2X Super Taq plus PCR Master Mix without Dye — Instruction Manual

Catalogue Information

Catalogue No.	Product Name	Pack Size
BL1309A-05	2×Super Taq plus PCR Master Mix without Dye	(200 reactions x 50uL) 5 mL
BL1309a-10	2×Super Taq plus PCR Master Mix without Dye	(400 reactions x 50uL) 10 mL

Reactions are based on a 50 µL reaction volume (25 µL Master Mix per reaction).

Product Description

This product is a 2× concentrated, pre-mixed PCR solution containing Taq DNA polymerase, dNTPs, Mg^{2+}, reaction buffer and stabilizers. The optimized Taq DNA polymerase offers higher fidelity and stronger amplification performance than ordinary PCR. It is fast and convenient, with high sensitivity, strong specificity and good stability, greatly reducing human error. PCR products carry a protruding 3′ “A” base and, after purification, can be used directly for T-vector cloning.

This product is dye-free (colorless); after the PCR reaction, loading buffer must be added before electrophoresis. Products may also be purified for downstream applications such as restriction digestion, ligation and fluorescent (Sanger) sequencing.

Applications

- High-fidelity PCR and amplification of high-GC templates
- Amplification of complex genomic templates and longer fragments
- Molecular cloning, TA cloning and colony PCR (long fragments)
- First-generation (Sanger) sequencing template preparation

Product Features

- Fast and convenient: only primers and template need to be added for amplification.
- Higher fidelity: approximately 10× that of ordinary Taq DNA polymerase.
- Longer amplicons: up to 20 kb from plasmid and λDNA templates; up to 10 kb from genomic templates.
- Stronger amplification: suitable for complex genomic templates, high-GC templates and longer fragments.

Instructions for Use

Example based on a 50 µL PCR reaction.

1. Thaw the 2× Master Mix completely on ice, mix well and briefly centrifuge to collect the solution at the bottom of the tube. Note: mix and centrifuge each tube before opening; perform all PCR setup on ice.

2. Prepare the reaction system as in the table below (50 μL example):

	Component	Volume
1	2×Super Taq plus PCR Master Mix	25 μL
2	Forward Primer (10 μM)**	2 μL
3	Reverse Primer (10 μM)**	2 μL
4	DNA Template*	X μL
5	Water	to 50 μL total volume

***Template amounts:** 50–1000 ng genomic DNA, 1–30 ng plasmid, 0.05–10 ng λDNA, or 1–2 μL cDNA from an RT-PCR reaction.

****Annealing/primers:** if the primer is longer than 20 bases, set the annealing temperature to Tm + 3 °C; if shorter than 20 bases, set it to the lower Tm. A primer final concentration of 0.5 μM is recommended, adjustable between 0.2 and 1.0 μM.

3. Briefly centrifuge to collect the reaction at the bottom of the tube.

4. If the thermal cycler has no heated lid, add 25 μL of mineral oil.

5. Set the thermal cycler program:

Step	Temperature	Time	Cycles
Initial denaturation***	95 °C	3 min	1
Denaturation	95 °C	15 s	25–35
Annealing	50–72 °C	15 s	25–35
Extension	72 °C	30 s/kb	25–35
Final extension	72 °C	5–10 min	1

****The initial-denaturation time may be adjusted according to template complexity; extend to 5–10 min if necessary.

6. Electrophoresis: load 2–5 μL of the reaction for agarose gel electrophoresis to check the result. Dye-containing products can be loaded directly; dye-free products (this product) require addition of loading buffer before electrophoresis.

Precautions

1. The extension rate of this Taq DNA polymerase is about 30 s/kb; do not exceed 1 min/kb.
2. This product has high thermostability; the denaturation temperature may be set to 94–98 °C. For fragments ≥10 kb, a denaturation temperature of 94 °C for 30 s is recommended.
3. For professional scientific research use only. Not for clinical diagnosis or treatment, and not for use in food or pharmaceuticals.
4. For your safety and health, wear a lab coat and disposable gloves during operation.

Storage

Store at –20 °C. Shelf life: 24 months. Avoid repeated freeze–thaw cycles.

Notice

For in vitro research use only, not for diagnostic or therapeutic use. This product is not a medical device.

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