Datasheet

Description:
Maximo M-Superhot Taq DNA for qPCR and Hot-Start-PCR is an optimized mixture of a high processive Taq DNA Polymerase and special inhibitors to Taq DNA for real time PCR. The enzyme is a thermostable DNA polymerase that possesses a 5´→3´ polymerase activity and a double-stranded specific 5´→3´ exonuclease activity. The enzyme consists of a single polypeptide with a molecular weight of 94kDa. It is developed for real time PCR or as basis enzyme for real time PCR diagnostics systems.

Features:
Maximo M-Superhot Taq DNA Polymerase for qPCR is designed for Real-Time PCR and Hot-start PCR. A special inhibitor suppresses the reaction at room temperature until after the first denaturation step. This prevents primer-dimers and other artefacts. Using the enzyme there is no need to adjust the existing standard PCR protocol.

Applications:
- Hot Start and real time PCR
- Multiplex PCR
- Amplification of complex genomic and cDNA templates
- no primer-dimers and other artêfacts; inactive at room temperature
- short activation time for real time PCR
- enhanced PCR sensitivity

Concentration: 5 u/µl

Unit definition:
One unit is defined as the amount of enzyme that incorporates 10 nmoles of dNTP's into acid-insoluble form in 30 minutes at 74°C under assay conditions:
25mM TAPS pH 9.3 at 25°C, 50mM KCl, 2mM $MgCl_2$; 1mM beta-mercaptoethanol; 200µM each dATP, dGTP, dTTP and 100 µM dCTP (a mix of unlabled and µ-[^{32}P]-labled); 12.5 µg activated salmon sperm DNA in the final volume of 50 µl

Storage Buffer:
20 mM Tris-HCl (pH 8.0), 100 mM KCl, 0.1 mM EDTA; 1 mM DTT, 50 % Glycerol, 0.5 % Nonident P-40, 0.5 % Tween-20

Reaction Buffer:
Reaction buffer (10X)" incomplete" (red cap):160 mM $(NH_4)_2SO_4$, 670mM TrisHCl pH8,8, 0,1% Tween-20
Reaction buffer (10X) "complete" (yellow cap):160 mM $(NH_4)_2SO_4$, 670mM TrisHCl pH8,8, 0,1% Tween-20, 25mM $MgCl_2$
separate Tube: $MgCl_2$ (100 mM, green cap)

Transportation: on blue ice

by Bioswisstec AG
Ebnatstrasse 65
8200 Schaffhausen

visit seraglob.com
info@seraglob.com

Tel +41 52 620 33 44
Fax +41 52 620 33 45

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Storage: at -20°C for 24 months or for more than 3 months at +4°C

Quality control:
Activity and performance test in real time PCR, SDS-PAGE purity, absence of endonucleases/nickases and exonucleases test

Use your existing and optimized protocol. In contrast to chemically modified Taq DNA pol. where the first denaturation step needs up to 15 min, Maximo M-Superhot Taq for Real Time PCR does not need a prolonged heating or denaturation time and works excellent basis enzyme for real time PCR.

Component	Volume per reaction
10X reaction buffer	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-Superhot 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

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General Thermo-Cycler protocol:

Step	Time	Temperature
Initial denaturation	2-5 min	94-95°C
25-30 Cycles:		
Denaturation	10 -25 sec	94-95°C
Annealing	10 -25 sec	55-65°C
Extension	60 sec	72°C per 1kb
Final extension	5 min	72°C

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

Order information

Prod. No.	Description	Quantity
S9105	Maximo M-Superhot Taq DANN Polymerase	200 Units
S9106	Maximo M-Superhot Taq DANN Polymerase	1000 Units
S9107	Maximo M-Superhot Taq DANN Polymerase	1 x 5000 Units