

Atlas Pfu DNA Polymerase - Data Sheet

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

Lot no:

Exp. Date:

Storage: -20 °C

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 (NH₄)₂SO₄, 1% Triton X-100, 1 mg/ml BSA.
- **10x Pfu Buffer with MgSO₄:** 200 mM Tris-HCl (pH 8.8 at 25°C), 100 mM KCl, 100 mM (NH₄)₂SO₄, 1% Triton X-100, 1 mg/ml BSA, 20 mM MgSO₄.
- **25 mM MgSO₄ 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 ₄)	5 μl (1x)
25 mM MgSO ₄	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 ₂ O PCR grade	Up to 50 μl
Total	50 μl

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 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.