



www.AntibodyResearch.com

Antibody Research Corporation

5988 Mid Rivers Mall Drive

St Charles, MO 63304

Phone: (636) 734-0192

Fax: (636) 441-6881

info@AntibodyResearch.com

Product Data Sheet

Product:	Anti-Taq DNA Polymerase Monoclonal Antibody
Catalogue No.:	4201
Gene Name:	Taq DNA Polymerase
Description:	During PCR amplification mis-priming of Taq Polymerase can occur at low or room temperatures, much before the actual PCR cycle starts, leading to spurious results. We have developed a Monoclonal antibody that neutralized Taq Polymerase rendering it inactive at room or low temperatures. As the temperature is raised during initial PCR denaturation step, the antibody is denatured releasing the active thermostable Taq Polymerase (Hot Start). Antibody based enzyme inactivation has an advantage over other chemical inactivation in that no modification is required.
Immunogen:	Taq DNA Polymerase
Antibody Host:	Mouse
Antibody Purity:	Affinity Purified
Clonality:	Monoclonal, IgG2a, Clone TA6.3
Format:	1mg/mL in Storage Buffer. (10 mM Tris-HCl, pH 7.0, 50 mM KCl, 0.1 mM EDTA, & 50% Glycerol).
Uses:	This Mab can be used in combination with any Taq Polymerases available commercially.
Storage:	Store at -20°C. Avoid multiple freeze-thaw cycles. Diluted antibody can be stored at 4°C for no more than 2 months.
Stability:	12 months at -20°C, 2 months at 4°C.
Shipping:	Products may be shipped on ice pack.

For Research Use Only. Not for Diagnostic or Therapeutic Work.

ARC will not be held responsible for patent infringement or other violation that may occur with the use of our product.



QC Analysis Data

Figure-1 Antibody Specificity by Western Blot

Recombinant Taq Polymerase was run on 12% SDS-PAGE and transferred to the PVDF membrane. The membrane was probed with TA 6.3 antibody. After repeated washing, Ag-Ab complex was incubated with secondary Ab-HRP conjugate. The signal was observed by enzyme-substrate colorimetric reaction.

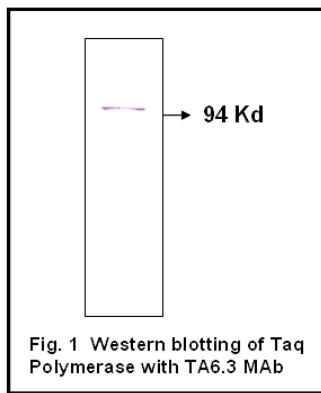
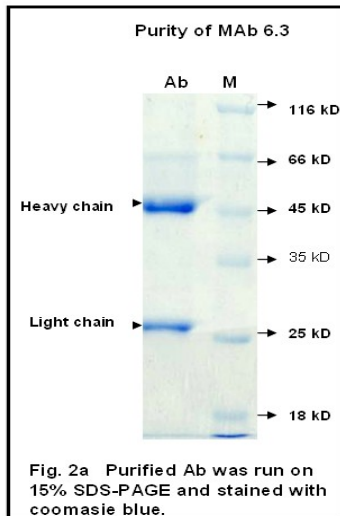


Figure-2a Antibody Purity

The purity of clone TA6.3 was found to be 95% on SDS-PAGE (Fig. 2a).





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Figure-2b Antibody Purity

Nuclease activity was tested by incubating 1 μ g of plasmid DNA with 1 μ g of TA6.3 Ab for short (1h) and long (24h) time periods at 37°C and by subsequent agarose gel electrophoresis. There was no detectable nuclease activity observed (Fig. 2b).

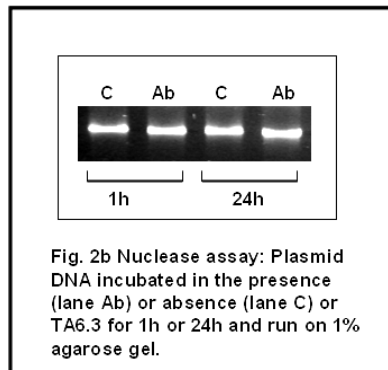
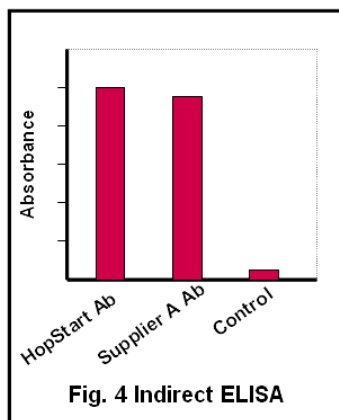


Figure-4 Antibody Binding Affinities

The enzyme inactivation of antibody depends on binding of antibody to enzyme. Binding of TA6.3 MAb to Taq Polymerase was compared to another commercially available antibody by ELISA. We show that our Mab is better than other commercially available antibody.





