vivantis

DNA AMPLIFICATION PRODUCT

Product Datasheet

At Max *Taq* DNA Polymerase (*Hot Start*)

Product No : PL4202
Quantity : 500u

Lot :
Expiry Date :
Concentration : 2.5u/µl
Supplied with : 2ml of 10X ViBuffer A
1ml of 10X ViBuffer S
1ml of 50mM $MgCl_2$

Store at - 20°C

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Description:

AtMax *Taq* DNA Polymerase is a mixture of thermostable *Taq* DNA Polymerase, proofreading *Pfu* DNA Polymerase, anti-*Taq* DNA Polymerase antibodies, reversible inhibitors and enhancers for automatic "Hot Start" amplification. It exhibits the 3' to 5' proofreading activity, resulting in considerably higher amplification fidelity than possible with unmodified *Taq* DNA Polymerase. The enzyme is visualization of the addition of polymerase to the reaction.**Recommended for use in amplification to obtain DNA products up to 20kb with stringent amplification specificity, sensitivity, fidelity and yield**.

Features:

- Ultra pure recombinant protein.
- Excellent for multiplex amplification as it exhibits wider tolerance for Mg^{2+} and salt concentrations, pH, template contaminations and has increased half-life in comparison to unmodified *Taq* DNA polymerase.
- Improves amplification results with critical templates, such as those containing GC-rich regions, palindromes or multiple repeats.
- Increased amplification product yields and purity.

Unit Definition :

1u is defined as amount of enzyme that required to catalyze the incorporation of 10nmol of dNTP into acid-insoluble material in 30 minutes at 74°C.

Reaction Buffer:

10X ViBuffer A (*without* $MgCl_2$):
500mM KCl, 100mM Tris-HCl (pH9.1 at 20°C) and 0.1% Triton™X-100. The buffer is optimized for use with 0.1-0.2mM of each dNTP.

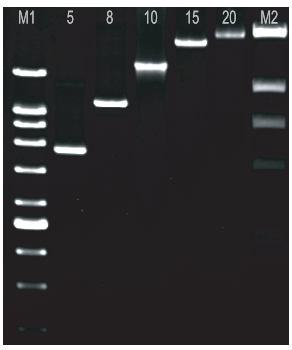
10X ViBuffer S:
160mM $(NH_4)_2SO_4$, 500mM Tris-HCl (pH 9.2 at 22°C), 17.5mM $MgCl_2$ and 0.1% Triton™X-100. The buffer is optimized for use with 0.35mM of each dNTP.

Storage Buffer:

20mM Tris-HCl (pH 8.0 at 22°C), 100mM KCl, 0.5% Tween™ 20, 0.5% Nonidet P-40, 0.1mM EDTA, 1mM DTT and 50% glycerol.

Quality Control:

All preparation are assayed for contaminating endonuclease, 3'-exonuclease, and non-specific DNase activities. Functionally tested in DNA amplification.



Amplification Using Vivantis At Max *Taq* DNA Polymerase
Lane M1 : VC 1kb DNA Ladder
Lane 5kb and 8kb : 5kb and 8kb amplification products generated using 0.25mM dNTPs, 2u Vivantis AtMax *Taq* DNA Polymerase and 3% formamide.
Lane 10kb-20kb : 10kb, 15kb, and 20kb PCR products generated using 0.36mM dNTPs, 2u Vivantis AtMax *Taq* DNA Polymerase and 3% formamide.
Lane M2 : VC Lambda / *Hind* III Marker.

0.5 TAE agarose gel.

SUGGESTED INITIAL PCR CONDITIONS FOR VARIOUS PCR PRODUCT SIZES WITH VIVANTIS DNA POLYMERASES (#PL1201 - 06 / #PL2201 - 06 / #PL3201 - 06 / #PL4201 - 06)

REACTION MIX (FINAL CONCENTRATION) :

Primers : 0.2 - 1µM Template: Plasmid (0.02-0.2ng) Lambda (0.1- 150ng) Genomic (0.05-5µg)	Product Size	100bp - 5kb	5kb - 8kb	8kb - 20kb
	dNTP Mix	100µM	200µM	300µM
	ViBuffer (1X)	A	A	S
	Ultrapure DMSO or formamide	-	3%	3%
	DNA Polymerase	Refer to below Table (A)		

Product Size	Denaturation	Denaturation	Annealing*	Extension / 1kb	Cycles	Final Extension
100bp - 5kb	94°C, 2 min	94°C, 30 s	50 - 68°C, 30 s	72°C, 30 s	25 - 35	72°C, 7 min
5kb - 8kb	94°C, 2 min	94°C, 12 s	50 - 68°C, 30 s	72°C, 45 s	25 - 35	72°C, 7 min
8kb - 20kb	94°C, 2 min	94°C, 12 s	50 - 68°C, 30 s	68°C, 1 min	25 - 35	68°C, 7 min

*Primer dependent

TABLE (A) : RECOMMENDED UNITS FOR SPECIFIC VIVANTIS DNA POLYMERASES PER 50µL REACTION VOLUME :

Product Size	*Taq* (#PL1201 - 06)	Max *Taq* (#PL2201 - 06)	At *Taq* (#PL3201 - 06)	AtMax *Taq* (#PL4201 - 06)
0.1 - 5.0kb	2.0	2.0	2.0	2.0
5.0 - 8.0kb	2.5	2.0	2.5	2.0
8.0 - 20.0kb	2.5	2.0	2.5	2.0
>20.0kb	-	2.0	-	2.0

*This protocol is subjected to changes depending on the template DNA

Product Use Limitation
This product is for research purpose an *in vitro* use only

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