

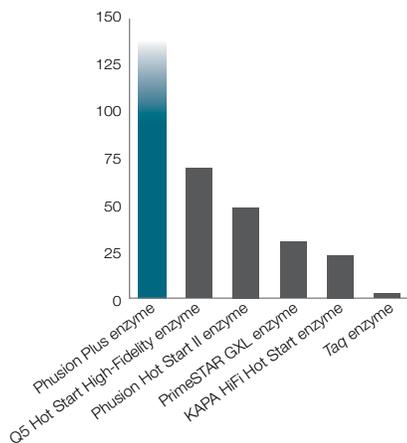
# Higher success and simpler setup with a trusted PCR enzyme

Thermo Scientific™ Phusion™ Plus DNA Polymerase is the latest addition to our family of Phusion™ products, which are *Pyrococcus* polymerase-like high-fidelity enzymes fused to a DNA-binding domain. This unique protein fusion technology enables Phusion Plus DNA Polymerase to generate PCR sequences with high accuracy, sensitivity, and inhibitor tolerance. In addition, its specialized reaction buffer allows PCR amplification without the need to calculate primer annealing temperatures, helping you save time and avoid mistakes in PCR runs.

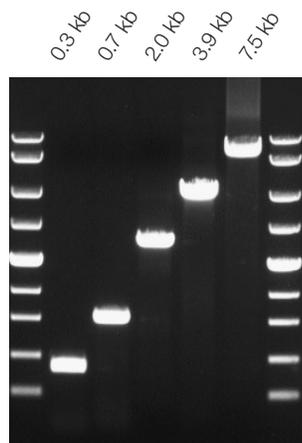


## Highlights

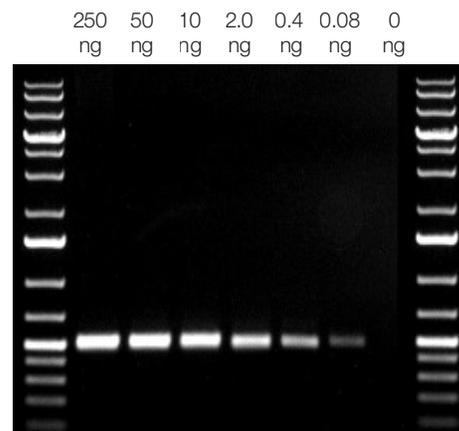
- **High fidelity**—provides >100x higher sequence accuracy than *Taq* polymerase
- **Convenient setup**—allows for a universal annealing temperature of 60°C
- **Enhanced specificity**—reduces nonspecific amplification and primer degradation via hot-start modification
- **Benchtop stability**—enables lab automation setup since assembled reactions are stable at room temperature for 24 hours
- **High inhibitor tolerance**—works with DNA of suboptimal purity



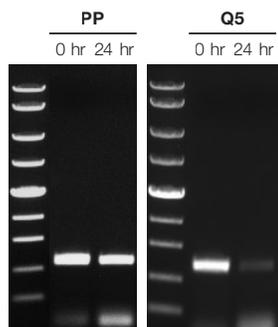
**Figure 1. Fidelity relative to Taq DNA polymerase.** Fidelity values were determined by next-generation sequencing with molecular barcodes. Phusion Plus DNA Polymerase generates PCR amplicons with very few errors, due to its extremely high fidelity >100x that of Taq enzyme.



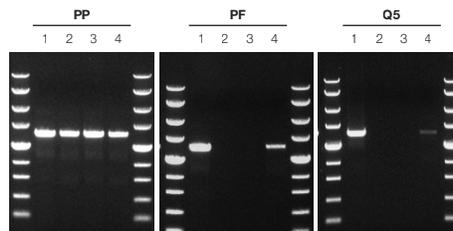
**Figure 2. Specific and efficient amplification using a universal annealing temperature.** Targets of different lengths were amplified efficiently from human genomic DNA (gDNA) using Phusion Plus DNA Polymerase and an annealing temperature of 60°C. Calculated annealing temperatures of the primers range from 61°C to 69°C.



**Figure 3. Highly sensitive and specific PCR.** A 0.5 kb target can be detected from as little as 0.08 ng of human gDNA using Phusion Plus DNA Polymerase.



**Figure 4. Reaction stability on the benchtop.** Assembled PCR reactions were loaded immediately (0 hr) onto a thermal cycler or incubated at room temperature for 24 hours before thermal cycling. With a stringent hot start, Phusion Plus DNA Polymerase (PP) produced PCR amplicons with high specificity and yields even after 24 hours, in contrast to NEB Q5™ Hot Start High-Fidelity DNA Polymerase (Q5).



**Figure 5. Enzyme tolerance to common PCR inhibitors.** A 2 kb target was amplified from human gDNA, with the reactions containing: (1) no inhibitor; (2) humic acid (0.5 µg/mL); (3) hemin (2.5 µM); (4) xylan (250 µg/mL). Phusion Plus DNA Polymerase (PP) amplified the targets more efficiently than Phusion™ Hot Start Flex DNA Polymerase (PF) and Q5 Hot Start High-Fidelity DNA Polymerase (Q5) in the presence of the inhibitors.

**Save time by co-cycling PCR targets of different lengths using Phusion Plus DNA Polymerase and its universal protocol.**

**Using one cycling protocol**

- First target (e.g., 0.5 kb)
- Second target (e.g., 1 kb)
- Third target (e.g., 2 kb)
- Fourth target (e.g., 4 kb)
- Fifth target (e.g., 7 kb)



Visit our molecular biology resource library for scientific webinars, videos, articles, and more at [thermofisher.com/mbresources](http://thermofisher.com/mbresources)

**Ordering information**

Description	Size*	Cat. No.
Phusion Plus DNA Polymerase	100 reactions	F630S
Phusion Plus PCR Master Mix	100 reactions	F631S
Phusion Plus Green PCR Master Mix	100 reactions	F632S

\* Additional product sizes available.

Get more details at [thermofisher.com/phusionplus](http://thermofisher.com/phusionplus)