VeriFi® **Polymerase**

- High fidelity
- Long range
- Superior sensitivity

VeriFi® Polymerase is a versatile and robust high fidelity enzyme engineered for 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.

Features

- High temperature cycling – up to 100 ˚C denaturation to better separate GC-rich templates
- 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)
- Efficient and specific amplification from challenging templates including GC and AT-rich sequences
- 100x higher fidelity than Taq DNA polymerase
- Generates blunt-end PCR products
- Available as a convenient 2x ready mix with the option of a red dye for direct gel loading

Applications

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

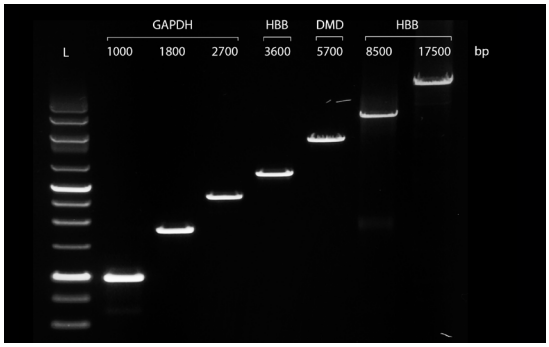

Figure 1. Versatility across a broad range of amplicon lengths

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

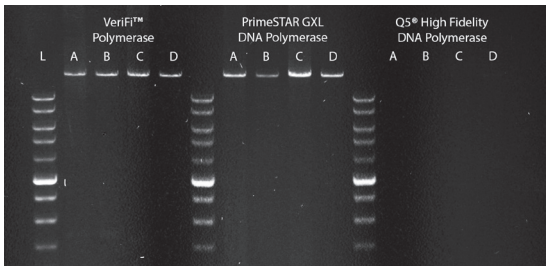

Figure 2. Increased success rates with complex templates

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.

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simplifying research

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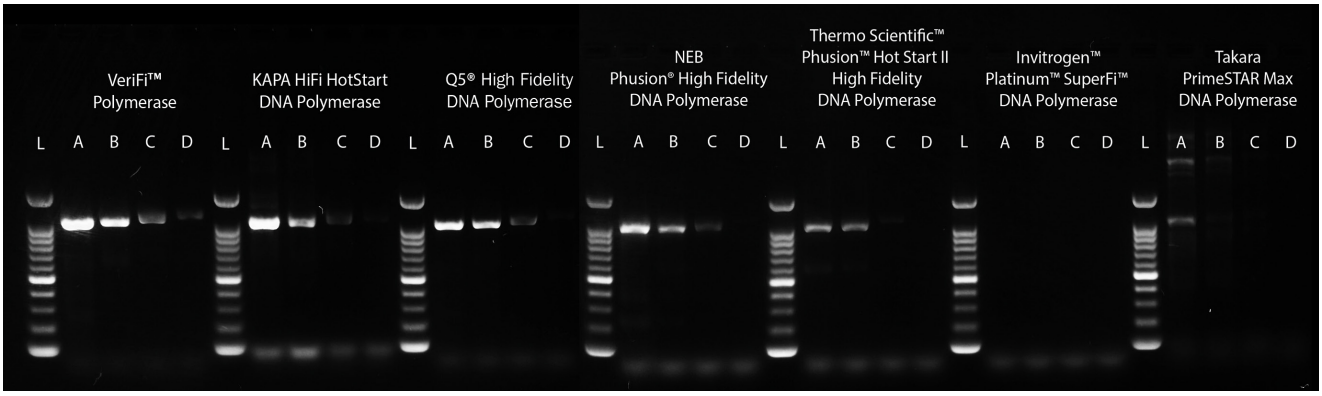

Figure 3. Amplification of targets with high sensitivity and specificity compared to leading competitors

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 processivity

VeriFi® Polymerase is a single enzyme derived from Pfu DNA polymerase for its 3'-5' exonuclease (proofreading) activity. The enzyme is engineered with proprietary mutations that improve DNA binding and increase processivity when compared with its native form, resulting in shorter extension times (10-30 seconds per kb), higher yields and the ability to amplify longer and more difficult targets. VeriFi® Polymerase is able to amplify eukaryotic genomic templates in excess of 17.5 kb, and longer for simpler DNA templates.

High fidelity

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. 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.

Convenient and versatile

VeriFi® 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 with minimal or no optimisation required. The enzyme is also available as a convenient 2x ready mix with the option of a red dye for direct gel loading, saving time during reaction setup and analysis.

Catalogue Number	Product Name	Pack Size	Presentation
PB10.42-01	VeriFi® Polymerase	100 Units	[1 x 0.05 mL 2 u/µL] & [1 x 1.7 mL buffer] & [1 x 1.7 mL enhancer]
PB10.42-05		500 Units	[1 x 0.250 mL 2 u/µL] & [3 x 1.7 mL buffer] & [2 x 1.7 mL enhancer]
PB10.43-01	VeriFi® Mix	100 x 50 µL Reactions	2 x 1.25 mL
PB10.43-05		500 x 50 µL Reactions	2 x (5 x 1.25 mL)
PB10.44-01	VeriFi® Mix Red	100 x 50 µL Reactions	2 x 1.25 mL
PB10.44-05		500 x 50 µL Reactions	2 x (5 x 1.25 mL)

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