

DNA Polymerase High Fidelity (HiFi) Enzyme

Catalogue No.: abx071010

DNA Polymerase High Fidelity (HiFi DNA Polymerase) contains T-DNA Polymerase and a proofreading 3'-5' exonuclease. This kit contains two different buffers: HiFi Buffer 1 is optimized for the amplification of genomic DNA, and HiFi Buffer 2 is optimized for the amplification of λDNA, cDNA or plasmid DNA. The extension rate is about 1-2 kb/min. Template-independent "A" can be generated at the 3' end of the PCR product. PCR products can be directly cloned into T-vectors. Genomic DNA fragments can be amplified up to 15 kb. This kit does not contain 2.5 mM dNTPs.

Contents:

| Component | 250 U | 500 U | 3 kU |
|-----------------------|--------|--------|------------|
| HiFi DNA Polymerase | 250 U | 500 U | 6 × 500 U |
| 10X HiFi Buffer 1 | 1.2 ml | 1.2 ml | 6 × 1.2 ml |
| 10X HiFi Buffer 2 | 1.2 ml | 1.2 ml | 6 × 1.2 ml |
| 10X GC Enhancer | 200 µl | 400 µl | 1 ml |
| 6X DNA Loading Buffer | 500 µl | 1 ml | 2 × 1 ml |

Target: DNA Polymerase (HiFi)

Tested Applications: PCR

Conjugation: Unconjugated

Purity: > 99% (SDS-PAGE)

Quality Control: Assayed for amplification efficiency to amplify the p53 gene from 10 ng of human genomic DNA.

Storage: Store at -20 °C for up to 2 years. Avoid repeated freeze/thaw cycles.

Buffer: HiFi DNA Polymerase: 20 mM Tris-HCl (pH 8.0), 0.1 mM EDTA, 1 mM DTT, 100 mM KCl, 50% glycerol, stabilizers.
10X HiFi Buffer 1/2: 200 mM Tris-HCl (pH 9.0), 100 mM (NH₄)₂SO₄, 20 mM MgSO₄, 100 mM KCl, 10% glycerol, other proprietary ingredients.

Biological Activity: One unit of HiFi DNA Polymerase incorporates 10 nmol of deoxyribonucleotide into acid-precipitable material in 30 minutes at 74 °C.

Endotoxin Level: Functional absence of double and single stranded endonuclease activity.

Concentration: 5 U/µl

Note: THIS PRODUCT IS FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC, THERAPEUTIC OR COSMETIC PROCEDURES. NOT FOR HUMAN OR ANIMAL CONSUMPTION.

Datasheet

Version: 4.0.0

Revision date: 10 Apr 2025



Directions for use: Reaction Components:

| Component | Volume | Final Concentration |
|--------------------------------|--------------|---------------------|
| Template | Variable | as required |
| Forward Primer (10 µM) | 1 µl | 0.2 µM |
| Reverse Primer (10 µM) | 1 µl | 0.2 µM |
| 10X HiFi Buffer 1/2 | 5 µl | 1X |
| 2.5 mM dNTPs | 4 µl | 0.2 mM |
| HiFi DNA Polymerase | 0.5-1 µl | 2.5-5 U |
| Nuclease-free H ₂ O | Variable | N/A |
| Total Volume | 50 µl | N/A |

Thermal Cycling Conditions:

| Number of Cycles | Temperature | Time |
|------------------|-------------|------------|
| 1 cycle | 94 °C | 2-5 min |
| | 94 °C | 30 seconds |
| 30-35 cycles | 50-60 °C | 30 seconds |
| | 72 °C | 1-2 kb/min |
| 1 cycle | 72 °C | 5-10 min |

Notes:

- For GC/AT-rich or complex templates, it is recommended to add GC Enhancer to the PCR reaction mixture. The suggested working concentration range for the 10X GC Enhancer provided in this kit is 0.5-5X.
- A final concentration of 2 mM MgSO₄ is sufficient to amplify most targets. Some targets may require a higher concentration of Mg²⁺.
- For optimal results, we recommend using a 100 mM MgSO₄ stock solution to prepare a titration from 2 mM to 4 mM (final concentration) in 0.25 mM increments.
- 0.5 µl (2.5 U) of enzyme is sufficient for a reaction volume of 50 µl. For increased amplification, up to 1 µl (5 U) of enzyme can be used.