



AviLong™

Cat. No.: A10410 250 Units
Cat. No.: A10411 500 Units
Cat. No.: A10412 1000 Units

Store at -20 °C

Component	A10410	A10411	A10412
Enzyme (5U/ µl)	50 µl	100 µl	200 µl
MgCl ₂ 25 mM	1 ml	2x 1 ml	4 x 1ml
5X Buffer	1 ml	2x 1 ml	4 x 1ml

Description:

AviLong™ is a chimeric Pfu which has a DNA binding protein at the N-terminal portion of the gene.

AviLong™ keeps significant activity after exposure to 99 °C or repeated exposure to 98 °C with more processivity and extension rate than Pfu DNA polymerase. It catalyzes the polymerization of nucleotides into duplex DNA in the 5'_3' direction, resulting in blunt-ended PCR products **without 3'-dA overhangs.**

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

AviLong™ is suitable for PCR and primer extension reaction that requires high fidelity when the PCR fragment is relatively **higher than 3 kb.**

The enzyme exhibits 3'>5' proofreading activity, resulting in over 20-fold higher PCR fidelity than possible with Taq DNA Polymerases

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Kit storage:

AviLong™ 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.

Component	Volume	Final Conc.
5X Reaction Buffer	4 μ l	1X
MgCl ₂ 25 mM	1.2 μ l	1.5 mM
dNTPs Mix (10 mM each)	0.4 μ l	0.2 mM
Upstream Primer (10 pmol/ μ l)	1 μ l	0.5 pmol/ μ l
Downstream Primer (10 pmol/ μ l)	1 μ l	0.5 pmol/ μ l
Template DNA	Variable	10 fg~1 μ g
PCR grade water	Variable	-
AviLong™	0.25 μ l	
Total Volume	20 μ l	-

3. Add templates DNA to the individual PCR tubes or wells containing the master mix.
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 **AviLong™** is near 3000 bp/min

Agarose gel Electrophoresis:

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

Disclaimers:

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