Features

Specific features of PCR enzymes are listed here in Table 1.

Table 1. PCR enzymes features and specifications

Feature \ Kit Name	Si-Taq Polymerase****	Hy-Taq Polymerase****	5t-pfu Polymerase**	Hy-Fidelity Pfu Polymerase
Fidelity* **	1	2	18	54
Expression rate	1-2 kb/min	6 kb/min	0.5 kb/min	2-4 kb/min
Amplification of genomic DNA fragment up	3 kb	4 kb	6 kb	15 kb
Amplification of plasmid DNA fragment up	—	—	10 kb	20 kb
Hot-start	No	No	No*	Yes
Applications				
Short fragment PCR	✓	✓	✓	✓
High throughput PCR	×	✓	×	×
Colony PCR	×	✓	×	×
High fidelity PCR	×	×	✓	✓
Blunt- end cloning	×	×	✓	✓
Site directed mutagenesis	×	×	✓	✓
Equipment & Reagents to be supplied by user				
• Pipets and pipet tips • Microcentrifuge tube • Thermal cycler • Mineral oil (for thermal cyclers without a heated lid) • Primers				

* Since, it is not hot-start, we recommended to add enzyme last during PCR.

** PCR Product can be directly cloned in to Blunt Vectors.

*** compare to Taq DNA Polymerase

**** Template-independent 'A' can be generated at the 3' end of PCR product.

Prepare PCR Reactions

It is recommended to prepare PCR reactions as indicated in Table2.

Table 2. Prepare PCR Reactions, 5t-pfu PCR Set

Component	Volume
Template	Variable
Forward primer (10 µM)	1 µl
Reverse primer (10 µM)	1 µl
5t-Pfu Polymerase, Recombinant, (2.5U/µl)	1 µl
PCR Buffer, 10X, with MgSO4, Optimized for 5t-Pfu Polymerase	4 µl
HiPure-dNTPs mix, 2.5 mM	5-8 µl
Water for Molecular Biology, Sterile, Filtered	Up to 50 µl

Tips for Optimizing PCR Reaction

- A final concentration of 2mM MgSO4 is sufficient for most targets amplification. For some targets, more Mg^{2+} may be required; use the 50 mM MgSO4 stock to test from 2 mM to 4 mM (final concentration) in 0.25 mM increments.