

**Synonym**

CTLA4,CD152

**Source**

Human CTLA-4, His Tag(CT4-H5229) is expressed from human 293 cells (HEK293). It contains AA Ala 37 - Phe 162 (Accession # [P16410-1](#)).

Predicted N-terminus: Ala 37

**Molecular Characterization**

CTLA-4(Ala 37 - Phe 162)	Poly-his
NP_005205.2	

This protein carries a polyhistidine tag at the C-terminus.

The protein has a calculated MW of 15.4 kDa. The protein migrates as 20-25 kDa under reducing (R) condition (SDS-PAGE) due to different extent glycosylation.

**Endotoxin**

Less than 1.0 EU per  $\mu$ g by the LAL method / rFC method.

**Purity**

>95% as determined by SDS-PAGE.

**Formulation**

Lyophilized from 0.22  $\mu$ m filtered solution in PBS, pH7.4 with trehalose as protectant.

Contact us for customized product form or formulation.

**Reconstitution**

Please see Certificate of Analysis for specific instructions.

*For best performance, we strongly recommend you to follow the reconstitution protocol provided in the CoA.*

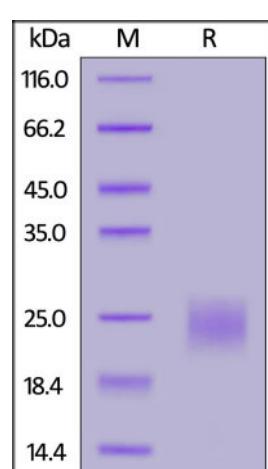
**Storage**

For long term storage, the product should be stored at lyophilized state at -20°C or lower.

*Please avoid repeated freeze-thaw cycles.*

This product is stable after storage at:

- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

**SDS-PAGE**

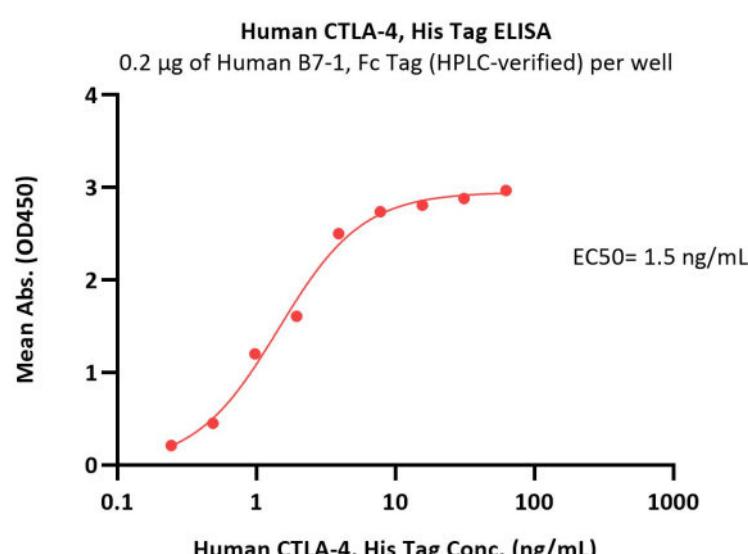
Human CTLA-4, His Tag on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 95%.

