

## HelixAmp™ Speed-Pfu Polymerase

### Kit Contents

HelixAmp™ Speed-Pfu Polymerase				
Cat. No.	S250/S250N (250units)	S500/S500N (500units)	S2500/S2500N (2,500units)	BS (Bulk type)
Speed-Pfu (2.5unit/μl)	0.1ml	0.2ml	0.2ml x 5ea	Customized
10x Speed-Pfu Buffer	1ml	1ml x 2ea	1ml x 10ea	Customized
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	-
Instructions for Use	1ea	1ea	1ea	1ea

### Description

**HelixAmp™ Speed-Pfu Polymerase** is an editorial enzyme improved from HelixAmp™ Power-Pfu Polymerase. HelixAmp™ Speed-Pfu Polymerase shows faster (4 ~ 6 times) polymerization reaction and higher fidelity (3 ~ 5 times) than any other high-fidelity enzymes. With this high speed and accuracy, HelixAmp™ Speed-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. The addition of TuneUp™ Solution in the reaction mixture is a simple way to optimize the difficult targets of PCR.

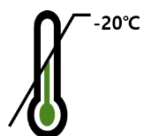
### Application

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



Store below -20°C

### Shelf life



24 months

### Concentration

2.5unit/μl

## Quality control

By NanoHelix's ISO 13485-certified Quality Management System, each lot of **HelixAmp™ Speed-Pfu Polymerase** was tested against predetermined specifications to ensure consistent product quality.

## 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 Speed-Pfu Buffer	5μl
dNTP Mix (each 10mM)	1μl
Forward Primer (10μM)	2μl
Reverse Primer (10μM)	2μl
5x TuneUp™ Solution	0 ~ 20μl
<i>Speed-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, 30 sec/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.) =  $[4^\circ\text{C} \times (\text{G} + \text{C})] + [2^\circ\text{C} \times (\text{A} + \text{T})]$**

### Products

Cat. No.	Products	Size
S250	HelixAmp™ <i>Speed-Pfu</i> Polymerase	250units
S250N	HelixAmp™ <i>Speed-Pfu</i> Polymerase (with dNTP)	250units
S500	HelixAmp™ <i>Speed-Pfu</i> Polymerase	500units
S500N	HelixAmp™ <i>Speed-Pfu</i> Polymerase (with dNTP)	500units
S2500	HelixAmp™ <i>Speed-Pfu</i> Polymerase	2,500units
S2500N	HelixAmp™ <i>Speed-Pfu</i> Polymerase (with dNTP)	2,500units
BS	HelixAmp™ <i>Speed-Pfu</i> Polymerase, Bulk type	Customized