

**DESCRIPTION**

<b>Source</b>	<i>Spodoptera frugiperda</i> , Sf 21 (baculovirus)-derived			
	Human CTLA-4 (Ala37-Phe162) Accession # Q6GR94	IEGRMD	Human IgG <sub>1</sub> (Pro100-Lys330)	6-His tag
	N-terminus		C-terminus	
<b>N-terminal Sequence</b>	Ala37			
<b>Analysis</b>				
<b>Structure / Form</b>	Disulfide-linked homodimer			
<b>Predicted Molecular Mass</b>	40 kDa (monomer)			

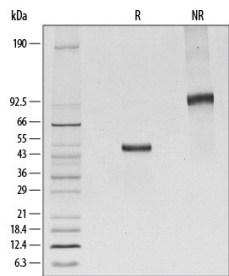
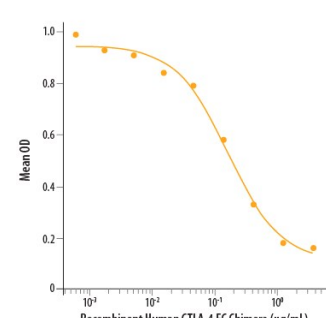
**SPECIFICATIONS**

<b>Activity</b>	Measured by its ability to inhibit IL-2 secretion by stimulated Jurkat human acute T cell leukemia cells. Linsley, P.S. <i>et al.</i> (1991) J. Exp. Med. <b>174:561</b> . The ED <sub>50</sub> for this effect is typically 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.
<b>Endotoxin Level</b>	<0.10 EU per 1 µg of the protein by the LAL method.
<b>Purity</b>	>90%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 500 µg/mL in sterile PBS containing at least 0.1% human or bovine serum albumin.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>● 3 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

**DATA**

<p><b>SDS-PAGE</b></p>  <p>1 µg/lane of Recombinant Human CTLA-4 Fc Chimera was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by silver staining, showing single bands at 51 kDa and 94 kDa, respectively.</p>	<p><b>Bioactivity</b></p>  <p>Recombinant Human CTLA-4 Fc Chimera (Catalog # 325-CT) inhibits IL-2 secretion by stimulated Jurkat human acute T cell leukemia cells. The ED<sub>50</sub> for this effect is typically 0.1-0.4 µg/mL when stimulated with 1 µg/mL Recombinant Human B7-1 Fc Chimera (Catalog # 140-B1) in the presence of PHA.</p>
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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, human CTLA-4 shares 68%, 71% and 83-86% aa sequence identity with mouse, rat and 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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