**Bioactivity-ELISA**

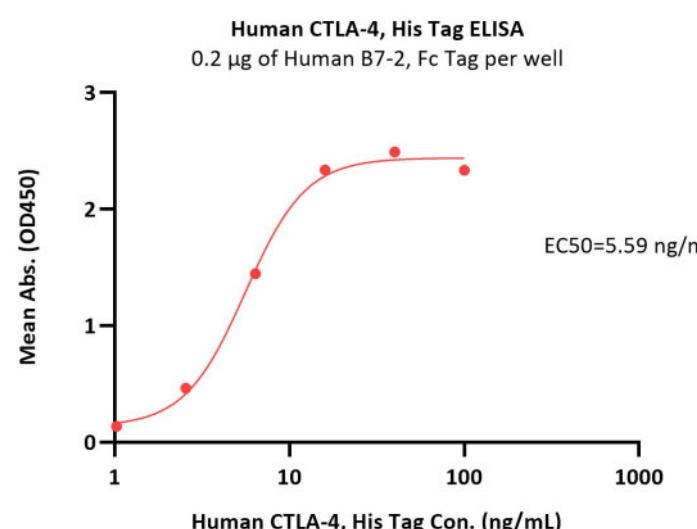
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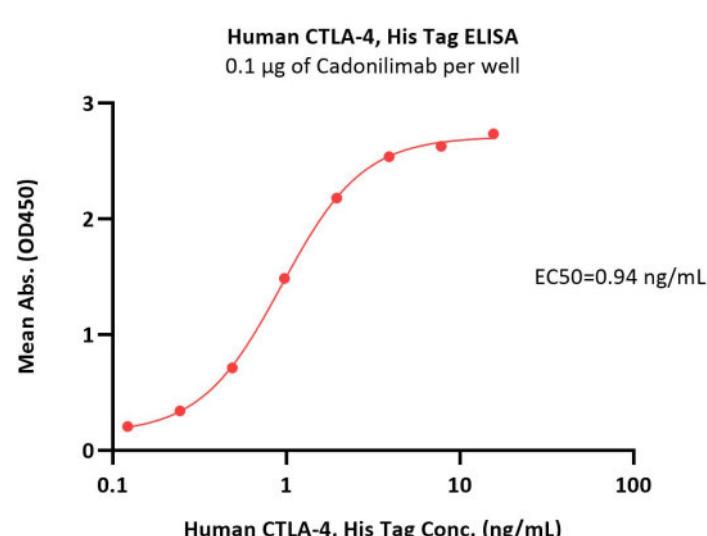
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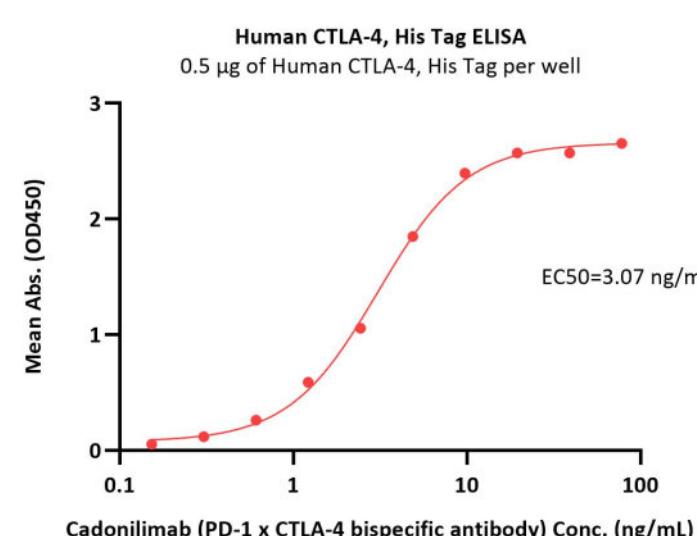
Immobilized Human B7-1, Fc Tag (HPLC-verified) (Cat. No. B71-H5259) at 2 µg/mL (100 µL/well) can bind Human CTLA-4, His Tag (Cat. No. CT4-H5229) with a linear range of 0.2-4 ng/mL (QC tested).



Immobilized Human B7-2, Fc Tag (Cat. No. CD6-H5257) at 2 µg/mL (100 µL/well) can bind Human CTLA-4, His Tag (Cat. No. CT4-H5229) with a linear range of 1-6.4 ng/mL (Routinely tested).

