



ZmTech® Taq DNA Polymerase (Cat. T207022)

Component:

1. 10x PCR reaction buffer containing 15mM MgCl₂
2. ZmTech® Taq DNA Polymerase Supplied at 6.25 units/μl, 0.2ul/reaction (total 25ul).

Storage Temperature: -20°C

Reagents required but not provided: 10mM dNTP mix (dATP, dCTP, dGTP, TTP sodium salts), PCR grade water

Product Description:

- Storage in 50% glycerol containing 40 mM Tris-HCl (pH 7.5), 100 mM NaCl, 0.1 mM EDTA, 1 mM DTT, 0.5mM AEBSF and 0.1% Triton X-100 (a nonionic detergent to increase enzyme stability during longer incubations).
- Source: An enzyme from an *E. coli* strain that carries the *Taq* DNA Polymerase gene, possesses a 5'→3' polymerase activity and a double-strand specific 5'→3' exonuclease activity, can be used to synthesize DNA that containing secondary structure or high GCs regions, but not for thermal cycle sequencing. The error rate less than 332 x10⁻⁶ bases.
- Typical applications: complex genomic or cDNA templates (high GCs regions, high methylated regions or other multiple modification regions), very low-copy-number targets, multiple primer pairs in the same reaction tube.
- Specific features and benefits:

Application:	Target template length	Fidelity	specificity	GC-rich	yield
Routine PCR	up to 2 kb	****	****	***	***
Hot-start PCR	up to 2 kb	****	****	***	****
Routine PCR	up to 5 kb	***	***	***	**
Hot-start PCR	up to 5 kb	***	****	***	***

Recommend reaction Conditions:

20 mM Tris-HCl, 10 mM (NH₄)₂SO₄, 10 mM KCl, 2 mM MgSO₄, 0.1 % Triton X-100, pH 8.8 @ 25°C

Unit definition:

One unit is defined as the amount of the enzyme able to catalyze the incorporation of 10 nmoles of dNTP into an acid-insoluble form in a 50ul reaction in 30 minutes at 65°C.

Precautions and Disclaimer:

This product and procedure described are intended for R&D use only. Purchase of this product does not convey a license to perform any patented process.

Procedure:

1. **Preparation of PCR Master Mix**
for a single reaction (total volume: 25uL) in a 0.2 or 0.5 mL microtube.

Component	Volume (μL)	Final Concentration
10x PCR Buffer	2.5	1x
10mM dNTP mix	0.5	200μM
MgCl ₂	X	(1.5mM-7mM)
DNA Template	2	determined by user
Forward primer (5μM)	1	200nM
Reverse primer (5μM)	1	200nM
ZmTech Taq DNA Polymerase	0.2	0.05units/ μL
PCR grade water	up to 25 μL	

2. **Setup typical thermal cycling parameters**



Enzyme activation step:	95°C	5 minutes
25-40 cycles:		
Denaturation	95°C	30 seconds
Annealing	X°C	30 sec dependent on T _m of primers
Extension	72°C	1 minute (1min per kb amplicon)
Hold 4°C		

Evaluation:

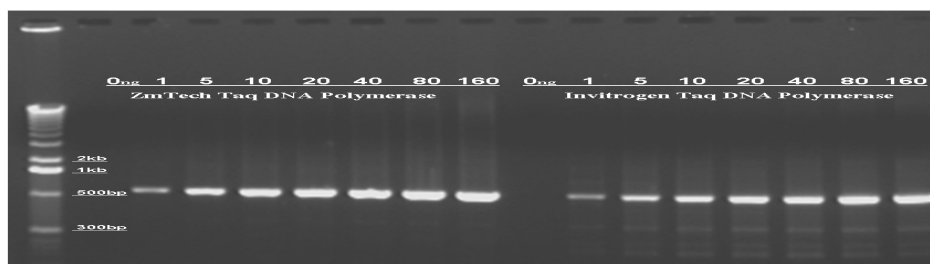


Figure:

Comparison of amplification of single-copy gene from human genomic DNA, using ZmTech Taq DNA Polymerase and competitor "I" Taq DNA Polymerase (Recombinant) and PCR reactions performed for 32 cycles, Showing high fidelity, specificity and yields of PCR product.