NANOHELIX
Reliable Partner for DNA Technologies

Ver. 2206-01

HelixAmp™ *Taq-Plus* Polymerase

Kit Contents

HelixAmp™ *Taq-Plus* Polymerase			
Cat. No.	**TP250 (250rxns)**	**TP500 (500rxns)**	**TP2500 (2,500rxns)**
Taq-Plus	250µl	500µl	500ul x 5ea
5x Reaction Mix [TP]	1.25ml x 2ea	1.25ml x 4ea	1.25ml x 20ea
5x TuneUp™ Solution	0.5ml	0.5ml x 2ea	0.5ml x 10ea
6x Loading Dye	0.5ml	1ml	1ml x 5ea
Blue Box	-	-	1ea
Instruction for Use	1ea	1ea	1ea

Description

HelixAmp™ *Taq-Plus* Polymerase is an improved form of HelixAmp™ *Taq* Polymerase and amplifies target DNA at broad-range of annealing temperature. 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. This enzyme is an optimized blend of HelixAmp™ *Taq* Polymerase and HelixAmp™ *Power-Pfu* Polymerase. HelixAmp™ *Taq-Plus* Polymerase possesses the greater yield, processivity and fidelity than normal *Taq* polymerase. The fidelity of HelixAmp™ *Taq-Plus* Polymerase is higher approximately 4 times than that of *Taq* polymerase. In case of PCR amplification of target DNA with high G+C content or structural problem, such as repeat sequence, the application of TuneUp™ Solution improves the specificity and productivity of the reaction.

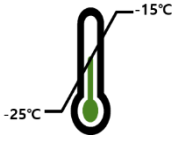
Application

Routine PCR
Long range PCR
RT-PCR
Generation of PCR products for TA cloning

Storage buffer

20mM Tris-HCl (pH 9.0), 100mM KCl,
0.1mM EDTA, 1mM DTT, stabilizers,
50% Glycerol

Storage



-20±5℃

Shelf life

12 months

NanoHelix Co., Ltd.

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Quality Control Assay

● **Contamination Assay**

HelixAmp™ *Taq-Plus* Polymerase was passed from quality control assay for contamination of endodeoxyribonuclease and the bacterial host DNA.

● **Functional analysis**

HelixAmp™ *Taq-Plus* Polymerase combines the high processivity of Taq DNA polymerase with the proofreading activity of Pfu polymerase. The DNA-proofreading 3′→5′ exonuclease activity of Pfu allows the fidelity and robust amplification of Taq DNA polymerase.

Quality check of HelixAmp™ *Taq-Plus* Polymerase was performed by amplifying the human genomic DNA as a template.

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 [TP]	5μl	10μl
5x TuneUp™ Solution	0 ~ 10μl	0 ~ 20μl
Taq-Plus	1μl	1μl
RNase-free Water	to 25μl	to 50μl

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※ **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℃, 2 min	x 1
95℃, 20 sec	x 25 ~ 40
Annealing Temp., 40 sec	
72℃, 1 min/kb (Expected size of product)	
72℃, 5 min	x 1

Annealing Temp. = T_m – (4 ~ 6℃)

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

Products

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TP2500	HelixAmp™ *Taq-Plus* Polymerase	2,500rxns

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