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Figure-5 Neutralization of Taq Polymerase

Enzyme inactivation was evaluated by primer extension method, wherein Ab-enzyme preformed complex was added to the primer extension mix. The extended product was run on 10% PAGE and signal visualized by autoradiography. Purified TA6.3 Mab was able to neutralize polymerase function.

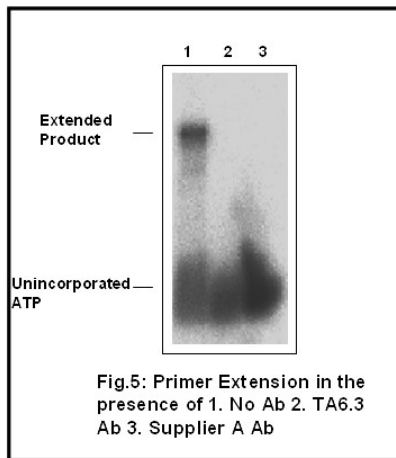
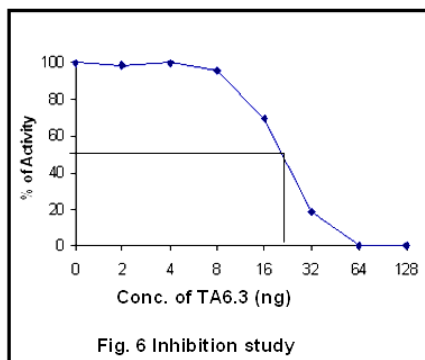


Figure-6 Neutralization of Taq Polymerase

Primer extension was carried out in the presence of different concentrations of TA6.3 MAb bound to fixed (1U) amount of Taq Polymerase. 100% enzyme inhibition was seen with 64ng of the TA6.3 antibody.





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Figure-7 Mab TA6.3 prevented mispriming during PCR

250bp HOX gene was PCR amplified with (lane3) and without Mab (lane2) in PCR reaction. 100bp ladder was used in lane 1 as marker.

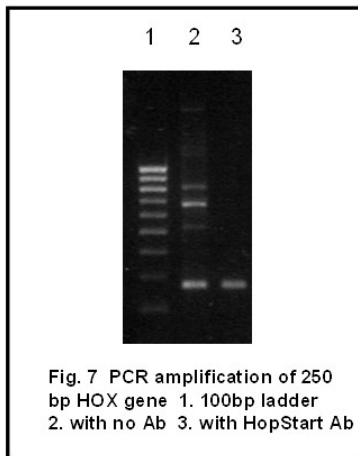
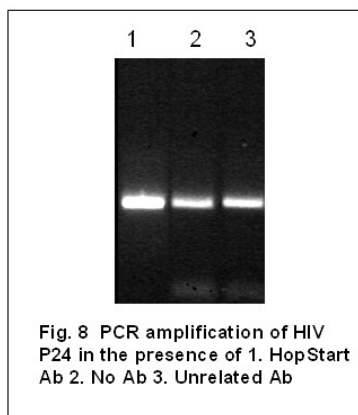
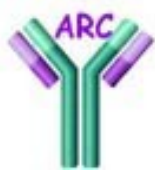


Figure-8 Mab TA6.3 increased product amplification in PCR

MAB TA6.3 increased product amplification of HIV P24 gene with PCR.





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Referneces:

1. Chou, Q., Russell, M., Birch, D.E., Raymond, J., and Bloch, W. (1992) Prevention of pre-PCR mis-priming and primer dimerization improves low-copy-number amplifications. *Nucleic Acids Res.* 20, 1717-23.
2. D'Aquila, R.T., et al. (1991) Maximizing sensitivity and specificity of PCR by preamplification heating, *Nucleic Acids Res.*, 19, 3749.
3. Kellog, D.E., et al. (1994) TaqStart antibody: "Hot start" PCR facilitated by a neutralizing monoclonal antibody directed against *Taq* DNA polymerase, *BioTechniques*, 16, 1134-1137.
4. Kong, D., Shen, H., Huang, Y., and Mi, H. (2004) PCR hot-start using duplex primers. *Biotechnol. Lett.* 26, 277-280.
5. Zhong, X.Y., Lin, Y.S., Kaul, S. and Bastert, G. (2000) Sensitive and specific detection of carcinoembryonic antigen cDNA using the hot start polymerase chain reaction technique. *Clin. Lab.* 46, 7-11.