vivantis

DNA AMPLIFICATION PRODUCT

Product Datasheet

Chromo At *Taq* DNA Polymerase (recombinant)

Product No : PL3205
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 At *Taq* DNA Polymerase is a complex of specific anti-*Taq* monoclonal antibody with top quality thermostable *Taq* DNA Polymerase for automatic "hot start" amplification, resulting in greatly enhanced amplification specificity, sensitivity and yield. At *Taq* DNA Polymerase catalyzes the polymerization of nucleotides into duplex DNA in the 5' to 3' direction in the presence of Mg^{2+} and has the 5' to 3' exonuclease activity. The enzyme is supplemented with indicator for ease for visualization of the addition of polymerase to the reaction.

Features:

- Ultra pure recombinant protein which is reversibly complex with anti-*Taq* monoclonal antibody that blocks replication activity of the enzyme at moderate temperatures.
- Carefully selected anti-*Taq* antibodies have high thermal stability, providing protection againts non-specific primer extension from room temperature to 80°C.
- Formation of complexes between *Taq* DNA Polymerase and an anti-*Taq* antibody forms a basis for automatic "hot start" amplification, which allows for the assembly of amplification reactions at room temperature.
- High stability of the complexes allows for the enormous increase in amplification specificity, sensitivity and yield in comparison to the conventional amplification assembly method.
- Increased specificity as a result of reduced amplification artefacts such as primer-dimer formation and mispriming in mutlplex amplification.

Unit Definition :

1u is defined as amount of enzyme that required to catalyze the incorporation of 10nmoles 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 and color dye.

Quality Control:

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

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):

Primers: 0.2 -1 µM	Product Size	100bp – 5kb	5kb – 8kb	8kb – 20kb
Template: Plasmid (0.02 - 2 ng) Lambda (0.1 - 150 ng) Genomic (0.05 - 5 µg)	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)		

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

Product Size	*Taq* (#PL1201 - 06)	Max *Taq* (#PL2201 - 06)	AtTaq(#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.