	100 x 20µL reactions	[1 x 1mL mix] & [1 x 100µL RTase]	PB25.42-01
	Probe qPCR from RNA	300 x 20µL reactions	[3 x 1mL mix] & [3 x 100µL RTase]	PB25.42-03
	Probe qPCR from RNA	1200 x 20µL reactions	[12 x 1mL mix] & [12x 100µL RTase]	PB25.42-12
qPCRBIO Probe 1-Step Go No-Rox	Probe qPCR from RNA	100 x 20µL reactions	[1 x 1mL mix] & [1 x 100µL RTase]	PB25.43-01
	Probe qPCR from RNA	300 x 20µL reactions	[3 x 1mL mix] & [3 x 100µL RTase]	PB25.43-03
	Probe qPCR from RNA	1200 x 20µL reactions	[12 x 1mL mix] & [12x 100µL RTase]	PB25.43-12

## Enhanced Endpoint Polymerases - 5x buffer includes dNTPs, MgCl<sub>2</sub> and enhancers

Product name	Technique	Pack size	Presentation	Cat. no.
PCRBIO Taq DNA Polymerase	routine application PCR	500 units	[1 x 0.1mL 5u/μL] & [4 x 1mL buffer]	PB10.11-05
	routine application PCR	2000 units	[4 x 0.1mL 5u/μL] & [16 x 1mL buffer]	PB10.11-20
	routine application PCR	4000 units	[8 x 0.1mL 5u/μL] & [32 x 1mL buffer]	PB10.11-40
PCRBIO HS Taq DNA Polymerase	antibody-mediated hot start	250 units	[1 x 0.05mL 5u/μL] & [2 x 1mL buffer]	PB10.21-02
	antibody-mediated hot start	1000 units	[4 x 0.05mL 5u/μL] & [8 x 1mL buffer]	PB10.21-10
	antibody-mediated hot start	5000 units	[20 x 0.05mL 5u/μL] & [40 x 1mL buffer]	PB10.21-50
PCRBIO Ultra Polymerase	'difficult' PCR	250 units	[1 x 0.05mL 5u/μL] & [2 x 1mL buffer]	PB10.31-02
	'difficult' PCR	1000 units	[4 x 0.05mL 5u/μL] & [8 x 1mL buffer]	PB10.31-10
PCRBIO HiFi Polymerase	high fidelity PCR	200 units	[1 x 0.1mL 2u/μL] & [3 x 1mL buffer]	PB10.41-02
	high fidelity PCR	1000 units	[5 x 0.1mL 2u/μL] & [15 x 1mL buffer]	PB10.41-10
PCRBIO VeriFi Polymerase	long range and high fidelity PCR	100 units	[1 x 0.2mL 5u/μL] & [2 x 1.5mL buffer]	PB10.42-01
	long range and high fidelity PCR	500 units	[2 x 0.2mL 5u/μL] & [4 x 1.5mL buffer]	PB10.42-05

## Classic Taq - 10x buffer includes MgCl<sub>2</sub> and enhancers

Product name	Technique	Pack size	Presentation	Cat. no.
PCRBIO Classic Taq	classic PCR	1000 units	[2 x 0.1mL 5u/μL] & [4 x 1mL buffer]	PB10.15-01
	classic PCR	2000 units	[4 x 0.1mL 5u/μL] & [8 x 1mL buffer]	PB10.15-02
	classic PCR	6000 units	[12 x 0.1mL 5u/μL] & [24 x 1mL buffer]	PB10.15-06

## dNTP Mix - ultra pure dNTPs for PCR

Product name	Technique	Pack size	Presentation	Cat. no.
dNTP Mix 10mM each (40mM total)	classic PCR	10mM each	1 x 0.5mL	PB10.71-05
	classic PCR	10mM each	1 x 1mL	PB10.71-10
dNTP Mix 25mM each (100mM total)	classic PCR	25mM each	1 x 0.5mL	PB10.72-05
	classic PCR	25mM each	1 x 1mL	PB10.72-10

