Recombinant Human CTLA4 Protein, Fc&Avi tagged

Cat. No. CTLA4-135H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant Human CTLA4 Protein (Ala37-Phe162) with C-terminus Fc-Avi-tag is expressed in CHO cell.
Species	Human
Source	CHO
Conjugation/Label	37-162 aa
Description	Cytotoxic T-lymphocyte–associated protein 4 (CTLA-4), also known as CD152, is a critical immune checkpoint receptor that functions as a negative regulator of T cell activation. It is primarily expressed on activated CD4+ and CD8+ T cells and is constitutively expressed at high levels on regulatory T cells (Tregs). CTLA-4 plays a central role in maintaining immune homeostasis by limiting excessive T cell responses and promoting peripheral tolerance. Structurally, CTLA-4 is a type I transmembrane glycoprotein and a member of the immunoglobulin superfamily. Its extracellular region consists of a single IgV-like domain responsible for ligand binding, followed by a transmembrane region and a short cytoplasmic tail. The cytoplasmic domain lacks intrinsic enzymatic activity but contains conserved signaling motifs, including a tyrosine-based motif that mediates interactions with intracellular signaling and trafficking proteins. CTLA-4 predominantly resides in intracellular vesicles and is rapidly transported to the cell surface following T cell activation. The primary ligands for CTLA-4 are the B7 family co-stimulatory molecules CD80 (B7-1) and CD86 (B7-2), which are expressed on antigen-presenting cells such as dendritic cells,

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	macrophages, and B cells. CTLA-4 binds CD80 and CD86 with significantly higher affinity and avidity than the activating receptor CD28. By outcompeting CD28 for ligand binding and actively removing CD80/CD86 from the surface of antigen-presenting cells through trans-endocytosis, CTLA-4 effectively dampens co-stimulatory signaling and restrains T cell activation. Dysregulation of CTLA-4 function is associated with a range of diseases. Genetic deficiency or loss-of-function mutations in CTLA-4 can lead to severe lymphoproliferative disorders, autoimmunity, and immune dysregulation due to uncontrolled T cell activation. Conversely, excessive CTLA-4 activity can contribute to impaired immune responses, including reduced anti-tumor immunity. In cancer, tumor-induced upregulation of CTLA-4 signaling contributes to immune evasion by suppressing effective T cell responses. CTLA-4 is a landmark target in immunotherapy. Therapeutic antibodies that block CTLA-4, such as immune checkpoint inhibitors, enhance T cell activation and proliferation by restoring co-stimulatory signaling, leading to improved anti-tumor immune responses in several cancers. However, CTLA-4 blockade can also disrupt immune tolerance, resulting in immune-related adverse events. Conversely, strategies that enhance CTLA-4 function or signaling are being explored for the treatment of autoimmune and inflammatory diseases. Together, these approaches highlight CTLA-4's pivotal role at the intersection of immune regulation, disease, and therapy.
Form	Liquid, 1×PBS buffer, pH7.4, 0.22 μm filtered
Molecular Mass	The protein has a predicted molecular weight of 41.9 kDa. Under DTT-reducing conditions, it migrates at approximately 50 kDa on SDS-PAGE.
Purity	>95% based on SDS-PAGE under reducing condition
Applications	ELISA, BLI

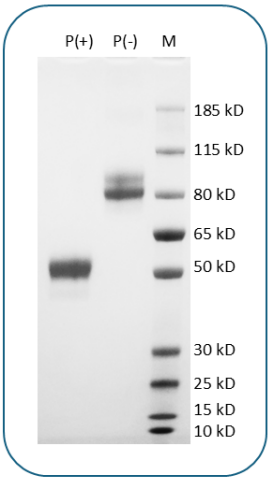
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Storage	Briefly centrifuge the vial upon receipt. An unopened vial can be stored at 4 centigrade for up to 2 weeks, or at -20 centigrade or below for up to six months. The protein may be further diluted to 0.1 mg/mL using 0.22 μm-filtered PBS buffer (pH 7.4). For long-term storage, the diluted stock solution should be aliquoted and stored at ≤ –70 centigrade to minimize freeze-thaw cycles. If additional dilution is required, carrier proteins such as FBS or BSA should be added to maintain protein stability.
Concentration	25 μg size is bottled at 0.2 mg/mL concentration. 100 μg size is supplied at a lot-specific concentration.

GENE INFORMATION

Gene Name	CTLA4 cytotoxic T-lymphocyte-associated protein 4 [Homo sapiens (human)]
Official Symbol	CTLA4
Synonyms	CTLA4; cytotoxic T-lymphocyte-associated protein 4; celiac disease 3, CELIAC3; cytotoxic T-lymphocyte protein 4; CD; CD28; CD152; GSE; ICOS; CD152 isoform; celiac disease 3; cytotoxic T-lymphocyte antigen 4; cytotoxic T-lymphocyte-associated antigen 4; cytotoxic T-lymphocyte-associated serine esterase-4; cytotoxic T lymphocyte associated antigen 4 short spliced form; ligand and transmembrane spliced cytotoxic T lymphocyte associated antigen 4; GRD4; CTLA-4; IDDM12; CELIAC3;
Gene ID	1493
mRNA Refseq	NM_001037631
Protein Refseq	NP_001032720
MIM	123890

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UniProt ID	P16410
SDS-PAGE	 Human CTLA4 Protein (C-Fc-Avi) on SDS-PAGE under reducing condition (P+) and non-reducing condition (P-). The gel was stained for 1 hour with BlinkBlue. The purity of this protein appears to be greater than 95%.

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