GDSIyo Hotstart Taq Polymerase

For research use only

Cat. No./Spec.

Cat. No	P1241	P1242	P1243
Spec.	250U	1,000U	5,000U

Description

GDSIyo Hotstart Taq Polymerase is a hot-start Taq DNA Polymerase, which can not only better inhibit the non-specific reaction caused by non-specific annealing of primers or primer-dimer in the process of PCR system preparation and amplification, so that this product has excellent specificity, is more effective for the amplification of low-concentration templates, and is suitable for multiplex PCR amplification reactions, and this product has good system applicability in different types of PCR Stable amplification can be obtained during the reaction.

GDSIyo Hotstart Taq Polymerase is a specialized enzyme optimized and formulated according to the characteristic requirements of lyophilized reagents. It has 5’-3’ polymerase activity, but no 3’-5’ exonuclease activity. The products of GDSIyo Hotstart Taq Polymerase have overhanged dA at 3’-end.

Components

Component	**P1231**	**P1242**	**P1243**
GDSIyo Hotstart Taq Polymerase (5U/μl)	50 μl	200 μl	1 ml
10× Hotstart Buffer (dNTP free, Mg^{2+} free)*	0.5 ml	1 ml × 2	10 ml
$MgCl_2$ (25mM)	1 ml	1 ml × 4	20 ml

* Mg^{2+} plus version is available.

Unit Definition

One unit is defined as the amount of enzyme required to incorporate 10 nmol of deoxynucleotide into acid-insoluble species over 30 minutes at 74°C using activated salmon sperm DNA as template/primer.

Storage

Store at -20°C for long-term storage, mix well before use, and avoid repeated freezing and thawing.

Protocol

1. Preparation of reaction solution

Add the following reagents to the proper thermal cycler reaction tube or plate on ice:

Ordinal	**Component**	**50-μl rxn**	**Final conc.**
1	10× Hotstart Buffer（dNTP free, Mg^{2+} free）	5 μl	1×
2	$MgCl_2$ (25mM)	2-8 μl	1.0-4.0 mM
3	dNTPs（2.5mM）	4 μl	0.2 mM
4	upstream primer (10 μM)[1]	2 μl	0.4 μM
5	downstream primer (10 μM)[1]	2 μl	0.4 μM
6	GDSIyo Hotstart Taq Polymerase (5U/μl)[2]	0.25-0.5 μl	1.25-2.5U
7	template DNA[3]	1-4 μl	<1 μg
8	Nuclease-free Water[4]	To 50 μl	-

[1] Recommended range of final primer concentration: 0.1-1μM. The concentration can be reduced when the specificity is poor, and the concentration can be increased when the efficiency is low.

[2] The amount of GDSIyo Hotstart Taq Polymerase can be adjusted according to the needs of the experiment.

[3] The optimal dosage varies with different templates. The recommended dosage for some DNA templates is as follows (50 μl reaction system).

Template	Human genomic DNA	λDNA	cDNA	Plasmid DNA
Dosage	1ng-500g	0.5ng-5ng	1-5μl	0.1ng-10ng

[4] Nuclease-free Water (Cat. #：P9021/P9022/P9023) can be ordered from GDSBio.

2. Perform PCR using the following thermal cycling condition

2-step PCR:

Stage	**Temperature**	**Time**	**Number of Cycles**
Initial Denaturation	95°C	5 min	1
Denaturation	95°C	10-20 sec	35-50
Annealing & Extension	60°C	20-60 sec	
Final Extension	72°C	5-10 min	1

3-step PCR:

Stage	**Temperature**	**Time**	**Number of Cycles**
Initial Denaturation	95°C	5 min	1
Denaturation	95°C	10-20 sec	35-50
Annealing	56-64°C	10-30 sec	
Extension	72°C	10-60 sec	
Final Extension	72°C	5-10 min	1

Quality Control

The absence of endodeoxyribonucleases, exodeoxyribonucl- eases and ribonucleases is confirmed by appropriate quality tests. Functionally tested in amplification of a single-copy gene from human genomic DNA.

Product Use Limitations

This product is sold exclusively for research purposes and *in vitro* use. Neither the product, nor any individual components, was tested for use in diagnostic applications or for drug development, nor is it suitable for administration to humans or animals. Please refer to the MSDS, available upon request.