Recombinant Mouse CTLA-4 Fc Chimera

Catalog Number: 434-CT/CF

DESCRIPTION

Source

Mouse myeloma cell line, NS0-derived mouse CTLA-4 protein

Mouse CTLA-4 Ala37-Phe162 Accession #Q6GTR6	IEGRMD	Human IgG_1 (Pro100-Lys330)	6-His tag

N-terminus C-terminus

N-terminal Sequence Analysis	Ala37
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	41 kDa (monomer)

SPECIFICATIONS

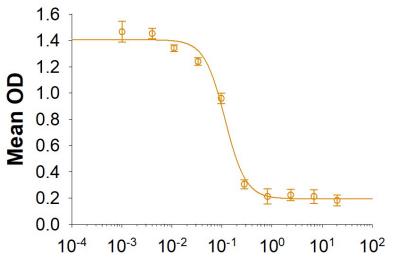
SDS-PAGE	55 kDa, reducing conditions
Activity	Measured by its ability to inhibit IL-2 secretion by stimulated Jurkat human acute T cell leukemia cells. Linsley, P.S. *et al.* (1991) J. Exp. Med. **174**:561. The ED_{50} for this effect is 0.1-0.4 µg/mL when stimulated with 1 µg/mL Recombinant Human B7-1/CD80 Fc Chimera (Catalog # 140-B1) in the presence of PHA.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>97%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 200 µg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
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. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

DATA

Bioactivity



Recombinant Mouse CTLA-4 Fc Chimera (Catalog # 434-CT) inhibits IL-2 secretion by stimulated Jurkat human acute T cell leukemia cells. The ED_{50} for this effect is 0.03-0.15 µg/mL when stimulated with 1 µg/mL Recombinant Human B7-1/CD80 Fc Chimera (Catalog # 140-B1).

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BACKGROUND

CTLA-4 (cytotoxic T-lymphocyte-4, designated CD152), is a type I transmembrane T cell inhibitory molecule that is a member of the Ig superfamily (1, 2). Human or mouse CTLA-4 cDNA encodes 223 amino acids (aa) including a 35 aa signal sequence, a 126 aa extracellular domain (ECD) with one Ig-like V-type domain, a 21 aa transmembrane (TM) sequence, and a 41 aa cytoplasmic sequence. It is found as a covalent homodimer of 41 - 43 kDa (2) Within the ECD, mouse CTLA-4 shares 94% and 68 - 71% aa sequence identity with rat and human/porcine/bovine/rabbit/feline/canine CTLA-4, respectively. A 174 aa form that lacks TM and cytoplasmic sequences (sCTLA-4) is possibly secreted (3 - 5). Isoforms of 56 - 79 aa that mainly contain parts of the cytoplasmic domain are reported. In mouse, an isoform lacking the Ig-like domain has ligand-independent inhibitory activity and is termed liCTLA-4 (6). CD28, which is structurally related to CTLA-4, is constitutively expressed on naïve T cells and promotes T cell activation when engaged by B7-2 on antigen-presenting cells (APC) within the immunological synapse (IS) (1, 7, 8). In contrast, CTLA-4 is recruited from intracellular vesicles to the IS beginning 1-2 days after T cell activation (2, 7, 8). It forms a linear lattice with B7-1 on APC, inducing negative regulatory signals and ending T cell activation (9). Abatacept, a therapeutic human CTLA-4-Ig fusion protein (trade name Orencia), competes with CD28 for B7-1 and B7-2 binding and has been used to antagonize T cell activation in autoimmune conditions and to enhance transplant survival (10). Mice deleted for CTLA-4 show no abnormalities until after birth, but then develop lethal autoimmune reactions due to continued T cell activation and poor control by regulatory T cells, which constitutively express CTLA-4 in wild-type mice and humans (11 - 13).

References:

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