vivantis

DNA AMPLIFICATION PRODUCT

Product Datasheet

Chromo Max *Taq* DNA Polymerase (recombinant)

Product No	**: PL2205**
Quantity	**: 200u**

Lot :
Expiry Date :
Concentration : 1u/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:

Chromo Max *Taq* DNA Polymerase is a modified and optimized thermostable enzyme blend containing *Taq* DNA Polymerase, *Pfu* DNA Polymerase and enhancing factors. It exhibits the 3' to 5' proofreading activity, resulting in considerably higher amplification fidelity than possible with unmodified *Taq* DNA Polymerase. **Recommended for use in amplification to obtain DNA products up to 20kb**. The enzyme is supplemented with indicators for ease of visualization of the addition of polymerase to the reaction.

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.

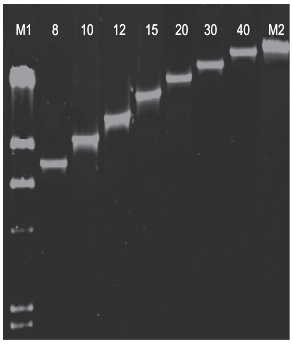
10X ViBuffer S:
160mM $(NH_4)_2SO_4$, 500mM Tris-HCl (pH 9.2 at 22°C), 17.5mM $MgCl_2$ and 0.1% Triton™X-100. The buffer is optimized for use with 0.35mM of each dNTP.

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 Max *Taq* DNA Polymerase

Lane M1 : VC Lambda/ ***Hin*d III** Marker
Lane 8kb : 8kb amplification products generated using 0.25mM dNTPs, 2u Vivantis Max *Taq* DNA Polymerase and 3% formamide.
Lane 10kb-20kb : 10kb, 12kb, 15kb, and 20kb amplification products generated using 0.36mM dNTPs, 2u Vivantis Max *Taq* DNA Polymerase and 3% formamide.
Lane 30kb and 40kb : 30kb and 40kb amplification products generated using 0.36mM dNTPs, 2u Vivantis Max *Taq* DNA Polymerase and 3% formamide.
Lane M2 : Lambda DNA (Indicateds 48kb)

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

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

*Primer dependent

REACTION MIX (FINAL CONCENTRATION):

Product Size	100bp – 5kb	5kb – 8kb	8kb – 20kb
dNTP Mix	100 µM	200 µM	360 µM
ViBuffer (1 X)	A	A	S
Ultrapure DMSO or formamide	-	3%	3%
DNA Polymerase	Refer to the below Table (A)		

Primers: 0.2 -1µM
Template: Plasmid (0.02 - 2 ng)
Lambda (0.1 - 150 ng)
Genomic (0.05 - 5 µg)

TABLE (A): RECOMMENDED UNITS FOR SPECIFIC VIVANTIS DNA POLYMERASES PER 50 µL 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 purposes an *in vitro* use only.

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