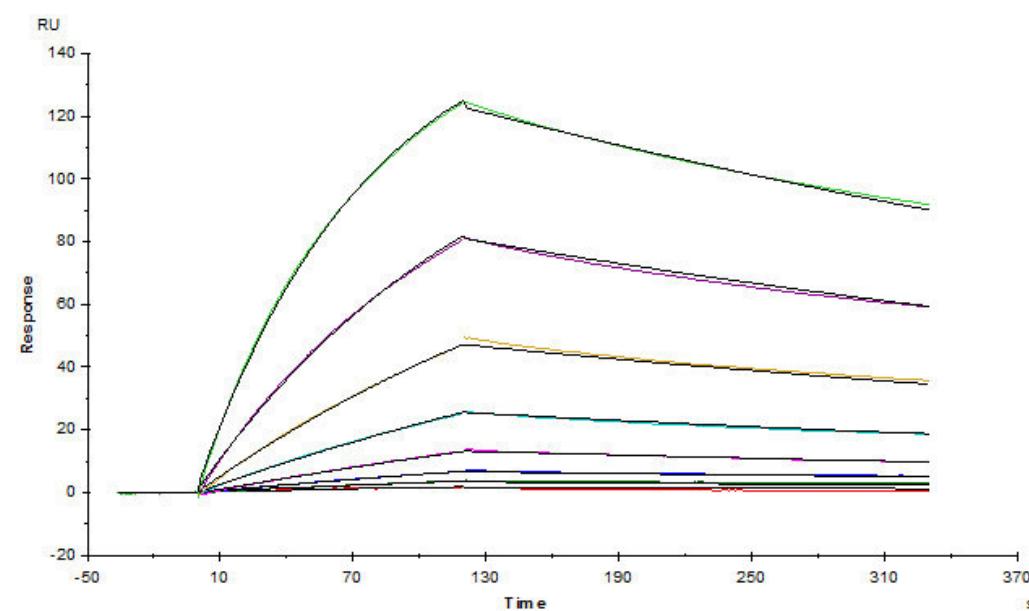


Immobilized Cadonilimab at 1 µg/mL (100 µL/well) can bind Human CTLA-4, His Tag (Cat. No. CT4-H5229) with a linear range of 0.1-2 ng/mL (Routinely tested).



Immobilized Human CTLA-4, His Tag (Cat. No. CT4-H5229) at 5 µg/mL, add increasing concentrations of Cadonilimab (PD-1 x CTLA-4 bispecific antibody) and then add Biotinylated Human PD-1, Fc,Avitag (Cat. No. PD1-H82F1) at 0.2 µg/mL. Detection was performed using HRP-conjugated Streptavidin (Acro, Cat. No. STN-NH913) with sensitivity of 3.07 ng/mL (Routinely tested).

## Bioactivity-SPR



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Yervoy (Ipilimumab, Human IgG1) captured on CM5 chip via anti-human IgG Fc antibodies surface, can bind Human CTLA-4, His Tag (Cat. No. CT4-H5229) with an affinity constant of 25.7 nM as determined in a SPR assay (Biacore T200) (Routinely tested).

## Background

CTLA-4 (Cytotoxic T-Lymphocyte Antigen 4) is also known as CD152 (Cluster of differentiation 152), is a protein receptor that downregulates the immune system. CTLA4 is a member of the immunoglobulin superfamily, which is expressed on the surface of Helper T cells and transmits an inhibitory signal to T cells. The protein contains an extracellular V domain, a transmembrane domain, and a cytoplasmic tail. Alternate splice variants, encoding different isoforms. CTLA4 is similar to the T-cell co-stimulatory protein, CD28, and both molecules bind to CD80 and CD86, also called B7-1 and B7-2 respectively, on antigen-presenting cells. CTLA4 transmits an inhibitory signal to T cells, whereas CD28 transmits a stimulatory signal. Intracellular CTLA4 is also found in regulatory T cells and may be important to their function. Fusion proteins of CTLA4 and antibodies (CTLA4-Ig) have been used in clinical trials for rheumatoid arthritis.

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