Taq Master Mix

Description
Taq Master Mix (2x) is an optimized ready-to-use PCR mixture of *Taq* DNA Polymerase, PCR buffer, $MgCl_2$ and dNTPs. *Taq* Master Mix (2x) contains all components for PCR, except DNA template and primers.

Content

Ref No.	S101605	101605	101625	color
Taq Master Mix (2x) *	**Sample size**	**200 reactions**	**5x 200 rcts**	**white**
$MgCl_2$ 100 mM	**1 mL**	**1 mL**	**5x 1 mL**	**green**
PCR Water	**1.8 mL**	**2x 1.8 mL**	**10x 1.8 mL**	**transparent**
Datasheet	**1**	**1**	**1**	**--**

* Contains Taq DNA Polymerase (recombinant), PCR Buffer with 4 mM $MgCl_2$ and dNTPs 400 µM each.

Applications: Taq Master Mix (2x) is suitable for a wide range of PCR methods like qPCR, Real-Time PCR and classic PCR. It can be used for regular PCR with a fragment-size up to 5 kb.

Concentration: 2x

Sensitivity: high

Unit definition: One unit of activity is defined as the amount of enzyme required to incorporate 10 nmoles of dNTP into acid-insoluble DNA fraction in 30 minutes at 72 °C.

Additionally provided: 1 tube $MgCl_2$ (100 mM)

Recommended $MgCl_2$ concentration: 1.5 mM – 6 mM

Quality control

- 98% protein homogeneity in 10% SDS-PAGE
- No detectable exo-/endonuclease activities
- PCR amplification tests with different templates

Storage condition: -20 °C

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Pipetting scheme and thermocycler protocol:

Components	Volume / 25 µL PCR-Reaction	Final concentration
2X PCR Master Mix	12.5 µL	1X
Forward Primer	variable	0.1 – 1 µM
Reverse Primer	variable	0.1 – 1 µM
Template DNA	variable	100 pg – 1 µg
Sterile dest. water	up to 25 µL	-

It's strongly recommended to settle-up all reactions on ice to avoid formation of unspecific products or primer-dimers formation.

If $MgCl_2$ is not added to the reaction mixture, final concentration of $MgCl_2$ in the reaction mixture will be 2 mM.

Thermocycler protocol

step	time	temperature
initial denaturation	2 minutes	94 °C
Number of cycles: 25 - 35		
denaturation	10 - 30 seconds	94 °C
annealing	20 - 30 seconds	55 - 68 °C *
extension	1 minute	72 °C

* Usually the optimal annealing temperature is 5 °C below the melting temperature of the primers

Notes:
Program the cycler according to the manufacturer's instructions.
Each program should start with an initial denaturation step at 94 °C for 2 to max. 5 min.
Recommended elongation time is 1 min per 1 kb of target.
For maximum yield and specificity, temperatures (annealing) and cycling times should be optimized for each new template target or primer pair.