



## Synonym

CD80, B7, B7-1, B7.1, BB1, CD28LG, CD28LG1, LAB7

## Source

Biotinylated Human B7-1, Fc,Avitag(B71-H82F2) is expressed from human 293 cells (HEK293). It contains AA Val 35 - Asn 242 (Accession # [NP\\_005182.1](#)).

Predicted N-terminus: Val 35

## Molecular Characterization

|                        |                       |     |
|------------------------|-----------------------|-----|
| B7-1(Val 35 - Asn 242) | Fc(Pro 100 - Lys 330) | Avi |
| NP_005182.1            | P01857                |     |

This protein carries a human IgG1 Fc tag at the C-terminus, followed by an Avi tag (Avitag™).

The protein has a calculated MW of 52.3 kDa. The protein migrates as 65-95 kDa under reducing (R) condition, and 130-160 kDa under non-reducing (NR) condition (SDS-PAGE) due to glycosylation.

## Labeling

*Biotinylation of this product is performed using Avitag™ technology. Briefly, the single lysine residue in the Avitag is enzymatically labeled with biotin.*

## Protein Ratio

Passed as determined by the HABA assay / binding ELISA.

## Purity

>95% as determined by SDS-PAGE.

## Formulation

Lyophilized from 0.22 µm filtered solution in Tris with Glycine, Arginine and NaCl, pH7.5 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

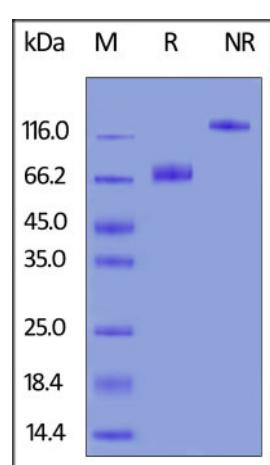
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

*Please avoid repeated freeze-thaw cycles.*

This product is stable after storage at:

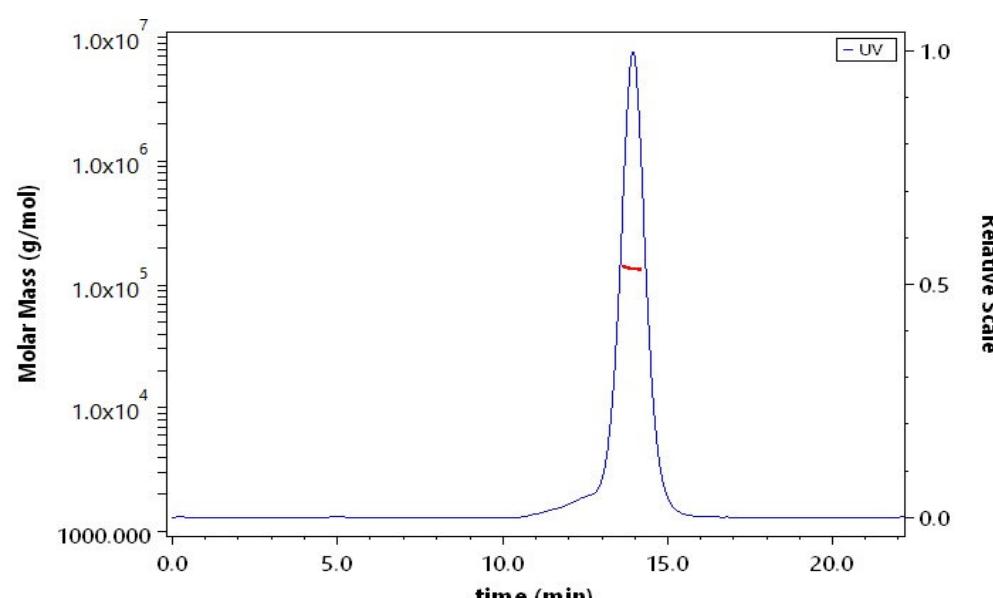
- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

## SDS-PAGE



Biotinylated Human B7-1, Fc,Avitag on SDS-PAGE under reducing (R) and non-reducing (NR) conditions. The gel was stained with Coomassie Blue. The purity of the protein is greater than 95%.

