

## Atlas Pfu DNA Polymerase

Cat. No.	Pack Size	Conc.
BAS0005	50 U SAMPLE	5 U/μl
BA00503	500 U	5 U/μl
BA00504	1000 U	5 U/μl
BA00505	2500 U	5 U/μl

### Storage:

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

### Reagents Provided:

- **Atlas Pfu DNA Polymerase in Storage Buffer:** 20 mM Tris-HCl (pH 8.0), 1 mM DTT, 0.1 mM EDTA, 100 mM KCl, 0.5% Nonidet P40, 0.5% Tween 20 and 50% glycerol.
- **10x Pfu Buffer:** 200 mM Tris-HCl (pH 8.8 at 25°C), 100 mM KCl, 100 mM (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>, 1% Triton X-100, 1 mg/ml BSA.
- **10x Pfu Buffer with MgSO<sub>4</sub>:** 200 mM Tris-HCl (pH 8.8 at 25°C), 100 mM KCl, 100 mM (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>, 1% Triton X-100, 1 mg/ml BSA, 20 mM MgSO<sub>4</sub>.
- **25 mM MgSO<sub>4</sub> Solution**

### Description:

Atlas Pfu DNA Polymerase has been *purified* from the Recombinant *E. coli* strain with cloned gene encoding *Pyrococcus furiosus* DNA polymerase.

In addition to 5'→3' DNA polymerase activity, Atlas Pfu DNA Polymerase also possesses 3'→5' exonuclease (proof-reading) activity.

Atlas Pfu DNA Polymerase exhibits the lowest error rate of any thermostable DNA polymerase studied. It is up to ten-fold more accurate than normal Taq DNA polymerase. Consequently, Atlas Pfu DNA Polymerase is useful for polymerization reactions requiring high-fidelity synthesis.

### Quality data:

Activity and stability tested at 20, 30 and 40 cycles of PCR reactions at 95°C. Tested for the absence of human DNA contamination by PCR with Alu-specific primers.

### Unit definition:

One unit of the enzyme catalyzes the incorporation of 10 nanomoles of deoxyribo-nucleotides into a polynucleotide fraction in 30 min at 70°C.

### Recommended PCR reaction mix:

Component	Quantity
Atlas Pfu (5 U/μl)	1.25-2.5 U
10x Pfu Buffer (or with MgSO <sub>4</sub> )	5 μl (1x)
25 mM MgSO <sub>4</sub>	3-5 μl (1.5-2.5 mM)
10 mM dNTP mix	1 μl (200 μM)
Primer Forward	0.3 -1 μM
Primer Reverse	0.3 -1 μM
DNA template	1-100 ng/μl
H <sub>2</sub> O PCR grade	Up to 50 μl
<b>Total</b>	<b>50 μl</b>

**Recommended PCR cycles:**

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

**IMPORTANT:** Annealing temperature should be 2-6°C lower than the primer melting temperature.

**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](http://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.*