

m-Superhot Taq DNA Polymerase

Features: Maximo M-Superhot Taq DNA Polymerase for qPCR is designed for Real Time 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 artefacts; inactive at room temperature
- short activation time
- enhanced PCR sensitivity

Description:

Maximo M-Superhot Taq DNA is an optimized mixture of a high processive Taq DNA Polymerase and special inhibitors to Taq DNA. The enzyme is a thermostable DNA polymerase that possesses a 5'→3' polymerase activity and a double-strand specific 5'→3' exonuclease activity. The enzyme consists of a single polypeptide with a molecular weight of 94KD.

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 MgCl₂; 1mM beta-mercaptoethanol; 200μM each dATP, dGTP, dTTP and 100 μM dCTP (a mix of unlabeled and μ-[³²P]-labeled); 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 (x10) "incomplete" (red cap): 160 mM (NH₄)₂SO₄, 670mM TrisHCl pH8,8, 0,1% Tween-20

Reaction buffer (x10) "complete" (yellow cap): 160 mM (NH₄)₂SO₄, 670mM TrisHCl pH8,8, 0,1% Tween-20, 25 mM MgCl₂

MgCl₂ (100 mM; green cap)

Quality control:

Activity and performance test, SDS-PAGE purity, absence of endonucleases/nickases and exonucleases test, Lot-stability

Usage:

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 does not need a prolonged heating or denaturation time.

Components	Volume per reaction
10X reaction buffer complete	5 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 M-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 MgCl₂ concentration for best result

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

Transportation: on blue ice

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

Order information:

Cat.-no	Description	Amount
S105	Maximo M-Superhot Taq DNA Pol. (qPCR)	200 units
S106	Maximo M-Superhot Taq DNA Pol. (qPCR)	5x200 units
S107	Maximo M-Superhot Taq DNA Pol. (qPCR)	5000 units