DFS Taq PLUS DNA Polymerase (DFS = DNA Free Sensitive)

Features:
DFS-Plus Taq DNA Polymerase provides a new formula in buffers and additives to prevent failures in PCR-applications were inhibitors (e.g. proteins, fat or PS) reduce the performance. It is **free of bacterial DNA traces**. The robust enzyme is well suited for sensitive experiments using random primers or bacterial templates. Because of the high sensitivity less than 6 molecules can be detected.

Application:
Instead of conventionally purified Taq-DNA Polymerase for sensitive PCR reactions, for the detection of bacterial DNA or for applications where inhibitors decrease the performance of regular polymerases

Reaction conditions:
Same as for conventionally purified Taq-DNA Polymerase.

Concentration
5 units/µl supplied in 10 mM KPO_4 (pH 7.4 at 25°C), 0.1 mM EDTA, 0.1% Tween 20, 0.1% Triton-X 100 and 50 % (v/v) glycerol.

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 74°C.

Reaction Buffers provided:
10 X **Reaction buffer " incomplete":** 160 mM $(NH_4)_2SO_4$, 670 mM TrisHCl pH 8.8, 0.1% Tween-20, additives
10 X **Reaction buffer "complete":** 160 mM $(NH_4)_2SO_4$, 670 mM TrisHCl pH 8.8, 0.1% Tween-20, additives, 25 mM
separate tube of: $MgCl_2$ (100 mM)

Quality Control:
- Endonucleases Incubation of 20 units of the enzyme in 1x reaction buffer with 1 µg lambda DNA for 16 h at 65°C in 50 µl yields no detectable degradation of DNA.
- Incubation of 20 units of the enzyme in 1x reaction buffer with 1 µg lambda DNA EcoR I/Hind III fragments for 16 h at 65°C in 50 µl yields no detectable degradation of DNA.
- Incubation of 32 units of the enzyme in 1x reaction buffer with 1 µg supercoiled pUC18 DNA for 16 h at 70° C in 50 µl resulted in no relaxation.
- Priming activity Incubation of 40 units of the enzyme in 1x reaction buffer with 100 ng template DNA and 0.2 mM dNTPs each, but without primers in 100 µl resulted in no DNA synthesis.
- PCR Test Good performance of DNA amplification was confirmed by using Lambda DNA as template (amplified fragment 12 kb) and human placenta DNA as template (amplified fragment 3.0 kb).
- **No DNA contamination** with entero-bacterial DNA

Transport: Shipping at ambient temperature has no negative effects on the performance of this enzyme.

Storage: at –20 °C is recommended to safeguard against growth of bacteria that may be introduced during handling.

.. a good decision ..

GeneON
Contact Phone +49-(0)-621- 5720 864 Fax: +49-(0)-621-5724 462
E-Mail: mailto:info@geneon.net **WEB:** www.tag-dna.com/ **Version: 17.08.2010 AS**

Standard Protocol:

Components	Volume per reaction
10X reaction buffer	5 µl
$MgCl_2$	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
DFS-PlusTaq DNA Polymerase (5 u/µl)	0.1 – 0,8 µl
Sterile dest. Water (molecular grade)	up to **50 µl total reaction volume**

Note:
- vortex all solutions carefully before using
- dispense all reagents on ice
- 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	2-5 min	94-95°C
25-30 Cycles: Denaturation Annealing Extension	 10-25 sec 10-25 sec 60 sec	 94-95°C 55-65°C 72°C per 1kb
Final extension	5 min	72°C

Ordering information:

Cat.-no	Description	Amount
N140	Maximo DFS-Plus Taq Polymerase	500 units
N142	Maximo DFS-Plus Taq Polymerase	5x500 units
N142	Maximo DFS-Plus Taq Polymerase	20x500 units

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DFS-Plus Taq PLUS DNA Polymerase (DFS = DNA Free Sensitive)
Cat.-No: N140, 500 units

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10 X **Reaction buffer "complete":** 160 mM $(NH4)_2SO_4$, 670 mM TrisHCl pH 8.8, 0.1% Tween-20, additives, 25 mM **separate tube** of: $MgCl_2$ (100 mM)

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Standard Protocol:

Components	Volume per reaction
10X reaction buffer	5 µl
$MgCl_2$	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
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