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Features

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

Table 1. PCR Set features and specifications

| Kit Name | Si-ROJE PCR Set**** | Hy-ROJE PCR Set**** | 5t-pfu PCR Set** | Hy-Fidelity Pfu PCR Set |
|--|----------------------------|----------------------------|-------------------------|--------------------------------|
| Feature | | | | |
| 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 | | | | |
| <ul style="list-style-type: none"> • 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

For each PCR set, the best condition is written here.

Table 2. Prepare PCR Reactions, Si-ROJE PCR Set

| Component | Volume |
|--|------------------|
| Template | Variable |
| Forward primer (10 μ M) | 1 μ l |
| Reverse primer (10 μ M) | 1 μ l |
| Si-Taq Polymerase, Recombinant (5U/ μ l) | 0.5 - 1 μ l |
| PCR Buffer, 10X, with Mg ⁺⁺ , optimized for Si-Taq polymerase | 5 μ l |
| HiPure-dNTP mix, 2.5 mM | 8 μ l |
| Water for Molecular Biology, Sterile, Filtered | Up to 50 μ l |

Table 3. Prepare PCR Reactions, Hy-ROJE PCR Set

| Component | Volume |
|--|------------------|
| Template | Variable |
| Forward primer (10 μ M) | 1 μ l |
| Reverse primer (10 μ M) | 1 μ l |
| Hy-Taq Polymerase, Recombinant (5U/ μ l) | 0.5 - 1 μ l |
| PCR Buffer, 10X, with Mg ⁺⁺ , optimized for Hy-Taq polymerase | 5 μ l |
| HiPure-dNTP mix, 2.5 mM | 8 μ l |
| Water for Molecular Biology, Sterile, Filtered | Up to 50 μ l |

Table 4. Prepare PCR Reactions, 5t-pfu PCR Set

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

Table 5. Prepare PCR Reactions, Hy-Fidelity Pfu PCR Set

| Component | Volume |
|--|------------------|
| Template | Variable |
| Forward primer (10 μ M) | 1 μ l |
| Reverse primer (10 μ M) | 1 μ l |
| Hy-Fidelity Pfu Polymerase, Recombinant, (2.5U/ μ l) | 1 μ l |
| PCR Buffer, 10X, with MgSO ₄ , Optimized for Hy-Fidelity Pfu Polymerase | 4 μ l |
| HiPure-dNTPs mix, 2.5 mM | 5-8 μ l |
| Water for Molecular Biology | Up to 50 μ l |

Tips for Optimizing PCR Reaction

- A final concentration of 2mM MgSO₄ is sufficient for most targets amplification. For some targets, more Mg²⁺ may be required; use the 50 mM MgSO₄ stock to test from 2 mM to 4 mM (final concentration) in 0.25 mM increments.