

## PE Human CTLA4 (CD152) Protein (C-Fc)

<b>Catalog Number:</b>	808301, 808302
<b>Size:</b>	25 ug, 100 ug
<b>Target Name:</b>	CTLA4, CD152
<b>Regulatory Status:</b>	RUO

### PRODUCT DETAILS

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<b>Application:</b>	Flow Cytometry
<b>Format:</b>	Liquid, PE
<b>Expression Host:</b>	CHO
<b>Species:</b>	Human
<b>Sources:</b>	Recombinant Human CTLA4 Protein (Ala37-Phe162) with C-terminus Fc-tag is expressed in CHO cell and conjugated to PE.
<b>Accession Number:</b>	P16410
<b>Molecular Weight:</b>	The protein has a predicted molecular weight of 39.7 kDa. Under DTT-reducing conditions, it migrates at approximately 50 kDa on SDS-PAGE prior to conjugation.
<b>Affinity Tag:</b>	C-Fc
<b>Formulation:</b>	1xPBS buffer, pH7.4, 0.09% NaN3 with a carrier protein
<b>Endotoxin level:</b>	Not tested
<b>Protein Concentration:</b>	25µg size is bottled at 0.1mg/mL concentration. 100 µg size is bottled at lot specific concentration.
<b>Storage and Handling:</b>	Briefly centrifuge the vial upon receipt. An unopened vial may be stored at 2-8°C for up to six months.

### BACKGROUND INFORMATION

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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

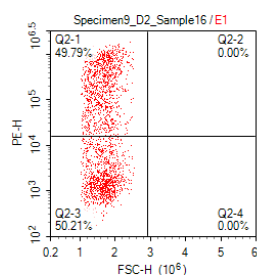
antigen-presenting cells such as dendritic cells, macrophages, and B cells. CTLA-4 binds CD80 and CD86 with significantly higher affinity and avidity than the activating receptor CD28. By outcompeting CD28 for ligand binding and actively removing CD80/CD86 from the surface of antigen-presenting cells 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.

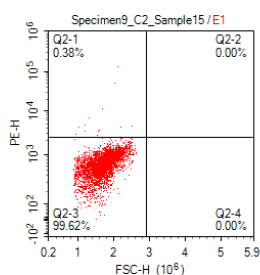
CTLA-4 is a landmark target in immunotherapy. Therapeutic antibodies that block CTLA-4, such as immune checkpoint inhibitors, enhance T cell activation and proliferation by restoring co-stimulatory signaling, leading to improved anti-tumor immune responses in several cancers. However, CTLA-4 blockade 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.

## PRODUCT DATA

**A: CTLA4 CAR-transfected  
Stained with PE-CTLA4-Fc**



**B: Mock-transfected  
Stained with PE-CTLA4-Fc**



CHO cells transfected with either CTLA4 CAR or Mock plasmid were stained with PE conjugated CTLA4 (C-Fc) protein at 1ug/test

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