Mouse CTLA-4 Antibody

Monoclonal Rat IgG_{2A} Clone # 63828

Catalog Number: MAB434

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse CTLA-4 in direct ELISAs and Western blots. In direct ELISAs, this antibody does not cross-react with recombinant mouse (rm) CD28, recombinant human CTLA-4, rmICOS, or rmPD-1.
Source	Monoclonal Rat IgG_{2A} Clone # 63828
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse CTLA-4 Ala36-Phe161 Accession # XP_001479180
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

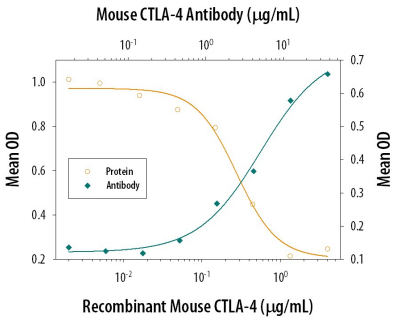
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	1 µg/mL	Recombinant Mouse CTLA-4 Fc Chimera (Catalog # 434-CT) under non-reducing conditions only
Flow Cytometry	2.5 µg/10^6 cells	Mouse splenocytes treated with ConA
Neutralization	Measured by its ability to neutralize CTLA-4 inhibition of B7-1/CD80-induced IL-2 secretion in the Jurkat human acute T cell leukemia cell line. Linsley, P. *et al.* (1990) Proc. Natl. Acad. Sci. USA **87**:5031. The Neutralization Dose (ND_{50}) is typically 2.5-10 µg/mL in the presence of 1 µg/mL Recombinant Mouse CTLA-4 Fc Chimera, 3 µg/mL Recombinant Human B7-1/CD80 Fc Chimera, and 10 µg/mL PHA.	

DATA

Neutralization



CTLA-4 Inhibition of B7-1/CD80-induced IL-2 Secretion and Neutralization by Mouse CTLA-4 Antibody. Recombinant Mouse CTLA-4 Fc Chimera (Catalog # 434-CT) inhibits Recombinant Human B7-1/CD80 Fc Chimera (Catalog # 140-B1) induced IL-2 secretion in the Jurkat human acute T cell leukemia cell line in a dose-dependent manner (orange line), as measured by the Human IL-2 Quantikine ELISA Kit (Catalog # D2050). Inhibition of Recombinant Human B7-1/CD80 Fc Chimera (3 µg/mL) activity elicited by Recombinant Mouse CTLA-4 Fc Chimera (1 µg/mL) is neutralized (green line) by increasing concentrations of Mouse CTLA-4 Monoclonal Antibody (Catalog # MAB434). The ND_{50} is typically 2.5-10 µg/mL in the presence of PHA (10 µg/mL).

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

CTLA-4 and CD28, together with their ligands B7-1 and B7-2, constitute one of the dominant costimulatory pathways that regulate T and B cell responses. CTLA-4 and CD28 are structurally homologous molecules that are members of the immunoglobulin (Ig) gene superfamily. Both CTLA-4 and CD28 are composed of a single Ig V-like extracellular domain, a transmembrane domain and an intracellular domain. CTLA-4 and CD28 are both expressed on the cell surface as disulfide-linked homodimers or as monomers. The genes encoding these two molecules are closely linked on human chromosome 2. CTLA-4 was originally identified as a gene that was specifically expressed by cytotoxic T lymphocytes. However, CTLA-4 transcripts have since been found in both Th1 and Th2, and $CD4^+$ and $CD8^+$ T cell clones. Whereas, CD28 expression is constitutive on the surfaces of 95% of $CD4^+$ T cells and 50% of $CD8^+$ T cells and is down regulated upon T cell activation, CTLA-4 expression is upregulated rapidly following T cell activation and peaks approximately 24 hours following activation. Although both CTLA-4 and CD28 can bind to the same ligands, CTLA-4 binds to B7-1 and B7-2 with 20-100-fold higher affinity than CD28. The physiological role of CTLA-4 in T cell costimulation is currently being studied. Recombinant human or mouse CTLA-4/Fc chimera preparations produced at R&D Systems have been shown to bind both B7-1 and B7-2 with high affinity and to inhibit CD28 signalling competitively.

References:

1. Lenschow, D.J. *et al*. (1996) Annu. Rev. Immunol. **14**:233.
2. Hathcock, K.S. and R.J. Hodes (1996) Advances in Immunol. **62**:131.
3. Ward, S.G. (1996) Biochem. J. **318**:361.