

# USB® FideLiTaq™ PCR Master Mix (2X)

- Increases fidelity 3-6 times over Taq DNA Polymerase.
- Optimized for long PCR products.
- Convenient, ready-to-use mix which significantly reduces experimental variability.
- Enhanced buffer formulation which reduces time-consuming optimization.
- Generates products whose ends are compatible with either blunt-end or TA cloning procedures.

USB FideLiTaq PCR Master Mix (2X) combines high quality USB recombinant Taq DNA Polymerase, a high-fidelity proofreading polymerase and USB Ultrapure nucleotides in a proprietary buffer formulation. This ready-to-use mix increases amplification fidelity approximately 3-6 times over Taq DNA Polymerase alone and allows for amplification of longer product sizes<sup>(1-4)</sup>. The mix generates products whose ends are compatible with either blunt-end or TA cloning procedures<sup>(5)</sup>. FideLiTaq PCR Master Mix provides robust and reliable performance for PCR applications in which high-fidelity or longer product sizes are required. Since the mix is pre-formulated, experimental variability is significantly reduced.

## Convenience

The pre-mixed formulation saves time and reduces potential contamination errors by eliminating several pipetting steps. For a 50 µl reaction, simply add 25 µl of FideLiTaq PCR Master Mix to primers, DNA template and PCR-qualified H<sub>2</sub>O. Reactions can be easily performed in 10 µl, 25 µl, 50 µl or 100 µl volumes.

## High fidelity

FideLiTaq DNA Polymerase gives 3-6 fold higher fidelity than Taq DNA Polymerase, ideal for cloning and microarray applications.

## Increase product size and yield

Amplify short and long PCR products from complex DNA templates with little or no optimization (Fig. 1). For PCR products greater than 2 kb, yields are greatly increased with FideLiTaq DNA Polymerase and an enhanced buffer system.

## Improve specificity and sensitivity

Amplify PCR products with low background and from low-copy targets, essential for demanding genomic and cDNA applications with limited sample material (Fig. 2).

## Stable performance

The mix withstands repeated freeze-thaw cycles with no observed decrease in performance (Fig. 3).

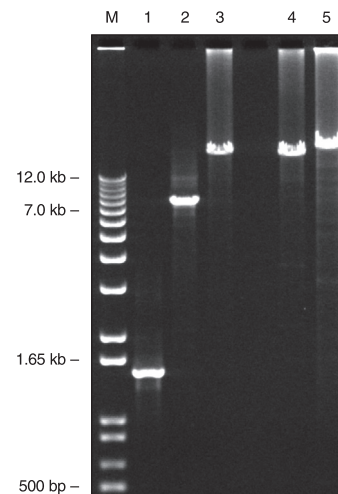
## Tested User Friendly™ functional test:

Tested by amplifying a 20.7 kb PCR product from lambda DNA.

## FideLiTaq PCR Master Mix formulation (2X)

FideLiTaq PCR Master Mix [PN 71182] combines USB Taq DNA Polymerase with a proofreading polymerase in a unique buffer formulation. Magnesium and nucleotide concentrations are 3 mM and 0.4 mM each, respectively. Supplied as 4 x 625 µl tubes, sufficient for 100 reactions in a 50 µl reaction volume. Complete protocol booklet and a brief protocol card are also provided.

Fig. 1. Range of targets amplified



Single-copy NRAGE, 1.55 kb (Lane 1) and Numb, 7.7 kb (Lane 2) were amplified from 1 ng human genomic DNA. Single-copy β-globin, 23.0 kb (Lane 3) was amplified from 100 ng human genomic DNA. Both the 20.7 kb (Lane 4) and 35.0 kb (Lane 5) lambda targets were amplified from 1 ng lambda DNA. No magnesium optimization was required, as 1.5 mM final magnesium concentration was used in all reactions.

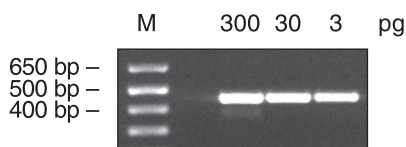
## FideliTaq PCR Master Mix (2X)

Product code	Pack size
71182	100 reactions

### References:

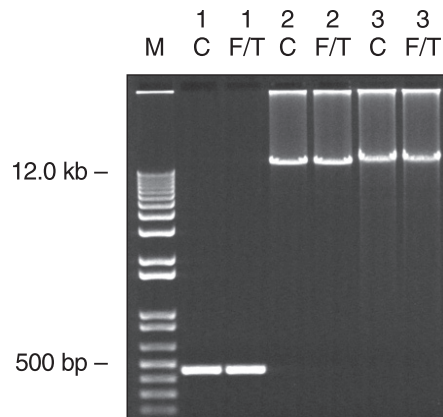
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**Fig. 2. Sensitivity of FideliTaq PCR Master Mix (2X)**



The single-copy Numb gene was amplified from the indicated amounts of human genomic DNA. Approximately one mammalian cell is represented by 3 pg of genomic DNA.

**Fig. 3. Freeze-thaw stability of FideliTaq PCR Master Mix**



The master mix was subjected to 15 freeze-thaw cycles alternating between dry ice and room temperature. Following freeze-thaw cycles (F/T), the mix was compared to control mix (C) before treatment. Both short and long targets are shown to demonstrate the robust nature of the mix. Single-copy Numb, 455 bp (Lane 1) was amplified from 30 pg human genomic DNA.  $\beta$ -globin 23 kb target (Lane 2) was amplified from 100 ng human genomic DNA. Lambda 35 kb target (Lane 3) was amplified from 1 ng lambda DNA.

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