Product Name: Bioactive, Recombinant Mouse CD80 Protein Dimer, FLAG-His Tag

Product Code: CSP-25187-02

FOR RESEARCH USE ONLY (RUO)

Protein Name: CD80-Flag-His

Alternate Name(s): B7, B7-1, B7.1, BB1, CD28LG, CD28LG1, LAB7

Expression Host
HEK293T

Amino Acid Range
V38-N246

Protein Construct
CD80 dimer protein contains the CD80 extracellular domain (UniProt# Q00609) fused with a proprietary dimer motif followed by a tandem FLAG-His tag at the C-terminus. Expressed in HEK293T cell line.

SDS-Page Molecular Weight
66 kDa. The migration range of the heterodimer protein with glycosylation under non-reducing condition is between 120 and 190 kDa on SDS PAGE.

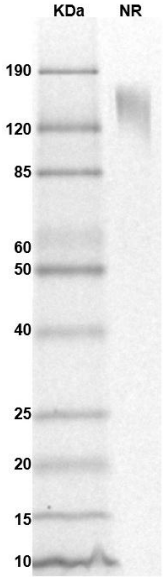
Purity
Greater than 90% dimer form as determined by SDS-PAGE under non-reducing condition

Formulation
0.22µm filtered PBS, pH 7.4

Stability & Storage
-80^{0}C

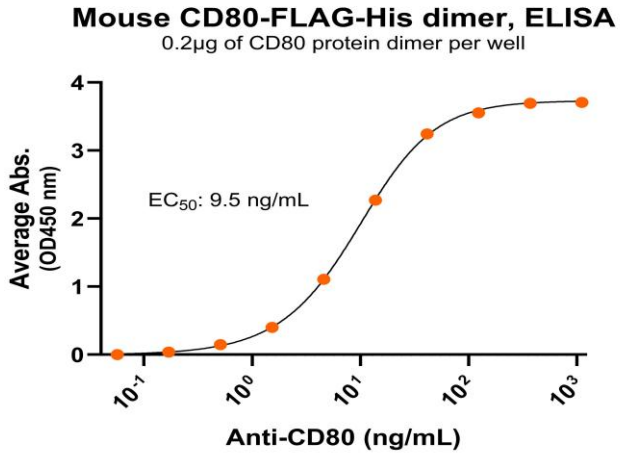
Shipping Conditions
Frozen Dry Ice

SDS-PAGE



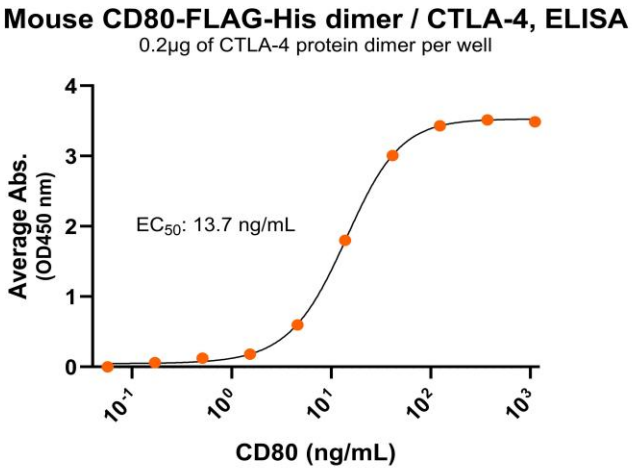
MW: Molecular Weight marker reduced condition
NR: CD80 dimer under non-reduced condition
The migration range of the heterodimer protein with glycosylation under non-reducing condition is between 120 and 190 kDa on SDS PAGE.

Antibody Binding



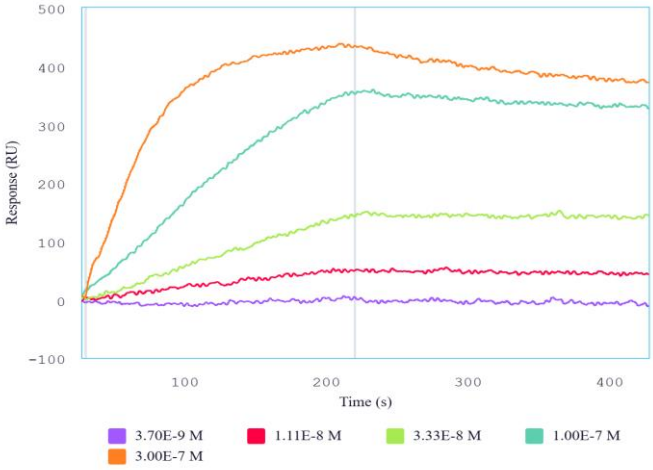
Immobilized mouse CD80 protein dimer, His Tag (CSP-25187-02) at 2 μg/mL (100 μL/well) can bind anti-mouse CD80 polyclonal antibody with half maximal effective concentration (EC50) range of 4.7-18.9 ng/mL (QC tested).

Ligand Binding



Immobilized mouse CTLA-4 protein dimer, His Tag (CSP-25185-01) at 2 μg/mL (100 μL/well) can bind mouse CD80 protein dimer, His Tag (CSP-25187-02) with half maximal effective concentration (EC50) range of 6.8-27.4 ng/mL (QC tested).

Label Free Binding



Immobilized mouse CTLA-4 protein dimer, His tag (Cat. No. CSP-25185-01) can bind mouse CD80 protein dimer, FLAG-His tag (Cat. No. CSP-25187-02) with a KD of 2.5-9.9 nM as determined by LSPR (Nicoya Alto).

Background

Cluster of differentiation 80 (CD80) is a Type I transmembrane glycoprotein in the immunoglobulin superfamily and a member of the B7 Family of ligands. CD80 is also known as B7, B7-1, B7.1, BB1, CD28LG, CD28LG1, and LAB7. CD80 contains an extracellular domain (ECD), a transmembrane domain, and a cytoplasmic domain. The ECD consists of two immunoglobulin (Ig)-like subdomains, a variable-like domain (Ig-V-like domain), and a constant-like domain (Ig-C-like domain). It is primarily expressed on antigen-presenting cells (APCs), such as dendritic cells, macrophages, and B cells. CD80 interacts with CTLA-4 (Cytotoxic T-lymphocyte associated protein 4) to transmit an inhibitory signal with T cells and CD28 (Cluster of differentiation 28) to transmit a stimulatory signal. It is often overexpressed in various autoimmune diseases such as multiple sclerosis and systemic lupus erythematosus, as well as some cancers. CD80 exists as a monomer but its dimeric form can influence immune regulation and contribute to pathogenic conditions. A recombinant protein mimicking the CD80 dimer conformation can be crucial for therapeutic discovery. While structurally and functionally similar to human CD80, mouse CD80 is a species-specific tool essential for preclinical studies, basic research and translational research in cancer immunotherapy.