

Data sheet

This data sheet provided for information only

5X MasTaq^{GR}-2025

RESEARCH USE ONLY

Ready-to-load MasterMix for DNA amplification

Cat.No.	Pack	Conc.
MGR5-100	100 rxn	5 X
MGR5-500	500 rxn	5 X

Stability:

5X MasTaq^{GR} stable for 24 months at -20°C, **or** for 6 months at +4°C storage without freezing.

CONTENT:

- 1X: SmarTaq** Polymerase
- 0.2mM** each of dNTP's
- 2.0 mM** MgCl₂
- Reaction Buffer Components
- Two inherent dyes (orange and blue)**
- Stabilizer/enhancer**

DESCRIPTION

5X MasTaq^{GR} is a ready-to-use premix of all components for amplification of target DNA, contains **stabilizer/ enhancer**, which improves thermostabilization of enzyme during PCR amplification and storage and two inherent dyes for post-PCR electrophoretic amplicon detection.

5X MasTaq^{GR} contains antibodies- blocked Taq polymerase (**SmarTaq**), which is not active at ambient temperature (during PCR set-up) and activated automatically during the first PCR cycle at the temperature >70°C.

It's no need for prolonge heating for activation of enzyme for PCR.

5X MasTaq^{GR} is optimized for PCR with complex, **low-copy number DNA templates, multiplex PCR, "real-time" PCR** allows to improve specificity of your PCR by titration of MgCl₂ (not included) concentration.

You can use an appropriate volume of **5X MasTaq^{GR}** for amplification reaction, depending on total final reaction volume.

Just place it into the tube/plate adds primers and template of choice mix all components and run PCR.

After PCR reaction running 5-10µl of reaction mixture could be load directly, without any other manipulations into the gel and run electrophoresis.

5X MasTaq^{GR} Mix contains less than 1% of GLYCEROL in 10ul of Mix.

Recommended PCR assay

50µl PCR assay		Final Conc.
10µl	5X MasTaq^{GR}-2025	1X
0.2-1µM	each Primer	
Variable*	DNA Template	
To 50µl	PCR Grade Water	

*- depending on DNA template initial concentration

APPLICATIONS:

- Routine PCR
- Primer extension
- Real-Time PCR
- Low-copy PCR (SmarTaq Polymerase)
- Multiplex PCR

STORAGE CONDITIONS :

Store **5X MasTaq^{GR}** at -20°C (for long term storage).

SHIPPING CONDITIONS:

Should be shipped at ambient temperature
For land distance shipments preferably in **Blue Ice**

General Protocol for amplification with 5X MasTaq^{GR}-2025

Add and mix the following components:

Component	50 μ L reaction	25 μ L reaction	Final concentration
PCR grade Water	Up to 50 μ L	Up to 25 μ L	
5X MasTaq^{GR}-2025	10 μ L	5 μ L	1X
Primers			0.2-0.5 μ M each
Template DNA	optionally	optionally	

In some cases we recommends to ortimize Mg concentration in the range 2.0-3.0mM
We recommend to use 25 μ l reaction for the PCR with **5X MasTaq^{GR}**

Cycling Protocol:

Cycle step	3-step amplification		Cycles
	T $^{\circ}$ C	Time	
Initial	95 $^{\circ}$ C	2 min	1
Denaturation			
Denaturation	95 $^{\circ}$ C	10-30 S	
Annealing	55-68*	10-30 S	25-35
Extension	72 $^{\circ}$ C	30-60 S/Kb**	
Final extension	72 $^{\circ}$ C	5-10 min	1
	4 $^{\circ}$ C	hold	

*Optimal T_m for the primer pair recommended as T_m of the lower primer, for the standard oligos <20nt.

**For non-complex DNA templates (plasmid DNA, phage DNA, BAC clone) extention time could be reduced up to 15-30 sec/Kb.

For compex DNA templates (human DNA) strongly recommended to apply Extention time as 60 sec/Kb