## Endpoint Ready Mixes - 2x mix includes dNTPs, MgCl<sub>2</sub> and enhancers and stabilizers

Product name	Technique	Pack size	Presentation	Cat. no.
PCRBIO Taq Mix	routine application PCR	200 x 50μL reactions	5 x 1mL	PB10.12-02
	routine application PCR	1000 x 50μL reactions	5 x (5 x 1mL)	PB10.12-10
PCRBIO Taq Mix Red	routine PCR, direct gel loading	200 x 50μL reactions	5 x 1mL	PB10.13-02
	routine PCR, direct gel loading	1000 x 50μL reactions	5 x (5 x 1mL)	PB10.13-10
PCRBIO HS Taq Mix	antibody-mediated hot start	200 x 50μL reactions	5 x 1mL	PB10.22-02
	antibody-mediated hot start	1000 x 50μL reactions	5 x (5 x 1mL)	PB10.22-10
PCRBIO HS Taq Mix Red	hot start, direct gel loading	200 x 50μL reactions	5 x 1mL	PB10.23-02
	hot start, direct gel loading	1000 x 50μL reactions	5 x (5 x 1mL)	PB10.23-10
PCRBIO Ultra Mix	'difficult' PCR	80 x 50μL reactions	5 x 1mL	PB10.32-01
	difficult PCR	400 x 50μL reactions	5 x (2 x 1mL)	PB10.32-05
PCRBIO Ultra Mix Red	'difficult' PCR, direct gel loading	80 x 50μL reactions	5 x 1mL	PB10.33-01
	'difficult' PCR, direct gel loading	400 x 50μL reactions	5 x (2 x 1mL)	PB10.33-05
PCRBIO VeriFi Mix	long range and high fidelity PCR	100 x 50μL reactions	2 x 1.25mL	PB10.43-01
	long range and high fidelity PCR	500 x 50μL reactions	5 x (2 x 1.25mL)	PB10.43-05
PCRBIO VeriFi Mix Red	high fidelity, direct gel loading	100 x 50μL reactions	2 x 1.25mL	PB10.44-01
	high fidelity, direct gel loading	500 x 50μL reactions	5 x (2 x 1.25mL)	PB10.44-05
PCRBIO 1-Step Go RT-PCR Kit	endpoint PCR from RNA	50 x 50μL reactions	[1 x 1.25mL mix] & [1 x 125μL RTase]	PB10.53-05
	endpoint PCR from RNA	100 x 50μL reactions	[2 x 1.25mL mix] & [2 x 125μL RTase]	PB10.53-10
	endpoint PCR from RNA	500 x 50μL reactions	[10 x 1.25mL mix] & [10 x 125μL RTase]	PB10.53-50



## DNA Extraction Kits - convenient, column free DNA extraction

Product name	Technique	Pack size	Presentation	Cat. no.
PCRBIO Rapid Extract PCR Kit	direct PCR from mammalian tissue	80 x 50µL reactions	[2 x 1mL PCRBIO HS Taq Mix Red] & [1 x 1.6mL buffer A] & [1 x 0.8mL buffer B]	PB10.24-08
	direct PCR from mammalian tissue	400 x 50µL reactions	[10 x 1mL PCRBIO HS Taq Mix Red] & [5 x 1.6mL buffer A] & [5 x 0.8mL buffer B]	PB10.24-08
PCRBIO Rapid Extract Lysis Kit	rapid DNA extraction	80 x 50µL reactions	[1 x 1.6mL buffer A] & [1 x 0.8mL buffer B]	PB15.11-08
	rapid DNA extraction	400 x 50µL reactions	[3 x 1.6mL buffer A] & [3 x 0.8mL buffer B]	PB15.11-24

