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## Human TNF- $\alpha$ Neutralizing (D1B4) Rabbit mAb

For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
N	H	Endogenous	Rabbit IgG	#P01375	7124
<b>Product Usage Information</b>	<p>CST recommends incubation of the neutralizing antibody with intended target for 2 hours at 37°C before addition to the experiment at an optimal concentration determined by the user.</p> <p><b>Reconstitution:</b> Add 0.2 ml sterile dH<sub>2</sub>O to a final concentration of 0.5 mg/ml. Solubilize for 30 minutes at room temperature with occasional gentle vortexing.</p>				
<b>Formulation</b>	Lyophilized from a 0.2 $\mu$ m filtered solution in HEPES with trehalose.				
<b>Storage</b>	Store lyophilized material at -20°C. After reconstitution, recommended storage at 4°C for 1 month or -20°C for 6 months. Avoid repeated freeze/thawing.				
<b>Specificity/Sensitivity</b>	Human TNF- $\alpha$ Neutralizing (D1B4) Rabbit mAb binds to human TNF- $\alpha$ and neutralizes its cytotoxic effects. This antibody does not cross-react with mouse TNF- $\alpha$ .				
<b>Source / Purification Description</b>	<p>Monoclonal antibody is produced by immunizing animals with a recombinant human TNF-<math>\alpha</math> protein.</p> <p>Neutralizing antibodies can be used to inhibit normal biological function through their binding to biological molecules. These reagents can be used to determine the effects that a particular molecule has in biological systems. TNF-<math>\alpha</math> has known functions of cell cytotoxicity, cell activation, and apoptosis in different cell types. Human TNF-<math>\alpha</math> Neutralizing (D1B4) Rabbit mAb has been shown to neutralize the cytotoxic effects of TNF-<math>\alpha</math> in L-929 mouse fibroblast cells. Utilizing 1 ng/ml of hTNF-<math>\alpha</math> #8902 and 1 <math>\mu</math>g/ml of actinomycin D, Human TNF-<math>\alpha</math> Neutralizing (D1B4) Rabbit mAb rescued L-929 cells with an ND<sub>50</sub> in the range of 4-12 ng/ml.</p>				
<b>Background</b>	<p>TNF-<math>\alpha</math>, the prototypical member of the TNF protein superfamily, is a homotrimeric type-II membrane protein (1,2). Membrane-bound TNF-<math>\alpha</math> is cleaved by the metalloprotease TACE/ADAM17 to generate a soluble homotrimer (2). Both membrane and soluble forms of TNF-<math>\alpha</math> are biologically active. TNF-<math>\alpha</math> is produced by a variety of immune cells including T cells, B cells, NK cells, and macrophages (1). Cellular response to TNF-<math>\alpha</math> is mediated through interaction with receptors TNF-R1 and TNF-R2 and results in activation of pathways that favor both cell survival and apoptosis depending on the cell type and biological context. Activation of kinase pathways (including JNK, Erk1/2, p38 MAPK, and NF-<math>\kappa</math>B) promotes the survival of cells, while TNF-<math>\alpha</math>-mediated activation of caspase-8 leads to programmed cell death (1,2). TNF-<math>\alpha</math> plays a key regulatory role in inflammation and host defense against bacterial infection, notably <i>Mycobacterium tuberculosis</i> (3).</p>				
<b>Background References</b>	<ol style="list-style-type: none"> <li>Aggarwal, B.B. (2003) <i>Nat Rev Immunol</i> 3, 745-56.</li> <li>Hehlgans, T. and Pfeffer, K. (2005) <i>Immunology</i> 115, 1-20.</li> <li>Lin, P.L. et al. (2007) <i>J Investig Dermatol Symp Proc</i> 12, 22-5.</li> </ol>				

**Species Reactivity** Species reactivity is determined by testing in at least one approved application (e.g., western blot).

**Applications Key** N: Neutralizing

**Cross-Reactivity Key** H: Human

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