## SEC-MALS



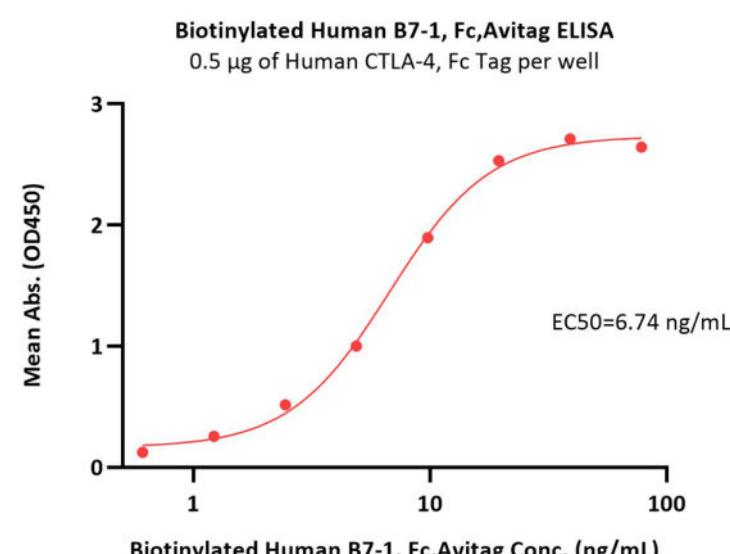
The purity of Biotinylated Human B7-1, Fc,Avitag (Cat. No. B71-H82F2) is more than 85% and the molecular weight of this protein is around 130-165 kDa verified by SEC-MALS.

[Report](#)

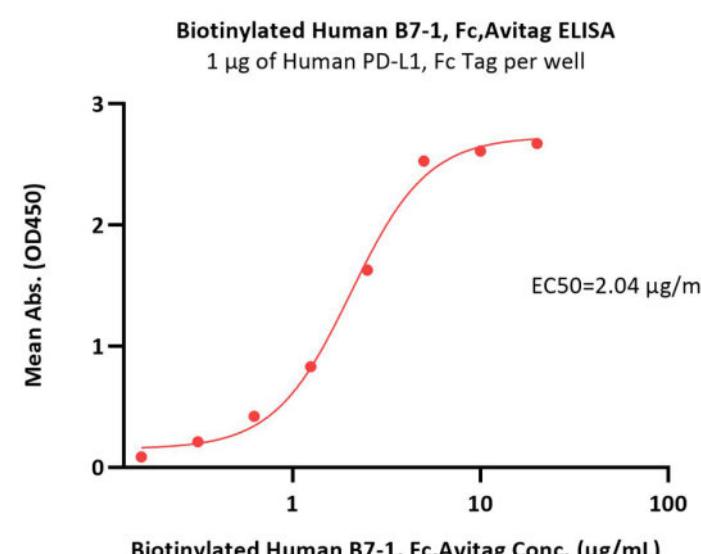
## Bioactivity-ELISA

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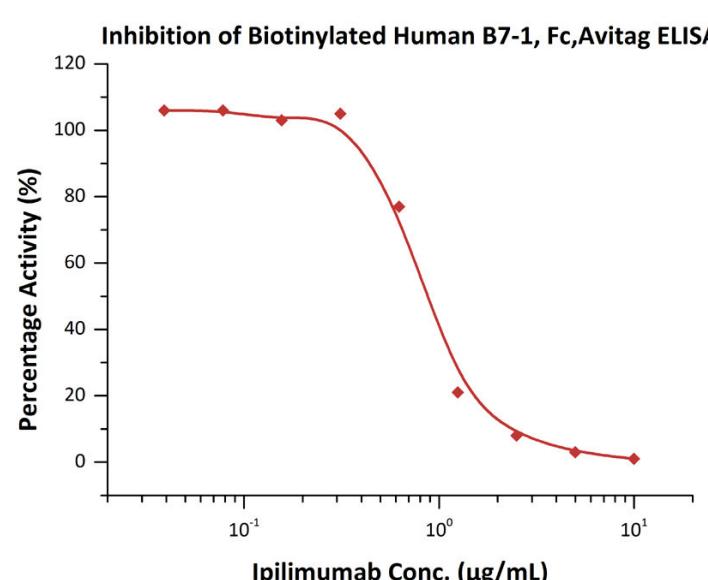




Immobilized Human CTLA-4, Fc Tag (Cat. No. CT4-H5255) at 5 µg/mL (100 µL/well) can bind Biotinylated Human B7-1, Fc,Avitag (Cat. No. B71-H82F2) with a linear range of 0.6-9.8 ng/mL (QC tested).

