

HelixAmp™ *Power-Pfu* Polymerase (Ver 2.0)

Kit Contents

HelixAmp™ <i>Power-Pfu</i> Polymerase (Ver 2.0)			
Cat. No.	P250/P250N (250units)	P500/P500N (500units)	P2500/P2500N (2,500units)
<i>Power-Pfu</i> (2.5unit/μl)	0.1ml	0.2ml	0.2ml x 5ea
10x <i>Power-Pfu</i> Buffer	1ml	1ml x 2ea	1ml x 10ea
dNTP Mix (each 10mM)	None / 0.2ml	None / 0.4ml	None / 0.4ml x 5ea
5x TuneUp™ Solution	None / 0.5ml	None / 0.5ml x 2ea	None / 0.5ml x 10ea
6x Loading Dye	0.5ml	1ml	1ml x 5ea
Blue Box	-	-	1ea
Instruction for Use	1ea	1ea	1ea

Description

HelixAmp™ *Power-Pfu* Polymerase, originated from an extreme thermophile, is ideal for high-fidelity PCR amplification. Due to its intrinsic 3' to 5' exonuclease (proof-reading) activity, this DNA polymerase shows high-fidelity and produces blunt ended PCR products. NanoHelix's "PMT (polymerase modulator on temperature) technology" is applied in the buffer system, which is effective to reduce primer-dimer formation and non-specific amplification during the PCR. HelixAmp™ *Power-Pfu* Polymerase is an engineered enzyme showing much higher productivity and processivity than other proof-reading thermo-stable enzymes (e.g. *Pfu* DNA polymerase, Vent DNA polymerase etc.) without compromise to the fidelity. For the maximum performance of PCR reactions high-quality dNTP mixture is supplied. The addition of TuneUp™ Solution in the reaction mixture is a simple way to optimize the difficult targets of PCR.

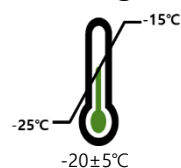
Application

High fidelity PCR
 Site-directed mutagenesis
 Blunt end PCR cloning

Storage buffer

50mM Tris-HCl (pH 8.0), 0.1mM EDTA,
 1mM DTT, stabilizers, 50% Glycerol

Storage



Shelf life



Concentration

2.5unit/μl

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Quality Control Assay

Contamination Assay

HelixAmp™ *Power-Pfu* Polymerase was passed from quality control assay for contamination of bacterial host DNA.

Functional assay

HelixAmp™ *Power-Pfu* Polymerase was functionally tested for PCR amplifications to various units of enzyme using the primer sets for different sized products (0.5 ~ 17kb) and to various concentrations of human genomic DNA as a template.

Quality authorized by Yountaek Go



Protocol

※ Although precipitates could be arised in the 10x Buffer, they will not affect the enzyme activities

1. Recommended amount of template DNA

Human genomic DNA : 10 ~ 100ng

Bacterial genomic DNA : 5 ~ 50ng

Purified plasmid or phage DNA : 1 ~ 5ng

2. Mix following components in a PCR tube

Components	Volumes (μl)
Template	X μl
10x Power-Pfu Buffer	5μl
dNTP Mix (each 10mM)	1μl
Forward Primer (10pmoles/μl)	2μl
Reverse Primer (10pmoles/μl)	2μl
5x TuneUp™ Solution	0 ~ 20μl
<i>Power-Pfu</i>	1.25units
RNase-free Water	to 50μl

※ **TuneUp™ Solution** is an additive altering the binding behavior of primer and template and can help the amplification that do not work well under standard PCR condition. Especially, TuneUp™ Solution can be used for the amplification of problematic template, such as high G+C content and repeat sequence regions. TuneUp™ Solution uses as adding into PCR reaction mixture from 0.5x to 2x.

3. PCR condition

Temperature & time	Cycles
95°C, 2 min	x 1
95°C, 20 sec	x 25 ~ 40
Annealing Temp., 40 sec	
72°C, 2 min/kb (Expected size of product)	
72°C, 5 min	x 1

Annealing Temp. = $T_m - (4 \sim 6^\circ\text{C})$

T_m (Melting Temp.) = $[4^\circ\text{C} \times (\text{number of G} + \text{C})] + [2^\circ\text{C} \times (\text{number of A} + \text{T})]$

Products

Cat. No.	Products	Size
P250	HelixAmp™ <i>Power-Pfu</i> Polymerase	250units
P250N	HelixAmp™ <i>Power-Pfu</i> Polymerase (with dNTP)	250units
P500	HelixAmp™ <i>Power-Pfu</i> Polymerase	500units
P500N	HelixAmp™ <i>Power-Pfu</i> Polymerase (with dNTP)	500units
P2500	HelixAmp™ <i>Power-Pfu</i> Polymerase	2,500units
P2500N	HelixAmp™ <i>Power-Pfu</i> Polymerase (with dNTP)	2,500units

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