Ver. 2206-02

HelixAmp™ *Premium-Pfu* Polymerase

Kit Contents

HelixAmp™ *Premium-Pfu* Polymerase			
Cat. No.	**PP250 (250units)**	**PP500 (500units)**	**PP2500 (2,500units)**
Premium-Pfu (2.5unit/μl)	0.1ml	0.2ml	0.2ml x 5ea
5x Reaction Mix [PP]	1ml x 2ea	1ml x 4ea	1ml x 20ea
N-Solution™	1ml	1ml x 2ea	1ml x 10ea
6x Loading Dye	0.5ml	1ml	1ml x 5ea
Blue Box	-	-	1ea
Instruction for Use	1ea	1ea	1ea

※ The 5x Reaction Mix [PP] contains buffers, dNTPs, Mg^{2+}, and BSA in appropriate concentrations.

Description

HelixAmp™ *Premium-Pfu* Polymerase is an editorial enzyme improved from HelixAmp™ *Speed-Pfu* Polymerase. HelixAmp™ *Premium-Pfu* Polymerase shows faster (4 ~ 6 times) polymerization reaction and higher fidelity (3 ~ 5 times) than any other high-fidelity enzymes. 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™ *Premium-Pfu* Polymerase is most suitable to faithful amplification of relatively long-ranged target for cloning etc. Due to its high speed, fast PCR with this enzyme could be completed in 30 min for the reliable amplification of less than 1 kb size target DNA. For the maximum performance of PCR reactions high-quality dNTP mixture is supplied. In case of PCR amplification of target DNA with high G+C content or structural problem, such as repeat sequence, the application of N-Solution™ improves the specificity and productivity of the reactions.

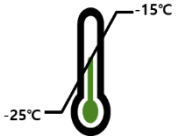
Application

High fidelity PCR
Long range 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



-20±5℃

Shelf life

12 months

Concentration

2.5unit/μl

NanoHelix Co., Ltd.

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Quality Control Assay

Contamination Assay

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

Functional assay

HelixAmp™ *Premium-Pfu* Polymerase was functionally tested for PCR amplifications using the various primer sets (0.5 kb ~ 17kb) from human *beta-globin* gene.

Quality authorized by Yountaek Go 

Protocol

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	Reaction Volumes (μl)	
	25	50
Template	X μl	X μl
Forward Primer (10pmoles/μl)	1μl	2μl
Reverse Primer (10pmoles/μl)	1μl	2μl
5x Reaction Mix [PP]	5μl	10μl
N-Solution™ [optional]※	0~2.5μl	0~5μl
Premium-Pfu	1.25units	1.25units
RNase-free Water	to 25μl	to 50μl

※ **N-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, **N-Solution™** can be used for the amplification of problematic template, such as high G+C content and repeat sequence regions. The optimal concentrations of **N-Solution™** are vary upon the primer-template sets and should be set by adding into the PCR reaction mixture from 2 to 10% volume. Most of the PCR reactions are not required the **N-Solution™** and we recommend to use the **N-Solution™** only in case of the PCR amplification is not works well or too much non-specific products are observed.

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3. PCR condition.

Temperature & time	Cycles
95℃, 2 min	x 1
95℃, 20 sec	x 25 ~ 40
Annealing Temp.[1], 40 sec	
72℃, 30 sec/kb (Expected size of product)	
72℃, 5 min	x 1

[1] Annealing Temp. = T_m – (4 ~ 6℃)

T_m (Melting Temp.) = [4℃ x (number of G + C)] + [2℃ x (number of A + T)]

※ If there are non-specific PCR amplifications, use an annealing temperature of 2~5°C higher than the calculated melting temperature.

Products

Cat. No.	Products	Size
PP250	HelixAmp™ *Premium-Pfu* Polymerase	250units
PP500	HelixAmp™ *Premium–Pfu* Polymerase	500units
PP2500	HelixAmp™ *Premium-Pfu* Polymerase	2,500units

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