

Taq DNA Polymerase Master Mix

2.0 Master Mix Kit (2.0mM MgCl₂)

Catalogue no.: 150303 (500 reactions)

| Cat. No. | Size Reactions | Taq DNA Polymerase Master Mixes | MgCl ₂ Conc. |
|----------|----------------|---------------------------------|-------------------------|
| 120301 | 100 | 1.1x Master Mix | 1.5 mM |
| 120303 | 500 | 1.1x Master Mix | 1.5 mM |
| 120306 | 2.500 | 1.1x Master Mix | 1.5 mM |
| 130301 | 100 | 1.1x Master Mix | 2.0 mM |
| 130303 | 500 | 1.1x Master Mix | 2.0 mM |
| 130306 | 2.500 | 1.1x Master Mix | 2.0 mM |
| 140301 | 100 | 2.0x Master Mix | 1.5 mM |
| 140303 | 500 | 2.0x Master Mix | 1.5 mM |
| 140306 | 2.500 | 2.0x Master Mix | 1.5 mM |
| 150301 | 100 | 2.0x Master Mix | 2.0 mM |
| 150303 | 500 | 2.0x Master Mix | 2.0 mM |
| 150306 | 2.500 | 2.0x Master Mix | 2.0 mM |

Store at -20°C. Reagent for in-vitro laboratory use only

General Description

Taq DNA Polymerase Master Mix is a ready-to-use 2.0X reaction mix. Simply add primers, template, and water to successfully carry out primer extensions and other molecular biology applications.

Ampliqon Taq DNA Polymerase, the NH₄⁺ buffer system, dNTPs and magnesium chloride are present in Taq DNA Polymerase Master Mix. Each reaction requires 25 µL of the 2.0X reaction mix. Simply add primers, template and water to a total reaction volume of 50 µL.

Taq DNA Polymerase Master Mix offers several advantages. Set up time is significantly reduced. The chance of contaminating component stocks is eliminated. Reduction of reagent handling steps leads to better reproducibility. Standard tests can be set up with the confidence that results will be consistent every time.

Composition of 2.0X Taq Master Mix

- 150 mM Tris-HCl pH 8.5, 40 mM (NH₄)₂SO₄, 3.0 or 4.0 mM MgCl₂*, 0.2% Tween 20®
- 0.4 mM dNTPs
- 0.05 units/µL Ampliqon Taq polymerase
- Stabilizer

*Taq DNA Polymerase Master Mixes are offered in two final MgCl₂ concentrations: 1.5mM and 2.0mM.

Suggested Protocol using Taq Master Mix

This protocol serves as a guideline for primer extensions. Optimal reaction conditions such as incubation times, temperatures, and amount of template DNA may vary and must be individually determined.

Notes:

- Set up reaction mixtures in an area separate from that used for DNA preparation or product analysis.
- The table below shows the reaction set up for a final volume of 50 µL. If desired, the reaction size may be scaled down. Use 10 µL of the 2.0X master mix in a final volume of 20 µL.
- **Important:** Spin Taq Master Mix vials briefly before use.

1. Set up each reaction as follows:

| Component | Vol./reaction | Final Conc. |
|---------------------|---------------|-------------|
| Taq Master Mix | 25 µL | 1X |
| Primer A | Variable | 0.1–1.0 µM |
| Primer B | Variable | 0.1–1.0 µM |
| Distilled Water | Variable | ---- |
| Template DNA | Variable | Variable |
| TOTAL volume | 50 µL | ---- |

2. Mix gently by pipetting the solution up and down a few times.
3. Program the thermal cycler according to the manufacturer's instructions.

For maximum yield and specificity, temperatures and cycling times should be optimized for each new template target or primer pair.

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

Three-step PCR Programme

| Cycles | Duration of cycle | Temperature |
|--------|------------------------------|-------------|
| 25-35 | 20 - 30 seconds ^a | 95 °C |
| | 20 – 40 seconds ^b | 50-65 °C |
| | 30 seconds ^c | 72 °C |
| 1 | 5 minutes ^d | 72 °C |

^a Denaturation step: This step is the first regular cycling event and consists of heating the reaction to 95 °C for 20–30 seconds. It causes DNA melting of the DNA template by disrupting the hydrogen bonds between complementary bases, yielding single-stranded DNA molecules.

^b Annealing step: The reaction temperature is lowered to 50–65 °C for 20–40 seconds allowing annealing of the primers to the single-stranded DNA template. Typically, the annealing temperature is about 3-5 degrees Celsius below the T_m of the primers used.

^c Extension/elongation step: Taq polymerase has its optimum activity temperature at 72 °C. At this step the DNA polymerase synthesizes a new DNA strand complementary to the DNA template strand. The extension time depends on the length of the DNA fragment to be amplified. As a rule of thumb, at its optimum temperature the DNA polymerase will polymerize a thousand bases per minute.

^d Final elongation: This single step is occasionally performed at a temperature of 72 °C for 5 minutes after the last PCR cycle to ensure that any remaining single-stranded DNA is fully extended.

Related products

| Description | Cat. no. |
|--|---------------|
| Taq DNA Polymerase (1000 units) Glycerol free | 100103 |
| Taq DNA Polymerase (500 units) with 10X Ammonium Reaction Buffer with 10X Standard Reaction Buffer | 110303 |
| Taq DNA Polymerase (500 units) with 10X Combination Buffer | 110403 |
| Taq DNA Polymerase (500 units) with 10X Mg ⁺⁺ Free Ammonium Buffer | 110503 |
| Taq DNA Polymerase 2.0X Master Mix (100 r) with 2.0 mM MgCl ₂ | 150301 |
| Taq DNA Polymerase 2,0X MaMi RED (100 r) with 1.5 mM MgCl ₂ , | 180301 |
| Taq DNA Polymerase 2.0X MaMi RED (100 r) with 2.0 mM MgCl ₂ | 190301 |
| AccuPOL DNA Polymerase (500 units) | 210303 |
| TEMPase Hot Start DNA Polymerase (500 units) with 10X TEMPase Buffer I with 10X TEMPase Buffer II | 220303 |
| TEMPase Hot Start 2 x Master Mix with TEMPase Buffer I (100 r) | 230301 |
| TEMPase Hot Start 2 x Master Mix with TEMPase Buffer II (100 r) | 230701 |
| TEMPase Hot Start 2 x Master Mix Blue With TEMPase Buffer I (100 r) | 230301 |
| TEMPase Hot Start 2 x Master Mix Blue With TEMPase Buffer II (100 r) | 230701 |
| RealQ PCR 2 x Master Mix (200 reactions) for probe | 250407 |
| RealQ PCR 2 x Master Mix (200 reactions) With green dye | 250507 |
| dNTP Mix (2 x 500µl) (12.5 mM of each dA, dC, dG and dT) | 501004 |
| dNTP Mix, (2 x 500 µl) (10 mM of each dA, dC, dG and dT), | 502004 |

(Other product sizes available)

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NOTICE

In certain countries, patents cover the PCR process. This product is intended for researchers having a license to perform PCR or those not required to obtain a license.

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