TECHNICAL SHEET

PRODUCT NAME: **Thermus aquaticus (TAQ) polymerase with glycerol (x50000 U)**

Code:	MT-25TAQG
Physical State:	Liquid
Source:	*Escherichia coli.*
Description:	Recombinant Taq DNA polymerase expressed and purified from *Escherichia coli.*
Appearance:	Clear
Purity:	>95%
Activity:	10 U/µL
Storage Conditions:	Storage at -20ºC or -80ºC.
Health & Safety Information:	Good Laboratory Practices should be followed when handling this material. The end user assumes all responsibility for care, custody and control of the material, including its disposal, in accordance with the respective national regulations.
Presentation:	50 % glycerol, Tris Buffer with additives and salts, pH: 7.4

THIS PRODUCT IS INTENDED FOR RESEARCH USE ONLY.

Date: **17/08/2022**

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General description

Thermus aquaticus (Taq) DNA polymerase (MT-25TAQ) is a thermally stable, processive, 5'→3' DNA polymerase, which exhibits more robust amplification than other commonly uses polymerases, showing very high activity over a wide range of PCR templates and routine molecular applications. It catalyzes the polymerization of nucleotides into duplex DNA in 5' → 3' direction and possesses a 5' → 3' exonuclease activity. The enzyme is isolated and purified from a plasmid expressed in Escherichia coli which contains the thermostable DNA polymerase gene of Thermus aquaticus cloned. The enzyme has a molecular weight of approximately 94kDa. The presence of glycerol makes this product perfect to be used in developing non-lyophilized molecular biology products.

Storage and stability

It is recommended to keep it at -80ºC for optimum stability. Repeated freeze/that should be avoided. When stored under these conditions the polymerase retained full activity until the expiry date on the outer box label

Quality control

Each lot of Taq DNA polymerase is tested for sensitivity. Purity is also checked by SDS-electrophoresis and HPLC.

Analytical sensitivity Assay

Analytical sensitivity of each lot of TAQ DNA polymerase is evaluated performing standard curves in parallel with a reference lot. 10-fold serial dilution of control cDNA is performed and 5 µl of each dilution are added to 20 µl reaction mixtures containing TAQ DNA polymerase (10 U), specific primers and probe (500 nM and 250 nM respectively), 10 X Reaction Buffer (1 X), MgCl2 (3 mM) and dNTPs (0.8 mM each). Amplification conditions are those specify for Taq DNA Polymerase. Direct detection of PCR products is monitored by measuring the relative fluorescence units (RFU) produced by the result of probe hydrolysis after every cycle. And the resulting parallel standard curves are compared and assessed by analyzing the fluorescence, the minimum concentration of nucleic acids detection, Ct values and the sigmoid shape of the curves.

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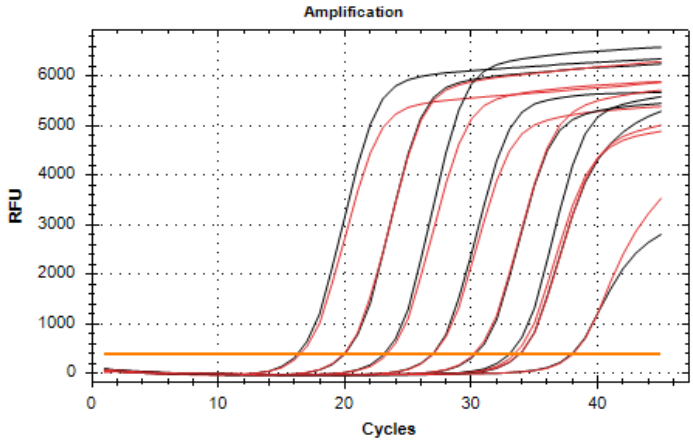
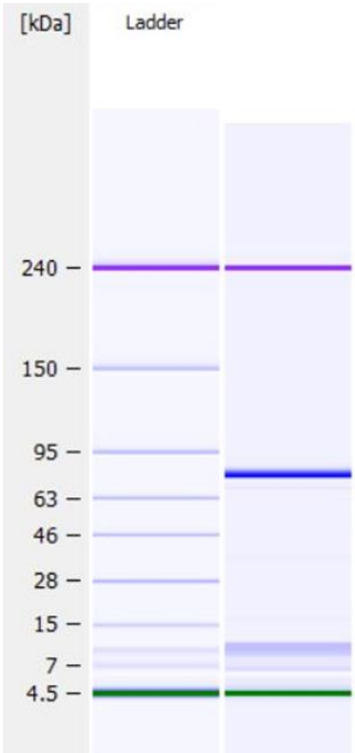


Image: comparation of parallel stand curves of a reference lot of Taq DNA polymerase (in black) and an evaluation lot of Taq DNA polymerase (in red). Similar efficiency of amplification is observed.

SDS-electrophoresis

SDS-PAGE gel in reducing conditions:



If technical support is needed, please contact us (bioscience@certest.es)

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