



## MegaFi™ Pro Fidelity DNA Polymerase

### Cat. No. G886

Store at -20°C.

### Product Description

**MegaFi™ Pro Fidelity DNA Polymerase** elevates the current standards for specific, sensitive, robust, and high-fidelity PCR performance. This strategically-engineered polymerase is partnered with a monoclonal antibody which inhibits 5' → 3' polymerase activity and 3' → 5' exonuclease activity at room temperature allowing for highly specific Hot Start reactions. It has exceptional sensitivity and can amplify even the most difficult templates (compared to the leading competitors). Furthermore, MegaFi™ Pro boasts of its **high fidelity and ultra-low error rates** (over 2,000X less than Taq polymerase, representing the lowest error rate on the market, see website for more information), making it incredibly useful for a variety of PCR applications demanding high fidelity, including Next Generation Sequencing, molecular cloning, or diagnostics.

Product Component	Quantity	Part No.
MegaFi™ Pro Fidelity DNA Polymerase	400 rxn (200 µl)	G886-1
2X MegaFi™ Pro Reaction Buffer <sup>1</sup>	5.0 ml (4 x 1.25 ml)	P886-2

<sup>1</sup> Buffer contains final concentration of 2 mM Mg<sup>2+</sup>.

### Protocol

1. Thoroughly thaw and mix individual components before use, and assemble reaction on ice.

Component	Volume
2X MegaFi™ Pro Reaction Buffer	12.5 µl
dNTP Mix (10 mM)	0.5 µl
Forward Primer (10 µM)	1 µl
Reverse Primer (10 µM)	1 µl
Template DNA	Variable (100 ng genomic DNA)
MegaFi™ Pro Fidelity DNA Polymerase	0.5 µl
Nuclease-free H <sub>2</sub> O	Up to 25 µl

2. Gently mix the reaction components and briefly centrifuge, then transfer tube to a thermal cycler. Use thermocycling conditions for standard PCR (1 kb template):

Step	Temperature	Time
Initial Denaturation	95°C	5 min
25 – 35 Cycles	95°C 50-70°C 72°C	15 sec 15 sec 20-30 sec/kb <sup>2</sup>
Final Extension	72°C	5 min

<sup>2</sup> 20-30 seconds/kb, increase as necessary

3. After PCR, maintain the reaction at 4°C or store at -20°C until use.
4. Analyze the amplification products by agarose gel electrophoresis.
5. Visualize by ethidium bromide or SafeView™ (Cat No. **G108**) staining.

### General Notes

- MegaFi™ Pro Fidelity DNA Polymerase is strategically-engineered for fast versatile high-fidelity PCR.
- Contains a monoclonal antibody for highly specific Hot Start PCR.
- Suitable for long range PCR up to 18 kb from less difficult targets or up to 15 kb from genomic DNA.
- Start with high quality, purified DNA templates to achieve even greater PCR success.