



## AviPfu™

Cat. No.: A10310	250 Units
Cat. No.: A10311	500 Units
Cat. No.: A10312	1000 Units

**Store at -20 °C**

Component	A10310	A10311	A10312
Enzyme (5U/ µl)	50 µl	100 µl	200 µl
MgCl <sub>2</sub> 25 mM	1 ml	2x 1 ml	4 x 1ml
5x Buffer	1 ml	2x 1 ml	4 x 1ml

### Description:

**AviPfu™** is a thermostable enzyme with a molecular weight of 90 kDa.

**AviPfu™** catalyzes the polymerization of nucleotides into duplex DNA in the 5'\_3' direction, resulting in blunt-ended PCR products **without 3'-dA overhangs**.

**AviPfu™** exhibits 3'\_5' exonuclease (proofreading) activity that enables the polymerase to correct the mis-incorporation of nucleotide, and lacks 5'\_3' exonuclease activity.

**AviPfu™** 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:

**AviPfu™** 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	Vol	Final Conc.
5X Reaction Buffer	4 µL	1X
MgCl <sub>2</sub> Solution 25 mM	1.6 µl	2 mM
dNTPs Mix (10 mM each)	0.4 µl	0.2 mM
Upstream Primer (10 pmol/µl)	1 µl	0.5 pmol/µl
Downstream Primer (10pmol/µl)	1 µl	0.5 pmol/µl
Template DNA	Variable	10 fg~1 µg
PCR grade water	Variable	-
<b>AviFu™</b>	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 **AviPfu™** is near 600bp/min.

**Agarose gel Electrophoresis:**

Run the total 5-7 µl of PCR products alongside 3 µl DNA marker on a 2% agarose gel containing **AviStain™**

**Disclaimers:**

**AviPfu™** is for **Research Use Only** and should only be used by trained professionals.