Product Name: Bioactive, Recombinant Rhesus macaque CD80 Protein Dimer, His Tag

Product Code: CSP-25293-01

FOR RESEARCH USE ONLY (RUO)

Protein Name: CD80

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

Expression Host
HEK293T

Amino Acid Range
V35-N242

Protein Construct
CD80 dimer protein contains a CD80 extracellular domain (UniProt# G7NXN7) fused with a proprietary dimer motif followed by a His tag at the C-terminus. Expressed in HEK293T cell line.

SDS-Page Molecular Weight
64 kDa. The migration range of the heterodimer protein with glycosylation under non-reducing condition is 85 to 120 kDa on SDS PAGE.

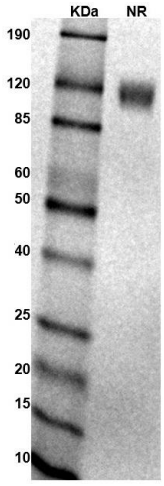
Purity
Greater than 90% dimer form as determined by SDS-PAGE under non-reducing condition

Formulation
0.22µm filtered PBS, pH 7.4

Stability & Storage
-80^{0}C

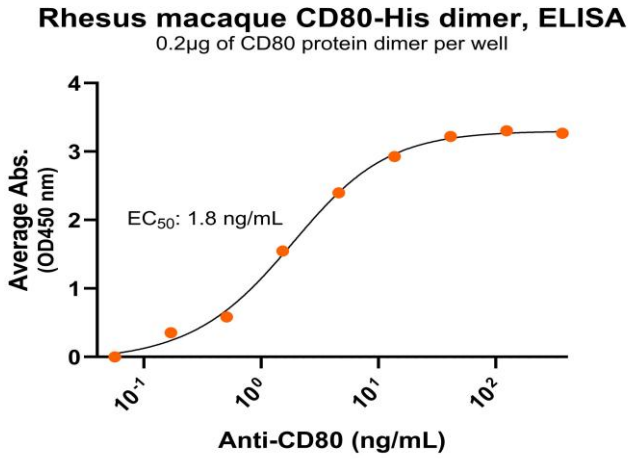
Shipping Conditions
Frozen Dry Ice

SDS-PAGE



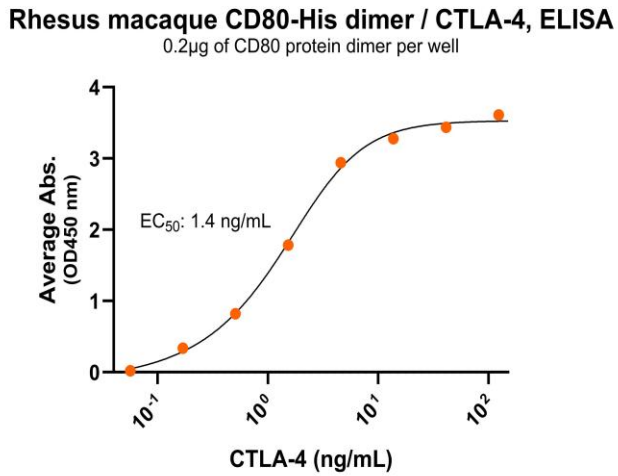
MW: Molecular Weight marker reduced condition
NR: CD80 dimer under non-reduced condition
The migration range of the heterodimer protein with glycosylation under non-reducing condition is 85 to 120 kDa on SDS PAGE.

Antibody Binding



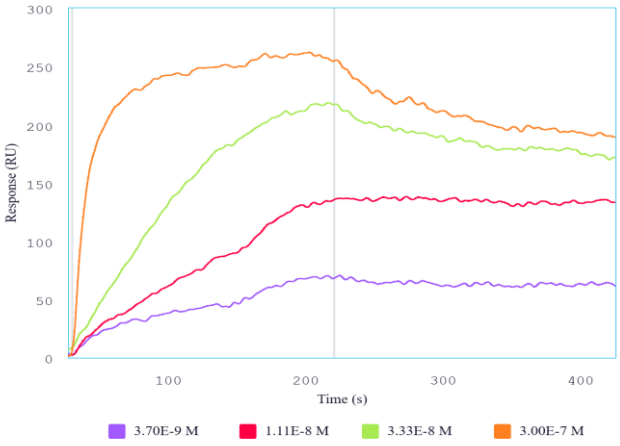
Immobilized Rhesus macaque CD80 protein dimer, His Tag (CSP-25293-01) at 2 μg/mL (100 μL/well) can bind anti-human CD80 monoclonal antibody with half maximal effective concentration (EC50) range of 0.9-3.5 ng/mL (QC tested).

Ligand Binding



Immobilized Rhesus macaque CD80 protein dimer, His Tag (CSP-25293-01) at 2 μg/mL (100 μL/well) can bind Rhesus macaque CTLA-4 with half maximal effective concentration (EC50) range of 0.7-2.7 ng/mL (QC tested).

Label Free Binding



Immobilized Rhesus macaque CTLA-4 can bind Rhesus macaque CD80 protein dimer, His Tag (CSP-25293-01) with a KD of 1.3-5.3 nM as determined by LSPR (Nicoya Alto).

Background

Rhesus macaque CD80 (Cluster of differentiation 80) 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 consisting 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 homodimer, Rhesus macaque CD80 homodimer is a species-specific tool essential for preclinical studies, basic research, and translational research.