DNA Polymerase High Fidelity (HiFi) Enzyme (with 2.5 mM dNTPs)

Catalogue No.:abx071011

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.

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
2.5 mM dNTPs	400 µl	800 µl	6 × 800 µl
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 amplication 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 $(NH_4)_2SO_4$, 20 mM $MgSO_4$, 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

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

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_2O	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 $MgSO_4$ is sufficient to amplify most targets. Some targets may require a higher concentration of Mg^{2+}

• For optimal results, we recommend using a 100 mM $MgSO_4$ 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 vlume of 50 µl. For increased amplification, up to 1 µl (5 U) of enzyme can be used.

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