

Data sheet

This data sheet provided for information only

5X MasTaq^{PLUS}-2025

RESEARCH USE ONLY

Ready-to-use MasterMix for DNA amplification

Cat.No.	Pack	Conc.
MPL5-100	100 rxn	5 X
MPL5-500	500 rxn	5 X

Stability:

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

CONTENT:

- 1X: SmarTaq** Polymerase
- 0.2mM** of dATP,dCTP,dGTP+
- 0.6mM** dUTP
- 2.0 mM** MgCl₂
- Reaction Buffer Components
- Stabilizer/enhancer**

DESCRIPTION

5X MasTaq^{PLUS} 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.

5X MasTaq^{PLUS} 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.

5X MasTaq^{PLUS} contains **dUTP** instead of dTTP, what makes this mix very useful for "anti-contamination" PCR, allowing to prevent false-positive amplification results, because of possible contaminations by PCR amplicons.

To prevent contaminations **5X MasTaq^{PLUS}** should be used in combination with pre-treatment of PCR reaction by UDG (Uracil DNA glycosilase) to destruct of UTP containing amplicons to avoid possible contaminations in the next PCR reaction.

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

5X MasTaq^{PLUS} 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^{PLUS}** 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.

Recommended PCR assay

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

*- depending on DNA template initial concentration

APPLICATIONS:

- "anti-contamination" PCR
- Routine PCR
- Real-Time PCR
- Low-copy PCR (SmarTaq Polymerase)
- Multiplex PCR

SHIPPING CONDITIONS:

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

STORAGE CONDITIONS :

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

General Protocol for amplification with 5X MasTaq^{PLUS}-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^{PLUS}-2025	10 μ L	5 μ L	1X
Primers			0.2-0.5 μ M each
UDG, 1U/ μ l	1 μ l	0,5 μ l	
Template DNA	optionally	optionally	10-50ng

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

Cycle step	Cycling Protocol: 3-step amplification		Cycles
	T $^{\circ}$ C	Time	
UDG treatment	47-50 $^{\circ}$ C	2 min	1
Initial Denaturation	95 $^{\circ}$ C	2 min	1
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) extension time could be reduced up to 15-30 sec/Kb.

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