

Recombinant Human CTLA4 Protein, His tagged, APC Labeled

Cat. No. CTLA4-131H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant Human CTLA4 Protein (Ala37-Phe162) with C-terminus His-tag is expressed in CHO cell and conjugated to APC.
Species	Human
Source	CHO
ProteinLength	APC
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

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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, 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, 0.09% NaN ₃ with a carrier protein
Molecular Mass	The protein has a predicted molecular weight of 15 kDa. Under DTT-reducing conditions, it migrates at approximately 25 kDa on SDS-PAGE prior to conjugation.
Applications	Flow Cytometry

Storage	Briefly centrifuge the vial upon receipt. An unopened vial may be stored at 2–8 centigrade for up to six months.
Concentration	25 µg size is bottled at 0.1 mg/mL concentration. 100 µg size is bottled at 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
UniProt ID	P16410

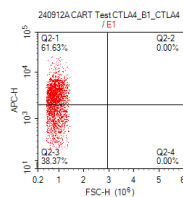
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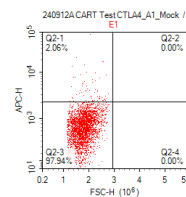
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FC

A: CTLA4 CAR-transfected
Stained with APC-CTLA4-His



B: Mock-transfected
Stained with APC-CTLA4-His



CHO cells transfected with either CTLA4 CAR or Mock plasmid were stained with APC conjugated CTLA4 (C-His) protein at 1 µg/test

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