## DNA Markers - ready to load and room temperature stable

Product name	Technique	Pack size	Presentation	Cat. no.
PCRBIO Ladder I	DNA marker - 100bp - 10kb	100 lanes	[1 x 0.5mL ladder] & [1 x 0.4mL loading dye]	PB40.11-01
	DNA marker - 100bp - 10kb	500 lanes	[5 x 0.5mL ladder] & [1 x 2.0mL loading dye]	PB40.11-05
PCRBIO Ladder II	DNA marker - 250bp - 10kb	100 lanes	[1 x 0.5mL ladder] & [1 x 0.4mL loading dye]	PB40.12-01
	DNA marker - 250bp - 10kb	500 lanes	[5 x 0.5mL ladder] & [1 x 2.0mL loading dye]	PB40.12-05
PCRBIO Ladder III	DNA marker - 50bp - 1500bp	100 lanes	[1 x 0.5mL ladder] & [1 x 0.4mL loading dye]	PB40.13-01
	DNA marker - 50bp - 1500bp	500 lanes	[5 x 0.5mL ladder] & [1 x 2.0mL loading dye]	PB40.13-05
PCRBIO Ladder IV	DNA marker - 100bp - 1500 bp	100 lanes	[1 x 0.5mL ladder] & [1 x 0.4mL loading dye]	PB40.14-01
	DNA marker - 100bp - 1500 bp	500 lanes	[5 x 0.5mL ladder] & [1 x 2.0mL loading dye]	PB40.14-05

## cDNA Synthesis Kits - generation of high quality cDNA for downstream applications

Product name	Technique	Pack size	Presentation	Cat. no.
qPCRBIO cDNA Synthesis Kit	unbiased cDNA generation for qPCR	25 x 20µL reactions	[1 x 25µL RTase] & [1 x 100µL reaction mix]	PB30.11-02
	unbiased cDNA generation for qPCR	100 x 20µL reactions	[1 x 100µL RTase] & [4 x 100µL reaction mix]	PB30.11-10
UltraScript 2.0 cDNA Synthesis Kit	unbiased cDNA generation for qPCR	25 x 20µL reactions	[1 x 25µL UltraScript 2.0] & [1 x 100µL reaction mix]	PB30.31-02
	unbiased cDNA generation for qPCR	100 x 20µL reactions	[1 x 100µL UltraScript 2.0] & [4 x 100µL reaction mix]	PB30.31-10
UltraScript 2.0 cDNA Synthesis Kit Separate Oligos	cDNA generation for qPCR and other applications	25 x 20µL reactions	[1 x 25µL UltraScript 2.0] & [1 x 200µL buffer] & [1 x 100µL Anchored Oligo(dT) <sub>18</sub> ] & [1 x 100µL Random Hexamers]	PB30.32-02
	cDNA generation for qPCR and other applications	100 x 20µL reactions	[1 x 100µL UltraScript 2.0] & [2 x 200µL buffer] & [1 x 100µL Anchored Oligo(dT) <sub>18</sub> ] & [1 x 100µL Random Hexamers]	PB30.32-10

## Thermostable Reverse Transcriptases - generation of high quality cDNA for downstream applications

Product name	Technique	Pack size	Presentation	Cat. no.
UltraScript Reverse Transcriptase	cDNA generation	10,000 units	[2 x 25µL UltraScript, 200 u/µL] & [1 x 200µL buffer]	PB30.12-01
	cDNA generation	40,000 units	[2 x 100µL UltraScript, 200 u/µL] & [4 x 200µL buffer]	PB30.12-04
UltraScript 2.0 Reverse Transcriptase	cDNA generation	10,000 units	[2 x 25µL UltraScript 2.0, 200 u/µL] & [1 x 200µL buffer]	PB30.33-01
	cDNA generation	40,000 units	[2 x 100µL UltraScript 2.0, 200 u/µL] & [4 x 200µL buffer]	PB30.33-04

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