

Ex Taq™ Properties

- The half life at 95°C is 35 min, and at 97.5°C is 7 min.
- Temperature range for extension is 60-72°C.
- The processing speed is 1-2 kb/min.
- Possesses weak 5'-3' activity and no strand displacement.
- 80% of PCR products contain 3'-A overhangs and can be cloned into T-Vectors.
- Amplification of up to 20 kb using genomic DNA and 30 kb using λDNA is possible.
- The mutation ratio (mutant colonies:total colonies) using the Kunkel method (Kunkel, T.A. [1985] J. Bio. Chem. 260: 5785-5796) is 62×10^{-4} ; with a relative error rate of 0.27 as compared to *Taq*

Takara Ex Taq™ Standard PCR Reaction Conditions

Below is the recommended general reaction mix for a single 50 µL Takara *Ex Taq*™ PCR reaction. To minimize the number of pipetting steps and reduce the risk of contamination, we recommend that you prepare a master mix of reagents that is sufficient for all reactions being performed.

<u>Reagent</u>	<u>Volume</u>	<u>Final Concentration</u>
Takara <i>Ex Taq</i> ™ DNA Polymerase (5 U/µL)	0.25 µL	1.25 U/50 µL
10X Buffer (20 mM Mg ²⁺ plus)	5.0 µL	1X
dNTP Mix (2.5 mM each)	4.0 µL	200 µM
Template*	1-5 µL	2.5-500 ng/50 µL
Primers	1-5 µL	0.2 µM each
Sterile ddH ₂ O	up to 50 µL	
Total volume	50 µL	

* DNA template amounts per 50 µL reaction:

Human genomic	0.1-1 µg
<i>E. coli</i> genomic or plasmid	10-100 ng
λ phage	0.5-2.5 ng

We recommend using the following starting points for optimizing PCR conditions for each primer pair:

Temp	Time	# Cycles
94 °C	1 min	1 cycle
94°C	30 sec	30 cycles
55°C*	1 min	
72°C	30-60 sec/kb	
72°C	2 min	final extension

*The annealing temperature may need to be optimized based upon the melting temperatures of your primers.