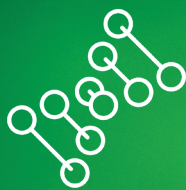# VeriFi™ **Library Amplification Mix**

- Reduced GC bias
- Superior NGS data quality
- AptaLock™ hot start technology

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

Features

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

Applications

- NGS library amplification
- Whole Genome Sequencing
- RNA Seq
- Multiplex and high throughput PCR
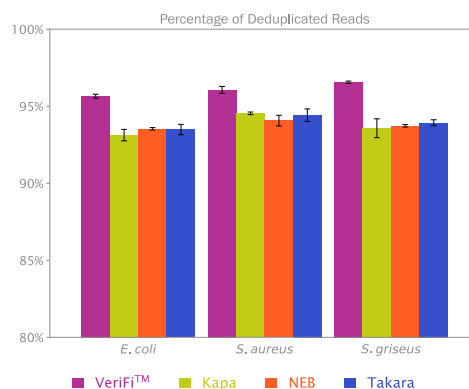- GC/AT rich target sequencing

Figure 1. Higher number of unique reads per dataset

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

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

PCR**BIOSYSTEMS**

simplifying research

Better quality NGS data

VeriFi™ Library Amplification Mix is a polymerase mix engineered to offer maximum sensitivity and reduced bias in NGS library amplification. The optimised mix achieves a higher number of uniquely mapped reads in final datasets compared to competitors. This leads to greater target sequence coverage and more accurate quantitative information, making sequencing experiments more cost-effective and resulting data more informative.

Reduced GC bias

The enhanced accuracy of VeriFi™ Hot Start Polymerase, in a specially optimised buffer system, ensures VeriFi™ Library Amplification Mix introduces minimal bias during amplification. This 2x ready mix format minimises the pipetting steps required in already complex NGS library preparation workflows. Containing dNTPs, Mg and enhancers, the mix robustly enables high fidelity PCR against a wide range of targets and fragment sizes regardless of GC or AT content.

AptaLock™ hot start technology

VeriFi™ Library Amplification Mix is enhanced by PCRBIO's innovative AptaLock™ hot start technology, 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. The unique hot start molecule prevents primer dimer formation and non-specific amplification to maximise PCR sensitivity and specificity. This ensures VeriFi™ Library Amplification Mix reactions can be set up at room temperature.
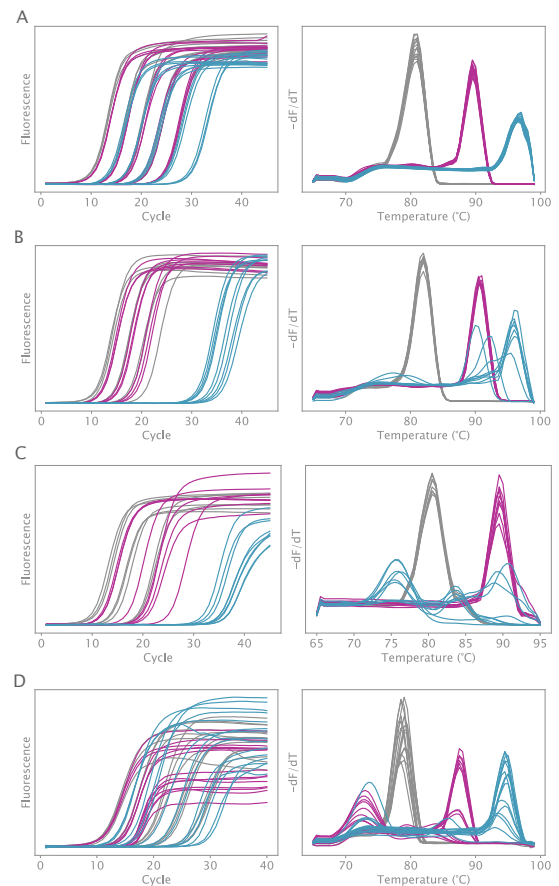
Figure 2. Reduced GC bias of VeriFi™ Library Amplification Mix

Quantification of synthetic 1 kb sequences with different GC content, 30% GC (grey), 50% GC (purple), 70% GC (blue). Amplification curves are shown on the left panel and melt peaks on the right panel. Serial dilutions of each template were used in a reaction volume of 20 µL. Mixes tested are A) VeriFi™ Library Amplification Mix, B) KAPA HiFi HotStart Library Amplification Kit, C) NEBNext® Ultra™ II Q5® Master Mix, D) repliQa HiFi ToughMix (Quantabio). Each mix was run under cycling conditions recommended by the manufacturer.

VeriFi™ Library Amplification Mix consistently amplifies templates across a broad range of GC content and over a wide range of concentrations with much less bias than competitors.

Catalogue No.	Product Name	Pack Size	Presentation
PB72.10-01	VeriFi™ Library Amplification MIx	50 Reactions	[1 x 1.25 mL]
PB72.10-05		250 Reactions	[5 x 1.25 mL]