VeriFi™ **Hot Start Polymerase**

- AptaLock™ hot start technology
- High fidelity
- Long range

VeriFi™ Hot Start Polymerase is a versatile and robust proofreading enzyme with AptaLock™ hot start technology for highly precise PCR. Enhanced processivity combined with an advanced buffer system give significant improvements in speed, yield and sensitivity while also increasing PCR success rates of long and challenging templates.

Features

- AptaLock™ hot start technology for maximised sensitivity and specificity
- Greater success with long and/or GC or AT-rich templates (17.5 kb and over)
- High temperature cycling – up to 100 ˚C denaturation to better separate GC-rich sequences
- 100x higher fidelity than Taq DNA polymerase
- Room temperature setup
- Reaction mix stability for up to 24 hours both before and after PCR run
- Generates blunt-end PCR products
- Also available as a 2x ready mix with the option of a red dye for direct gel loading

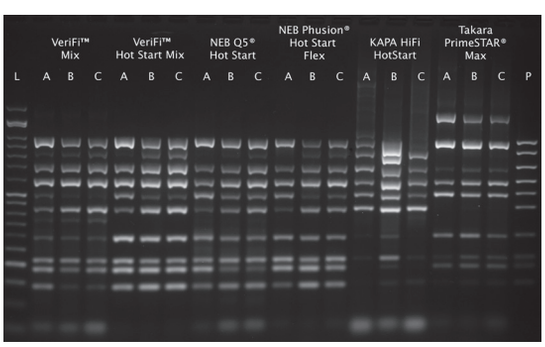

Figure 1. Superior performance in multiplex reactions

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 1pg lambda DNA and 1ng 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.

Applications

- High fidelity PCR
- Long PCR
- Multiplex and high throughput PCR
- Site-directed mutagenesis
- Cloning
- Sequencing

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Increased processivity

VeriFi™ Hot Start Polymerase is a single enzyme derived from Pfu DNA polymerase for its 3'-5' exonuclease (proofreading) activity. Proprietary mutations improve DNA binding and increase processivity when compared to its native form, resulting in shorter extension times, higher yields and the ability to amplify longer and more difficult targets. VeriFi™ Hot Start Polymerase is able to amplify eukaryotic genomic templates in excess of 17.5 kb, and longer for simpler DNA templates.

AptaLock™ hot start technology

PCRBIO's innovative AptaLock™ technology uses a proprietary aptamer-like molecule that reversibly inhibits both the 3'-5' exonuclease activity and 5'-3' polymerase activity of the enzyme at ambient temperatures. This unique hot start molecule prevents primer dimer formation and non-specific amplification to maximise the sensitivity and specificity of your PCR. This feature makes VeriFi™ Hot Start Polymerase highly suitable for multiplexing and enables reactions to be set up at room temperature, with benchtop stability both before and after PCR for up to 24 hours.

High fidelity

The enhanced accuracy of VeriFi™ Hot Start Polymerase gives 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. VeriFi™ Hot Start Polymerase is provided with an advanced buffer system including dNTPs, Mg and enhancers, enabling high fidelity PCR of a wide range of targets and fragment sizes regardless of GC or AT content.

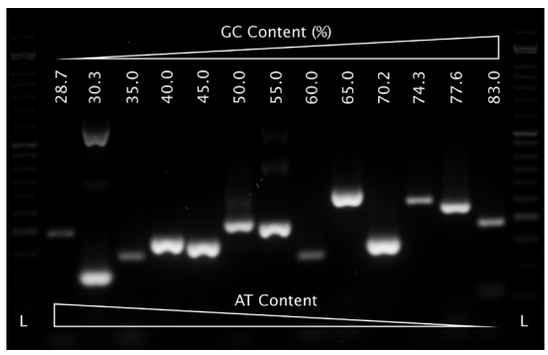

Figure 2. Successful PCR across a broad range of GC and AT content

Amplification of 13 targets with GC content ranging from 28.7% to 83% using PCRBIO HS VeriFi™ 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.

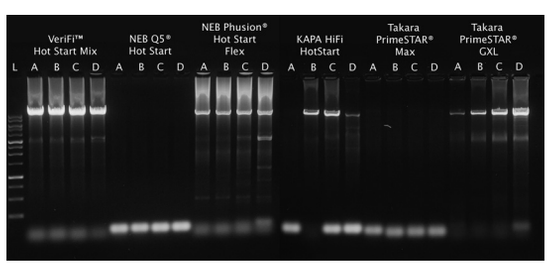

Figure 3. Increased PCR success rates and consistency with complex targets

Amplification of a 13.5 kb fragment of the human ß-globin gene at different annealing temperatures (A: 68.5 °C, B: 66.0 °C, C: 63.0 °C, D: 60.5 °C). The starting template amount is 30ng human genomic DNA. GC content is 37%. Reactions were set up using master mix formats (apart from Takara's PrimeSTAR® GXL DNA Polymerase) and following manufacturers' recommendations. Cycling conditions were 95 °C 2 min, then 30 cycles of 95 °C 15 sec, annealing 15 sec, 72 °C 12 min.

VeriFi™ Hot Start Mix displays higher yield and specificity compared to leading competitors. The PCRBIO mix also shows greater consistency and versatility across the annealing temperature range.

Catalogue No.	Product Name	Pack Size	Presentation
PB10.45-01	VeriFi™ Hot Start Polymerase	100 Units	[1 x 0.05 mL 2 u/µL] & [1 x 1.7 mL buffer] & [1 x 1.7 mL enhancer]
PB10.45-05		500 Units	[1 x 0.250 mL 2 u/µL] & [3 x 1.7 mL buffer] & [2 x 1.7 mL enhancer]
PB10.46-01	VeriFi™ Hot Start Mix	100 x 50 µL Reactions	2 x 1.25 mL
PB10.46-05		500 x 50 µL Reactions	2 x (5 x 1.25 mL)
PB10.47-01	VeriFi™ Hot Start Mix Red	100 x 50 µL Reactions	2 x 1.25 mL
PB10.47-05		500 x 50 µL Reactions	2 x (5 x 1.25 mL)

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