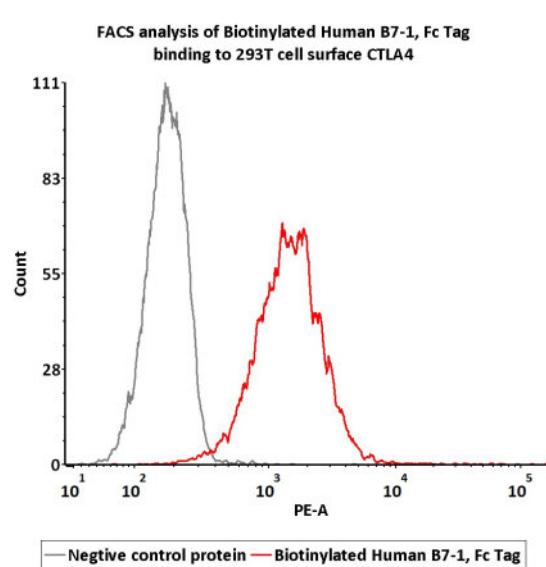


Immobilized Human PD-L1, Fc Tag (Cat. No. PD1-H5258) at 10 µg/mL (100 µL/well) can bind Biotinylated Human B7-1, Fc,Avitag (Cat. No. B71-H82F2) with a linear range of 0.156-5 µg/mL (Routinely tested).

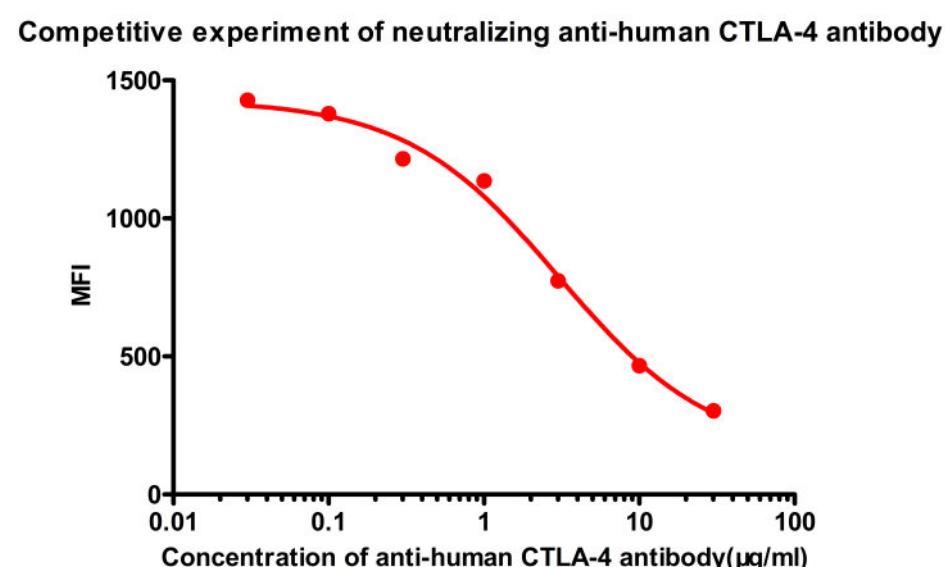


Serial dilutions of Ipilimumab were added into Human CTLA-4, Fc Tag (Cat. No. CT4-H5255): Biotinylated Human B7-1, Fc,Avitag (Cat. No. B71-H82F2) binding reactions. The half maximal inhibitory concentration (IC50) is 0.8260 µg/mL (Routinely tested).

## Bioactivity-FACS



Flow Cytometry assay shows that Biotinylated Human B7-1, Fc,Avitag (Cat. No. B71-H82F2) can bind to 293 cell overexpressing human CTLA-4. The concentration of Human B7-1 is 0.3 µg/mL (Routinely tested).



FACS analysis shows that the binding of Biotinylated Human B7-1, Fc,Avitag (Cat. No. B71-H82F2) to 293 overexpressing CTLA-4 was inhibited by increasing concentration of neutralizing Anti-Human CTLA-4 antibody. The

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concentration of B7-1 used is 0.3  $\mu$ g/mL. The IC50 is 3.025  $\mu$ g/mL (Routinely tested).

## Background

B7-1 and B7-2, together with their receptors CD28 and CTLA4, constitute one of the dominant co-stimulatory pathways that regulate T and B cell responses. Although both CTLA4 and CD28 can bind to the same ligands, CTLA4 binds to B7-1 and B7-2 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- $\kappa$ B-signaling pathway in macrophages. CD80 is thus regarded as promising therapeutic targets for autoimmune diseases and various carcinomas.

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