

## Pfu DNA polymerase

Cat: C101141 (250 U, 50 µL)

Cat: C101142 (500 U, 100 µL)

Store at -20 °C

### Contents:

Component	C101141	C101142
Pfu DNA poly. 5 U/µl	250 U	500 U
MgCl <sub>2</sub> Solution 25 mM	0.5 ml	1ml
5X Pfu Buffer MgCl <sub>2</sub> free	1 ml	1.7 ml

### Description:

Pfu DNA Polymerase is a thermostable enzyme with a molecular weight of 90 kDa. It catalyzes the polymerization of nucleotides into duplex DNA in the 5'\_3' direction, resulting in blunt-ended PCR products **without 3'-dA overhangs**.

Pfu DNA Polymerase exhibits 3'\_5' exonuclease (proofreading) activity that enables the polymerase to correct the mis-incorporation of nucleotide, and lacks 5'\_3' exonuclease activity. It is suitable for PCR and primer extension reaction that requires high fidelity when the PCR fragment is relatively **shorter than 3 kbp**. The enzyme exhibits 3'>5' proofreading

activity, resulting in over 10-fold higher PCR fidelity than possible with Taq DNA Polymerases.

### Kit storage:

This kit should be stored at -20 °C. Under this condition reagents are stable for two years from the date of production.

### General Reaction Protocol:

1. Thaw 5X reaction buffer, dNTP mixture.
2. Mix the master mix thoroughly and dispense appropriate volumes into PCR tubes or plates.
3. Add templates DNA to the individual PCR tubes or wells containing the master mix.

Component	Volume	Final Conc.
5X Reaction Buffer	4 µL	1X
MgCl <sub>2</sub> Solution 25 mM	1.6 µL	2 mM
40 mM dNTPs Mix (10 mM each)	0.5 µL	0.25 mM
Upstream Primer (10 pmol/ µL)	1 µL	0.5 pmoles/µL
Downstream Primer (10 pmol/ µL)	1 µL	0.5 pmoles/µL
Template DNA	Variable	10 fg~1 µg
PCR grade water	Variable	-
Pfu DNA poly. (5 units/µl)	0.25 µL	
Total Volume	20 µL	-

4. Program the PCR machine according to the program outlined.

Cycle	Time	Temp °C
1	4 min	95
	30 sec	94
30-35	30 sec	57
	60 sec	72
1	5 min	72

### Notes:

- \* Longer extension time makes nonspecific bands
- \* Extension rate for this enzyme is near 500bp/min.

### Agarose gel Electrophoresis:

Run the total 5-7 µL of PCR products alongside 3 µL DNA marker on a 2% agarose gel containing Green viewer DNA safe stain.

### Disclaimers and Addresses:

This product is for **Research Use Only** and should only be used by trained professionals.

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