invitrogen

PCR SuperMix

Cat. No. 10572-014 **Size: 100 reactions**
Cat. No. 10572-063 **Size: 5000 reactions**

Store at -20°C (in a non-frost-free freezer)

Description

PCR SuperMix provides qualified reagents for the amplification of nucleic acid templates by the polymerase chain reaction (PCR). PCR SuperMix contains Mg^{++}, dNTPs, and recombinant *Taq* DNA Polymerase at concentrations sufficient to allow amplification during PCR. PCR SuperMix is supplied at 1.1X concentration to allow approximately 10% of the final reaction volume to be used for the addition of primer and template solutions. Reagents sufficient for 100 and 5000 amplification reactions of 50 µl each are provided.

PCR SuperMix may be stored at either -20°C or 4°C. Storage at 4°C avoids the necessity of thawing the mix before assembling the PCR. No detectable reduction of PCR performance or enzyme activity is observed after storage of PCR SuperMix for 8 months at 4°C. Repeated freeze-thaw cycles do not reduce performance or activity.

Component	100-rxn size	5000-rxn size
PCR SuperMix	4 × 1.125 ml	4 × 56.25 ml

Components

22 mM Tris-HCl (pH 8.4), 55 mM KCl, 1.65 mM MgCl2, 220 µM dGTP, 220 µM dATP, 220 µM dTTP, 220 µM dCTP, 22 U recombinant *Taq* DNA Polymerase/ml, stabilizers.

Guidelines and Recommendations

Since PCR is a powerful technique capable of amplifying trace amounts of DNA, all appropriate precautions should be taken to avoid cross-contamination. Ideally, amplification reactions should be assembled in a DNA-free environment. Use of aerosol-resistant barrier tips is recommended. Take care to avoid contamination of PCR SuperMix with the primers or template DNA used in individual reactions. PCR products should be analyzed in an area separate from the reaction assembly area.

A standard 50-µl reaction uses 45 µl of PCR SuperMix and 5 µl of primer and template solution. We have observed no decrease in product yield if the amount of template and primer solution added is between a fraction of a microliter and 20 µl. Lower yields occur as the Mg^{++} concentration drops to a suboptimal level. If the final Mg^{++} concentration is adjusted to 1.5 mM, the volume of primer and template solution that can be added to 45 µl of PCR SuperMix can exceed 50 µl.

Quality Control

The Certificate of Analysis provides detailed quality control and product qualification information for each product. Certificates of Analysis are available on our website. Go to www.invitrogen.com/support and search for the Certificate of Analysis by product lot number, which is printed on the box.

Protocol

The following protocol is suggested as a starting point and guideline when using PCR SuperMix. We recommend assembling reactions on ice from pre-chilled components. This protocol is for a reaction size of approximately 50 µl. The reaction size may be adjusted as desired.

Note: For multiple reactions with common components, prepare a master mix of the components common to all reactions to reduce pipetting errors.

1. Set up reaction tubes/plates on ice.
2. Add the following components in any order to each reaction vessel.
   - 45-µl PCR SuperMix
   - Primers (200 nM final concentration per primer is recommended)*
   - Template DNA solution*

   *Total volume of primer and template solution can be 0.5-20 µl.
3. Mix contents and cover with mineral or silicone oil, if necessary.
4. Cap reaction vessels and load in thermal cycler at 80°C.
5. Run cycling program.

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