Datasheet

H-SPlus Taq DNA Polymerase

Hot Start Polymerase with ultra short inactivation time, free of MAB´s. The glycerol-free version is designed for Lyophilization, especially

Features:
- Maximo H-SPlus Taq DNA Polymerase is “inactive” at room-temperature
- When the reaction temperature is greater than 70 °C the Polymerase “jumps” into action
- It is neither blocked by Antibodies nor chemically modificated -> **ultra-short activation time**
- For “high-yield” Hot-Start PCR results
- Multiplex PCR
- PCR setting up at room-temperature
- As sensitive Polymerase for PCR Diagnostics research

Description:
Maximo H-SPlus DNA Polymerase (recombinant from Thermus aquaticus) catalyzes the polymerization of nucleotides into duplex DNA in 5'→3' direction in the presence of magnesium. It also possesses a 5'→3' polymerization-dependent exonuclease replacement activity but lacks a 3'→5' exonuclease activity. The activation of the enzyme starts immediately at 70°C and requires no increased time in heating or denaturation step. Its activity is blocked at ambient temperature and switched on automatically at the onset of the initial denaturation. The thermal activation prevents the extension of nonspecifically annealed primers and primer-dimer formation at low temperatures during PCR setup.

Unit definition:
One unit is defined as the amount of enzyme required to incorporate 10 nmoles of dNTP into acid-insoluble material in 30 min at 72°C.

Concentration: 5 u/µl

Storage buffer:
20 mM Tris-HCl, 100 mM KCl, 0.15 mM EDTA, 1 mM DTT, 0.5% Tween-20, 0.5% Nonidet P40, 50% Glycerol, pH 8.1

Reaction buffers:
Reaction buffer (10X)” incomplete” (red cap):160 mM $(NH_4)_2SO_4$, 670mM TrisHCl pH 8,8, 0,1% Tween-20
Reaction buffer (10X) “complete” (yellow cap):160 mM $(NH_4)_2SO_4$, 670mM TrisHCl pH 8,8, 0,1% Tween-20, 25mM $MgCl_2$
separate Tube: $MgCl_2$ (100 mM, green cap)

Recommended 10X Reaction Buffer for increased sensitivity (Not provided):
100 mM Tris-HCl (pH 8.8), 500 mM KCl, 0.1 % Tween 20, 15 mM $MgCl_2$

Quality control
- Tested free from endonucleases and primer contamination, positive PCR performance with several templates of Lambda DNA (<= 12 kb) and human placenta DNA (3kb)

Standard Protocol:

Components	Volume per reaction
10X reaction buffer	5-10 µl
100 mM $MgCl_2$	optional
dNTP-Mix (40mM)	1.0 µl
Up-stream primer (10 µM stock)	0,5-2.5 µl
Down-stream primer (10µM stock)	0.5-2,5 µl
Template DNA	0.1-15 ng/ml plasmid DNA 1-10 µg/ml genomic DNA
Maximo H-SPlus Taq DNA (5 u/µl)	0.2 - 1.0 µl
Sterile dest. Water (molecular grade)	up to **50 µl total reaction volume**

Note:
- vortex all solutions carefully before using
- add the enzyme after Template DNA
- may you have to optimize the $MgCl_2$ concentration for best result

General Thermo-Cycler protocol:

Step	Time	Temperature
Initial denaturation	1-2 min	94-95°C
25-30 Cycles: Denaturation Annealing Extension	 30 sec 30 sec 0,5-3 min	 94-95°C 48-68°C 72°C per 1kb
Final extension	2-3 min	72°C

Note:
- In case of low amount of DNA template, additionally cycles may be used

Storage: at -20°C for 24 months, avoid frequent thawing and freezing

Transport:
with blue ice or at ambient temperature depending on the destination

Cat.-no	Description	Amount
S400	H-SPlus Taq DNA Polymerase	200 units
S410	H-SPlus Taq DNA Polymerase	1000 units
S410 GF	H-SPlus Taq DNA Polymerase Glycerol free buffered	1000 units

.. a good decision ..