ENZYMES

Tth DNA Polymerase

ORIGIN ***E.coli*** **(Recombinant)**

CAT# TTH Range
EC# 2.7.7.7

SPECIFICATION

Concentration/Activity*	5 U/µL
Purity	≥90%
Ribonuclease Activity	None detected
Endonuclease Activity	None detected
Nicking Activity	None detected

*One unit is defined as the amount of enzyme that will incorporate 10 nmoles of dNTP into an acid insoluble material in 30 min at 75°C.

PRODUCT FORMAT

The enzyme is formulated in 10 mM Tris-HCl (pH 7.5), 300 mM KCl, 0.1 mM EDTA, 1 mM DTT, 1% Triton X-100, 500 mg/ml BSA, 50% Glycerol and stored at -20°C.

PART #	DESCRIPTION	CONTENT/FORMAT
TTH-301	Tth DNA Polymerase Kit	0.05mL (250U) Tth DNA Polymerase 1mL 10x Reaction Buffer for Tth 1mL Dilution Buffer 1mL 2mM dNTPs
TTH-329L	Tth DNA Polymerase 10KU	2mL (10KU) Tth DNA Polymerase
TTH-3R	10x Buffer for Tth	1mL 10x Reaction Buffer for Tth

Anti-Taq/Tth Hotstart Antibody available. Please see data sheet for TCP range.

DESCRIPTION AND APPLICATION

Tth DNA polymerase is a thermostable DNA polymerase derived from the thermophilic bacteria *Thermus thermophilus* (Tth) HB8. The enzyme has a reverse transcriptase activity in addition to a 5′→3′ polymerase activity and a double strand specific 5′→3′ exonuclease activity in the presence of Mn^{2+} ions. Therefore, this enzyme enables "one-step RT-PCR" including the reverse transcription and PCR steps.

CHARACTERISTICS

Enzyme Features:

- Exhibits reverse transcriptase activity in the presence of Mn^{2+} ions.
- Effective for the amplification of GC-rich targets and crude samples.
- Effective for reverse transcription of RNA with complicated secondary structure due to the reaction occurring at high temperature (i.e. 60°C).

SEKISUI DIAGNOSTICS
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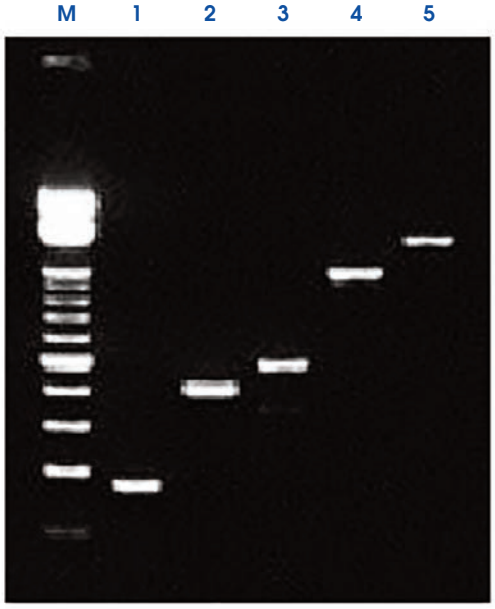
Application Data: Distinct and specific amplified bands from 180 bp to 1.3 kb genes from human genomic DNA were observed with rTth DNA polymerase by 1% agarose gel electrophoresis.



M: 100bp Ladder
1: 180bp p53 exon8
2: 406bp b-globin
3: 468bp b-globin
4: 1kb b-globin
5: 1.3kb b-globin

TARGET:
Human β-globin gene (406bp-1.3kb)
Human p53 Exon 8 (180bp)

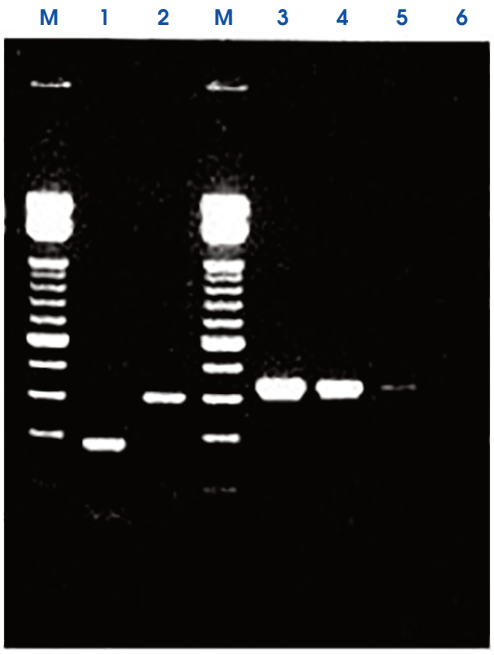
REACTION CONDITION:
see typical reaction set up

SAMPLE:
Human Genomic DNA 50ng

CYCLING CONDITION:
94°C 2min.
94°C 10sec.
55°C 30sec.
68°C 1min./kb
35 cycles

Application Data: The single-enzyme RT-PCR with rTth DNA polymerase gave distinct amplification bands, whereas RT-PCR with M-MLV reverse transcriptase and rTaq DNA polymerase gave very faint bands.

Application Data: Please refer to our Data Sheet for the *RNA-direct* Realtime PCR Master Mix for performance data on this enzyme.



1: 180bp yeast actin, Total RNA 1mg
2: 300bp yeast actin, Total RNA 1mg
3: 350bp 18s rRNA, Total RNA 100 pmol
4: 350bp 18s rRNA, Total RNA 10 pmol
5: 350bp 18s rRNA, Total RNA 100 pmol
6: 350bp 18s rRNA, Total RNA 10 pmol

1-4: rTth DNA polymerase
5,6: M-MLV reverse transcriptase
+ rTaq DNA polymerase

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