Bioactive, Recombinant Mouse CTLA-4 Protein Dimer, His Tag
Product Code: CSP-25185-01
For Research Use Only (RUO)

Protein Name
CTLA-4

Alternate Name(s)
CTLA-4, CD152, CTLA4, ALPS5, CD, CD152, CELIAC3, GRD4, GSE, and IDDM12

Protein Construct
CTLA-4 protein dimer contains a CTLA-4 extracellular domain (UniProt# P09793) fused with a proprietary cis-dimer motif followed by a His tag at the C-terminus. Expressed in HEK293T cell line.

SDS-Page Molecular Weight
44 kDa. The migration range of the dimer protein with glycosylation under non-reducing condition is 60-85 kDa on SDS PAGE.

Shipping Conditions
Frozen Dry Ice

Expression Host
HEK293T

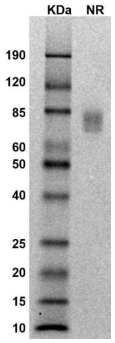
Purity
Greater than 90% dimer form as determined by SDS-PAGE under non-reducing condition

Amino Acid Range
E36-D161

Formulation
0.22µm filtered PBS, pH 7.4

Stability & Storage
-80^{0}C

SDS-PAGE



MW: Molecular Weight marker reduced condition
NR: CTLA-4 dimer under non-reduced condition

The migration range of the dimer protein with glycosylation under non-reducing condition is 60-85 kDa on SDS PAGE.

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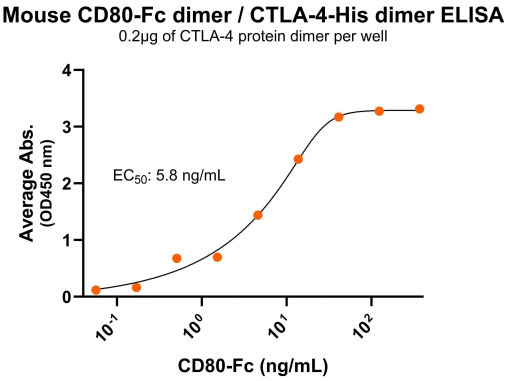
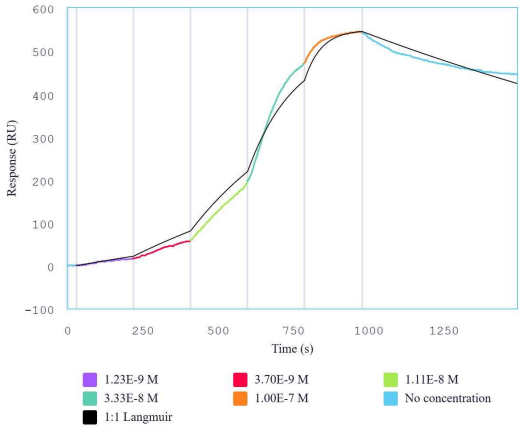
Bioactivity – Ligand Binding



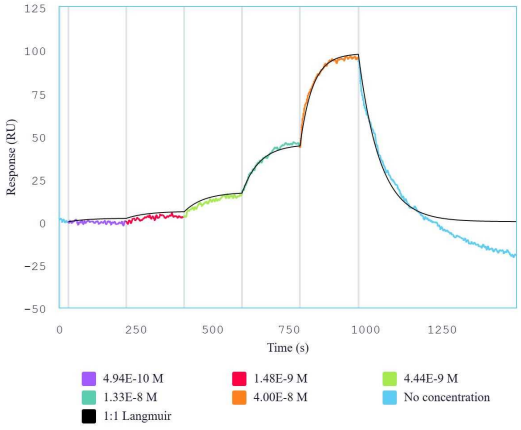
Immobilized mouse CTLA-4 dimer protein, His Tag (CSP-25185-01) at 2 μg/mL (100 μL/well) can bind mouse CD80 dimer protein, Fc Tag (Cat. No. CSP-25187-04), with half maximal effective concentration (EC50) range of 2.9-11.7 ng/mL (QC tested).

Bioactivity – SPR



Immobilized mouse CTLA-4 dimer protein, His tag (CSP-25185-01) can bind mouse CD80 dimer protein, Fc Tag (Cat. No. CSP-25187-04) with a KD of 1.4-5.5 nM as determined by SPR.

Bioactivity – SPR



Immobilized mouse CTLA-4 dimer protein, His tag (CSP-25185-01) can bind anti-mouse CTLA-4 monoclonal antibody with a KD of 28.3-113.2 nM as determined by SPR.

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Background

Cytotoxic T-lymphocyte associated protein 4 (CTLA-4), also known as CD152 (cluster of differentiation 152), CTLA4, ALPS5, CD, CELIAC3, GRD4, GSE, and IDDM12 is a member of the immunoglobulin superfamily. CTLA-4 contains extracellular immunoglobulin-like (Ig-like) domains (an Ig-V-like and an Ig-C-like domain), a transmembrane domain, and a cytoplasmic tail. As an immune checkpoint CTLA-4 binds both CD80 (Cluster of differentiation 80) and CD86 (Cluster of differentiation 86) to transmit an inhibitory signal with T cells, competing with CD28 (Cluster of differentiation 28) which transmits a stimulatory signal. It is often overexpressed in human malignancies caused by immunosurveillance, making the inhibition of immune checkpoint proteins like CTLA-4 an emerging strategy in cancer therapy. CTLA-4 gene variants have been associated with Type 1 diabetes, Graves' disease, Hashimoto's thyroiditis, celiac disease, and other autoimmune diseases. While structurally and functionally similar to human CTLA-4, mouse CTLA-4 is a species-specific tool essential for preclinical studies, basic research and translational research in cancer immunotherapy.