

# Recombinant Human CD80 protein, Mouse IgG2a Fc-tagged, low endotoxin

**Cat. No.** CD80-363H    **Lot. No.** (See product label)

## SPECIFICATION

### Product Overview

Recombinant Human CD80 protein (Val35-Asn242)(low endotoxin), fused to Mouse IgG2a Fc tag at C-terminus, was expressed in human 293 cells (HEK293).

### Species

Human

### Source

HEK293

### ProteinLength

208

### Description

B7-1 and B7-2, together with their receptors CD28 and CTLA4, constitute one of the dominant co-stimulatory pathways that regulate T and Bcell responses. Although both CTLA4 and CD28 can bind to the same ligands, CTLA4 binds to B71 and B72 with a 20 100 fold higher affinity than CD28 and is involved in the downregulation of the immune response.

B-lymphocyte activation antigen B7-1 (referred to as B7) also known as cluster of Differentiation 80 (CD80), is a member of cell surface immunoglobulin superfamily and is expressed on activated B cells, activated T cells, macrophages and dendritic cells. It is the ligand for two different proteins on the T cell surface: CD28 (for autoregulation and intercellular association) and CTLA-4 (for attenuation of regulation and cellular disassociation). CD80 works in tandem with CD86 to prime T cells. CD80 plays a role in induction of innate immune responses by activating NF-κB-signaling pathway in macrophages. CD80 is thus regarded as promising therapeutic targets for autoimmune diseases and various carcinomas.

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<b>Form</b>	Lyophilized from 0.22 um filtered solution in Tris with Glycine, Arginine and NaCl, pH7.5, 10% trehalose.
<b>Molecular Mass</b>	The protein has a calculated MW of 50.9 kDa. The protein migrates as 65-100 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.
<b>Endotoxin</b>	Less than 0.1 EU per ug by the LAL method.
<b>Purity</b>	>95% as determined by SDS-PAGE.
<b>Storage</b>	For long term storage, the product should be stored at lyophilized state at -20 centigrade or lower. Please avoid repeated freeze-thaw cycles. This product is stable after storage at: -20 centigrade to -70 centigrade for 12 months in lyophilized state; -70 centigrade for 3 months under sterile conditions after reconstitution.
<b>Reconstitution</b>	It is recommended that sterile water be added to the vial to prepare a stock solution of 0.2 ug/ul. Centrifuge the vial at 4°C before opening to recover the entire contents.

## GENE INFORMATION

<b>Gene Name</b>	CD80
<b>Official Symbol</b>	CD80
<b>Synonyms</b>	CD80; CD80 molecule; CD28LG, CD28LG1, CD80 antigen (CD28 antigen ligand 1, B7 1 antigen) , CD80 molecule; T-lymphocyte activation antigen CD80; B lymphocyte activation antigen B7; B7 1; B7.1; activation B7-1 antigen; costimulatory factor CD80; CTLA-4 counter-receptor B7.1; B-lymphocyte activation antigen B7; costimulatory molecule variant IgV-CD80; CD80 antigen (CD28 antigen ligand 1, B7-1 antigen); B7;

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BB1; B7-1; LAB7; CD28LG; CD28LG1

**Gene ID** 941

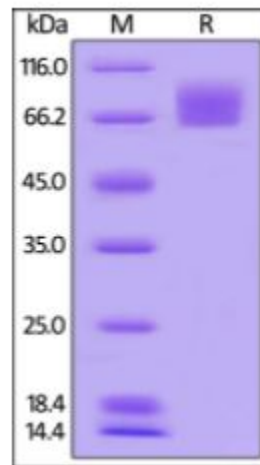
**mRNA Refseq** NM\_005191

**Protein Refseq** NP\_005182

**MIM** 112203

**UniProt ID** P33681

**SDS-PAGE of CD80-363H**



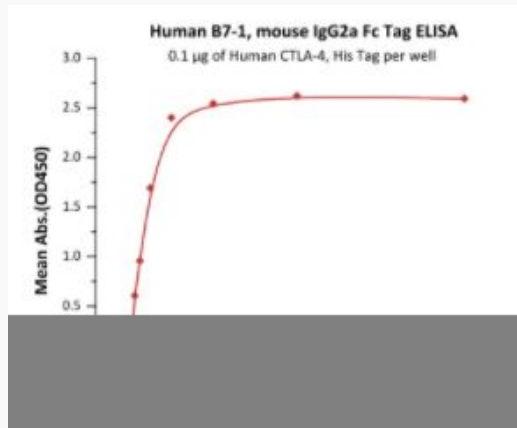
Human B7-1, Mouse IgG2a Fc Tag, low endotoxin on SDS-PAGE under reducing (R) condition. The gel was stained overnight with Coomassie Blue. The purity of the protein is greater than 95%.

