

**DESCRIPTION**

<b>Source</b>	Human embryonic kidney cell, HEK293-derived human CTLA-4 protein			
	Human CTLA-4 (Ala37-Phe162) Accession # P16410.3	IEGRMD	Human IgG <sub>1</sub> (Pro100-Lys330)	Avi-tag
	N-terminus		C-terminus	
<b>N-terminal Sequence</b>	Ala37			
<b>Analysis</b>				
<b>Structure / Form</b>	Disulfide-linked homodimer, biotinylated via Avi-tag			
<b>Predicted Molecular Mass</b>	42 kDa			

**SPECIFICATIONS**

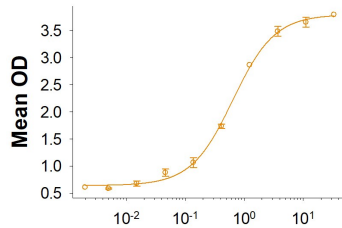
<b>SDS-PAGE</b>	53-61 kDa, under reducing conditions
<b>Activity</b>	Measured by its binding ability in a functional ELISA. When Recombinant Human B7-1/CD80 Fc Chimera (Catalog # 10133-B1) is immobilized at 0.5 µg/mL (100 µL/well), Biotinylated Recombinant Human CTLA-4 Fc Chimera Avi-tag (Catalog # AVI7268) binds with an ED <sub>50</sub> of 0.4-2.4 ng/mL.
<b>Endotoxin Level</b>	<0.10 EU per 1 µg of the protein by the LAL method.
<b>Purity</b>	>95%, 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 Trehalose. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 500 µg/mL in PBS.
<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>	<p><b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b></p> <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**

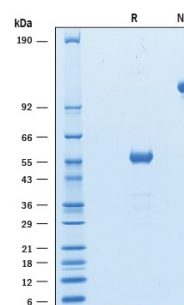
**Binding Activity**



**Biotinylated Recombinant Human CTLA-4 Fc Chimera Avi-tag (ng/mL)**

**Recombinant Human CTLA-4 Fc Chimera Avi-tag Protein Binding Activity** When Recombinant Human B7-1/CD80 Fc Chimera (Catalog # 10133-B1) is immobilized at 0.5 µg/mL, Biotinylated Recombinant Human CTLA-4 Fc Chimera Avi-tag (Catalog # AVI7268) binds with an ED<sub>50</sub> of 0.4-2.4 ng/mL.

**SDS-PAGE**



**Recombinant Human CTLA-4 Fc Chimera Avi-tag Protein SDS-PAGE 2** µg/lane of Biotinylated Recombinant Human CTLA-4 Fc Chimera Avi-tag (Catalog # AVI7268) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 53-61 kDa and 110-120 kDa, respectively.

**BACKGROUND**

CTLA-4 (cytotoxic T-lymphocyte associated protein-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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