Titan Taq DNA Polymerase

Cat. No.	Pack Size	Conc.
BTS0001	50 U SAMPLE	5 U/µl
BT10101	500 U	5 U/µl
BA00102	1000 U	5 U/µl
BA00103	2000 U	5 U/µl

Storage & Shipping:

Store at -20°C, shipping at room temperature.

Shipping and temporary storage for up to 1 month at room temperature has no detrimental effects on the quality of Titan Taq DNA Polymerase.

Reagents Provided:

- **Titan Taq DNA Polymerase**
- **10x Reaction Buffer 1 (Mg^{2+} free)**: 800 mM Tris-HCl, 200 mM $(NH_4)_2SO_4$, 0.2% w/v Tween-20.
- **25 mM $MgCl_2$**.

Description:

Titan Taq is a highly processive, thermostable DNA polymerase. Due to its genetic modifications Titan Taq has an enhanced stability at room temperature with no activity loss for up to 1 month.

The enzyme has 5'→3' polymerization-dependent exonuclease replacement activity but lacks 3'→5' exonuclease activity.

Source:

Purified from an *E. coli* strain that carries an overproducing plasmid containing a modified gene of *Thermus aquaticus* DNA Polymerase.

Storage and Dilution buffer:

50% glycerol (v/v), 20 mM Tris-HCl pH 8.7 at 25ºC, 100 mM KCl, 0.1 mM EDTA and stabilizers.

Quality data:

The enzyme is free of nicking and priming activities, exonucleases and non-specific endonucleases. SDS/PAGE - 95 kD band, >98% pure. Activity and stability tested via thermo-cycling. The error rate per nucleotide per cycle is **~ 2.5×10^{-5}**; the accuracy is ~ 4×10^4. Estimated half-life at 95ºC is 1.5 hours.

Unit definition:

One unit is defined as the amount of enzyme required to catalyze the incorporation of 10 nmol of dNTPs into an acid-insoluble form in 30 minutes at 74ºC.

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Recommended PCR reaction mix:

Component	Volume	Final conc.
Titan Taq (5 U/µl)	0.4-1.0 µl	0.02-0.05 U/µl (2-5 U)
10x Buffer 1	10 µl	1x
25 mM $MgCl_2$	6-10 µl	1.5-2.5 mM
20 mM dNTP mix	1 µl	200 µM
Primer Forward (10 pmol/µl)	1-3 µl	0.1-0.3 µM
Primer Reverse (10 pmol/µl)	1-3 µl	0.1-0.3 µM
DNA template	5-20 µl	5-100 ng/µl
H_2O PCR grade	Up to 100 µl	
Total	**100 µl**	

Recommended PCR cycles:

Cycle step	Temp.	Time	Cycles
Initial denaturation	**95ºC**	**3-5 min**	1
Denaturation	95ºC	30-60 s	26-35
Annealing	50-68ºC	30-60 s	
Elongation	72ºC	1-4 min	
Final elongation	72ºC	5-10 min	1

IMPORTANT: *Annealing temperature should be 2-6ºC lower than the primer melting temperature. Elongation time should be ~1 min/1 kb.*

Safety warnings and precautions:

This product is designed for research purposes and *in vitro* use only. According to common laboratory safety practice, it is recommended to wear protective clothing, gloves and safety glasses. Please refer to www.bioatlas.com for Material Safety Data Sheet of the product.
Some applications this product is used in may require a license which is not provided by the purchase of this product. Users should obtain the license if required.

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