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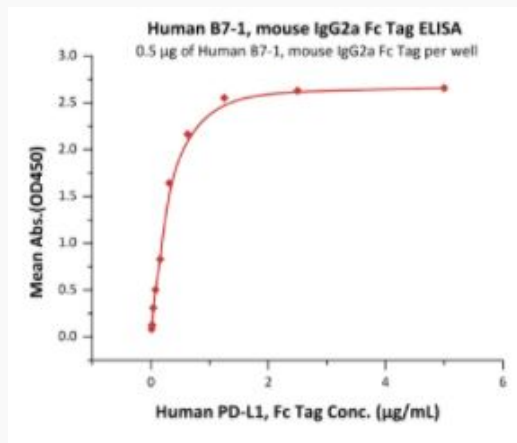
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**Bioactivity-ELISA of  
CD80-363H**



Immobilized Human CTLA-4, His Tag at 1 µg/mL (100 µL/well) can bind Human B7-1, Mouse IgG2a Fc Tag, low endotoxin with a linear range of 2-31 ng/mL (QC tested).

**Bioactivity-ELISA of  
CD80-363H**



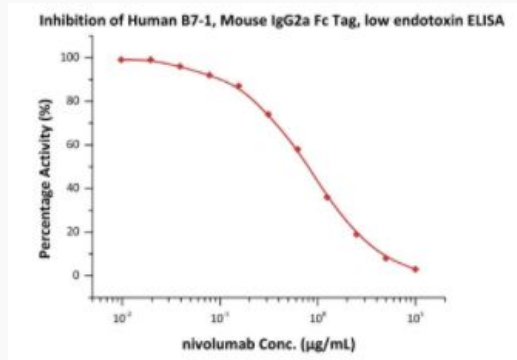
Immobilized Human B7-1, Mouse IgG2a Fc Tag, low endotoxin at 5 µg/mL (100 µL/well) can bind Human PD-L1, Fc Tag with a linear range of 0.01-0.313 µg/mL (Routinely tested).

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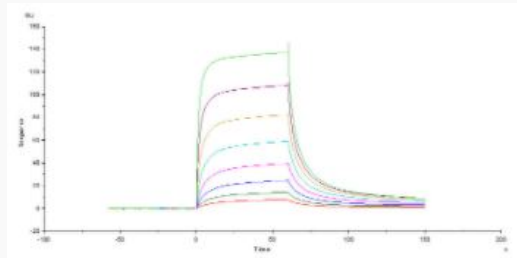
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**Bioactivity-ELISA of  
CD80-363H**



Serial dilutions of Ipilimumab were added into Human B7-1, Mouse IgG2a Fc Tag, low endotoxin : Biotinylated Human CTLA-4, Fc,Avitag binding reactions. The half maximal inhibitory concentration (IC50) is 0.8402 µg/mL (Routinely tested).

**Bioactivity-SPR of  
CD80-363H**



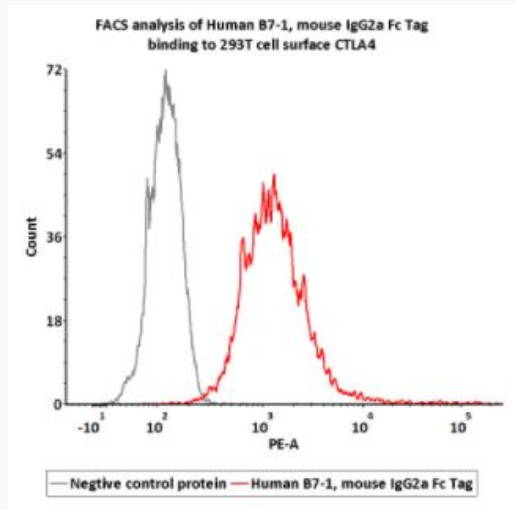
Immobilized Human/Cynomolgus/Rhesus macaque CD28, Fc Tag (HPLC-verified) on CM5 Chip can bind Human B7-1, Mouse IgG2a Fc Tag, low endotoxin with an affinity constant of 2.72 µM as determined in a SPR assay (Routinely tested).

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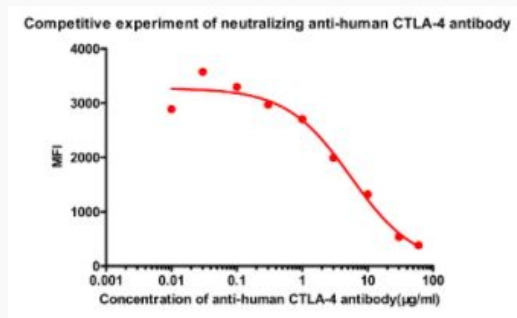
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### Bioactivity-FACS of CD80-363H



Flow Cytometry assay shows that Human B7-1, Mouse IgG2a Fc Tag, low endotoxin can bind to 293 cell overexpressing human CTLA-4. The concentration of Human B7-1 is 1  $\mu\text{g}/\text{mL}$  (Routinely tested).

### Bioactivity-FACS of CD80-363H



FACS analysis shows that the binding of Human B7-1, Mouse IgG2a Fc Tag, low endotoxin to 293 overexpressing CTLA-4 was inhibited by increasing concentration of neutralizing Anti-human CTLA-4 antibody. The concentration of Human B7-1 is 1  $\mu\text{g}/\text{mL}$ . The  $\text{IC}_{50}$  is 5.5  $\mu\text{g}/\text{mL}$  (Routinely tested).

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