SciRed™ Taq Mix

Key Features

SciRed™ Taq Mix is a ready-to-use 2x reaction mix with the Debna BioGene Taq DNA polymerase, the NH_4^+ buffer system, dNTPs and magnesium chloride present. Each reaction requires 25 µl of the SciRed™ Taq Mix. The primers, template and water are added to a total reaction volume of 50 µl to carry out primer extensions and other molecular biology applications.

SciRed™ Taq Mix offers several advantages. For example the set up time is significantly reduced. And the risk of contaminating component stocks is removed. Also the reduction of reagent handling steps leads to a better reproducibility.

It is noted that there is no need to purchase and use separate loading dyes. A portion of the reaction product is loaded onto an agarose gel for electrophoresis and the follow-up visualization. The red dye front runs at 1000 – 2000 bp on a 0.5 – 1.5% agarose gel.

Composition of the SciRed™ Taq Mix

- Tris-HCl pH 8.5, $(NH_4)_2S0_4$, 3 mM $MgCl_2$, 0.2% Tween® 20
- 0.4 mM of each dNTP
- Debna BioGene Taq DNA polymerase
- Inert red dye and stabilizer

Recommended Storage and Stability

Long term storage can be achieved at -20 °C. The product expiration date at -20 °C is stated on the label.

Storage at +4 °C can be done for up to 6 months.

Quality Control

Taq DNA Polymerase is tested for contaminating activities, with no traces of endonuclease activity, nicking activity or exonuclease activity.

Protocol

The protocol serves as guidance for ensuring optimal PCR results when using SciRed™ Taq Mix. Optimal reaction conditions such as incubation times, temperatures, and amount of template DNA must be determined individually.

1. First, thaw SciRed™ Taq Mix and primers. It is important to thaw the solutions completely and mix thoroughly before use to avoid localized concentrations of salts. Keep all components on ice.

2. Prepare a reaction mix. Table 1 shows the reaction set-up for a final volume of 50 µL. If needed, the reaction size may be scaled down. Use 10 µl of the SciRed™ Taq Mix in a final volume of 20 µl.

Table 1. Reaction components (reaction mix and template DNA)

Component	Vol./reaction*	Final concentration*
SciRed™ Taq Mix	25 µl	1x
25 mM $MgCl_2$	0 µl (0 – 6 µl)	1.5 mM (1.5 – 4.5 mM)
Primer A (10 µM)	1 µl (0.5 – 5 µl)	0.2 µM (0.1 – 1.0 µM)
Primer B (10 µM)	1 µl (0.5 – 5 µl)	0.2 µM (0.1 – 1.0 µM)
PCR-grade H_2O	X µl	-
Template DNA	X µl	genomic DNA: 50 ng (10 – 500 ng) plasmid DNA: 0.5 ng (0.1 – 1 ng) bacterial DNA: 5 ng (1 – 10 ng)
Total volume	50 µl	-

* Suggested starting conditions; theoretically used conditions in paranthesis

3. Mix the reaction mix vigorously and dispense appropriate volumes into the reaction tubes. Mix gently, e.g. by pipetting the reaction mix up and down a few times.

4. Add template DNA to the individual tubes thats contain the reaction mix.

5. Program the thermal cycler by following to the manufacturer´s instructions.

Temperatures and cycling times should be optimized for each new template target or primer pair for achieving optimum yield and specificity.

6. Place the tubes in the thermal cycler and start the reaction.

7. At the end of the run, simply load a portion of the reaction product (e.g. 10 µl) onto an agarose gel for analysis.