

B7-1/CD80 Catalog # PVGS1517

Product Information

Primary Accession Species	<u>P33681</u> Human
Sequence	Val35-Asn242
Purity	> 95% as analyzed by SDS-PAGE
Endotoxin Level Biological Activity	Assay #1: Immobilized CTLA-4, hFc, Human (Cat.No.: Z03373) at 2.0 [g/ml (100 []/well) can bind biotinylated B7-1/CD80, hFc, Human. Assay #2: Immobilized CD28, hFc, Human (Cat.No.: Z03413) at 2.0 [g/ml (100 []/well) can bind biotinylated B7-1/CD80, hFc, Human.
Expression System	HEK 293
Formulation Reconstitution	Lyophilized from a 0.2 Im filtered solution in PBS. It is recommended that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute the lyophilized powder in ddH ₂ O or PBS up to 100 Ig/ml.
Storage & Stability	Upon receiving, this product remains stable for up to 6 months at lower than -70°C. Upon reconstitution, the product should be stable for up to 1 week at 4°C or up to 3 months at -20°C. For long term storage it is recommended that a carrier protein (example 0.1% BSA) be added. Avoid repeated freeze-thaw cycles.

Additional Information

Gene ID	941
Other Names	T-lymphocyte activation antigen CD80, Activation B7-1 antigen, BB1, CTLA-4 counter-receptor B7.1, B7, CD80, CD80, CD28LG, CD28LG1, LAB7
Target Background	B7-1/CD80 and B7-2/CD86, together with their receptors CD28 and CTLA-4, constitute one of the dominant co-stimulatory pathways that regulate T- and B-cell responses. Although both CTLA-4 and CD28 can bind to the same ligands, CTLA-4 binds to B7-1 and B7-2 with a 20-100 fold higher affinity than CD28 and is involved in the down-regulation of the immune response. Mature human B7-1 consists of a 208 amino acid extracellular domain (ECD) with two immunoglobulin-like domains, a 21 amino acid transmembrane domain, and a 25 amino acid cytoplasmic domain. Both human and mouse B7-1 and B7-2 can bind to either human or mouse CD28 and sCTLA-4. B7-1 is expressed on activated B cells, activated T cells, and macrophages. B7-2 is constitutively

expressed on interdigitating dendritic cells, Langerhans cells, peripheral blood dendritic cells, memory B cells, and germinal center B cells.

Protein Information

Name	CD80
Synonyms	CD28LG, CD28LG1, LAB7
Function	Costimulatory molecule that belongs to the immunoglobulin superfamily that plays an important role in T-lymphocyte activation (PubMed: <u>38467718</u>). Acts as the primary auxiliary signal augmenting the MHC/TCR signal in naive T-cells together with the CD28 receptor which is constitutively expressed on the cell surface of T-cells (PubMed: <u>12196291</u>). In turn, activates different signaling pathways such as NF-kappa-B or MAPK leading to the production of different cytokines (PubMed: <u>10438913</u>). In addition, CD28/CD80 costimulatory signal stimulates glucose metabolism and ATP synthesis of T-cells by activating the PI3K/Akt signaling pathway (PubMed: <u>12121659</u>). Also acts as a regulator of PDL1/PDCD1 interactions to limit excess engagement of PDL1 and its inhibitory role in immune responses (PubMed: <u>36727298</u>). Expressed on B-cells, plays a critical role in regulating interactions between B-cells and T-cells in both early and late germinal center responses (By similarity).
Cellular Location	Cell membrane; Single-pass type I membrane protein
Tissue Location	Expressed on activated B-cells, macrophages and dendritic cells

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.