PowerPol 2X PCR Mix with Dye V2

Cat.No. : RK20729

Product Components

Components	Component Number	1 mL	5 mL	100 mL
PowerPol 2X PCR Mix with Dye V2	RM20395	1 mL	1 mL × 5	1 mL × 100

Product Description

PowerPol 2X PCR Mix with Dye V2 is an optimized premix with amplification rates up to 10 s/kb to save PCR reaction time. Reagents include DNA polymerases, dNTPs, $MgCl_2$, KCl, and other stabilizers. It only needs to add primers and templates to perform amplification. This product contains loading buffer, PCR products can be directly loaded for electrophoresis.

PowerPol 2X PCR Mix with Dye V2 can use complex genomic DNA as a template to amplify a 5 kb target fragment or a simple template such as lambda DNA to amplify a 10 kb target fragment. It is suitable for Colony PCR, genotype identification, vector construction, and other applications.

5′-3′exonuclease activity

No

3′-5′exonuclease activity

Yes

Fidelity

6X *Taq*

Product End

Blunt end

Storage

-20℃

Operation Description

Standard Protocol

1. It is recommended to prepare all reaction components on ice, and then quickly transfer the reaction system to a thermocycler preheated to 98℃.

Recommended Reaction

Component	25 μL Reaction	50 μL Reaction	Final Concentration
PowerPol 2X PCR Mix with Dye V2	12.5 μL	25 μL	1X
Forward Primer (10 μM)	0.5 μL	1 μL	0.2 μM
Reverse Primer (10 μM)	0.5 μL	1 μL	0.2 μM
DNA Template*	Variable	Variable	<300 ng
Nuclease-free Water	to 25 μL	to 50 μL	N/A

* Note: The optimal reaction concentration varies with different DNA templates. The recommended DNA template amounts for a 50 μL reaction are as follows. For long fragment amplification, the amount of template input can be appropriately increased:

DNA	Input Amount
Plants, animals and human gDNA	10 ng-100 ng
E.coli, lambda gDNA	10 pg-200 ng
Plasmid DNA	1 pg-10 ng
cDNA	1 - 5 μL (less than 10% of the total reaction volume)

Recommended PCR Program:

Step	Temp	Time	Cycles
Initial Denaturation	98℃	45 s*	1
Denaturation	98℃	10 s	30
Annealing	55-65℃**	30 s	
Extension	72℃	10-30 s/kb***	
Final Extension	72℃	5 min	1
Hold	4-12℃	-	1

*Note: In the case of high complexity DNA templates, such as high GC sequences, the predenaturation time should be extended to 3 min, and for colony PCR, it can be extended to 8 min for full denaturation.

**Note: In general, the annealing temperature can be set to 60℃ by default, and for primers longer than 20 nt are annealed at (lower primer Tm+3)℃; and for primers are shorter than 20 nt, an annealing temperature equivalent to the lower primer Tm.

***Note: For the low-complexity amplicons (such as plasmid DNA, Lambda DNA), or fragments within 1 kb in length, the extension condition is 10 s/kb. For high-complexity amplicons or fragments with a length of more than 1 kb, it is recommended to increase the extension time to 20-30 s/kb.