

Data sheet

This data sheet provided for information only

2X MasTaq^{PLUS}-1525**RESEARCH USE ONLY****Ready-to-use amplification MasterMix**

Cat.No.	Pack	Conc.
Dia-07220	100 rnx	2 X
Dia-07221	500 rnx	2 X

Stability:

2X MasTaq^{PLUS} stable for 24 months at -20°C, or for 6 months at +4°C storage without freezing.

CONTENT:

1X: UniHot Polymerase
UDG (Uracil DNA Glycosilase)
0.2mM dATP,dCTP,dGTP
0.1mM dTTP,dUTP
1,5 mM MgCL₂
 Reaction Buffer components
Stabilizer/enhancer

DESCRIPTION

2X 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.

2X MasTaq^{PLUS} contains **dUTP, UDG** and **special blend of antibodies- blocked polymerases**, which are not active at ambient temperature (during PCR set-up) and activated automatically during the first PCR cycle at the temperature >70°C, preventing mis-priming and other artifacts formation. In addition, **2X MasTaq^{PLUS}** prevents formation of false-positive amplicons, due to pre-amplification treatment of reaction mixture by UDG, what allows distracting possible unwanted contaminations.

It is no need for prolonged heating for activation of enzyme for PCR.

2X MasTaq^{PLUS} contains optimized buffer reagents, which greatly improve specificity of PCR with **complex, low-copy number DNA templates, multiplex PCR, "real-time" PCR, allowing** using very small initial quantities of DNA template.

One' can use an appropriate volume of **2X 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.

After PCR reaction running mix 5-10µl of reaction mixture with appropriate volume of "Loading Buffer" (for non-"real-time" mode PCR), apply to the gel and run electrophoresis.

Recommended PCR assay

50µl PCR assay		Final Conc.
25µl	2X MasTaq^{PLUS}-1525	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 (all types)
- Low-copy PCR (UniHot Polymerase)
- Multiplex PCR

SHIPPING CONDITIONS:

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

STORAGE CONDITIONS :

Store **2X MasTaq^{PLUS}** at -20°C (for long-term storage).

General Protocol for amplification with 2X MasTaq^{PLUS}-1525

Add and mix the following components:

Component	50 μ L reactions	25 μ L reactions	Final concentration
PCR grade Water	Up to 50 μ L	Up to 25 μ L	
2X MasTaq^{PLUS}-1525	25 μ L	12.5 μ L	1X
Primers			0.3-0.5 μ M each
Template DNA	optionally	optionally	1-50ng

In some cases, we recommend to optimize Mg concentration in the range 2.0-3.0mM
We recommend using 25 μ L reaction for the PCR with **2X MasTaq^{PLUS}**

Cycling Protocol:

Cycle step	3-step amplification		Cycles
	T $^{\circ}$ C	Time	
Pre-amplification treatment	47$^{\circ}$C	2 min	1
Initial Denaturation	95$^{\circ}$C	2-3 min	1
Denaturation	95$^{\circ}$C	10 S	25-35
Annealing	55-66*	5-10 S	
Extension	72$^{\circ}$C	15 Sec/Kb**	
Final extension	72$^{\circ}$C 4$^{\circ}$C	1-2 min hold	1

Pre-amplification treatment needed for destruction of possible contamination (Uracil – containing amplicons) from the previous amplification by Uracil DNA-Glycosylase.

NOTE: If you used in the other amplification dNTP's not-containing dUTP (only regular dNTP's) UDG treatment is senselessly.

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

To optimize amplification we recommend using gradient PCR amplification, to reach final amplification conditions in the short time.

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

For complex DNA, templates (human DNA) strongly recommended to apply Extension time as 30 sec/Kb for the targets more than 1,5Kb