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CD28

Catalog # PVGS1558

Product Information

Primary Accession	P10747
Species	Human
Sequence	Asn19-Pro152
Purity	> 97% as analyzed by SDS-PAGE
Endotoxin Level	
Biological Activity	Immobilized CD28, hFc, Human at 2.0 μg/ml (100 μl/well) can bind human Biotin-B7-1(CD80) Fc when detected by Streptavidin-HRP second antibody.
Expression System	HEK 293
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS.
Reconstitution	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_2O or PBS up to 100 μg/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	940
Other Names	T-cell-specific surface glycoprotein CD28, TP44, CD28, CD28
Target Background	Human CD28 is composed of four exons encoding a protein of 220 amino acids that is expressed on the cell surface as a glycosylated, disulfide-linked homodimer of 44 kDa. Members of the CD28 family share a number of common features. These receptors consist of paired V-set immunoglobulin superfamily (IgSF) domains attached to single transmembrane domains and cytoplasmic domains that contain critical signaling motifs. The CD28 and CTLA4 ligands, CD80 and CD86, consist of single V-set and C1-set IgSF domains. The interaction of these costimulatory receptors with ligands is mediated through the MYPPPY motif within the receptor V-set domains. CD28 is expressed constitutively on almost all human CD4 T cells and approximately 50% of CD8 T cells. CD28 costimulation has diverse effects on T cell function, including biochemical events at the immunological synapse, downstream phosphorylation and other post-translational modifications, transcriptional changes, and cytoskeletal remodeling. At the most basic level, CD28 signals

increase a cell's glycolytic rate, allowing cells to generate the energy necessary for growth and proliferation.

Protein Information

Name	CD28
Function	Receptor that plays a role in T-cell activation, proliferation, survival and the maintenance of immune homeostasis (PubMed:1650475, PubMed:7568038). Functions not only as an amplifier of TCR signals but delivers unique signals that control intracellular biochemical events that alter the gene expression program of T-cells (PubMed:24665965). Stimulation upon engagement of its cognate ligands CD80 or CD86 increases proliferation and expression of various cytokines in particular IL2 production in both CD4(+) and CD8(+) T-cell subsets (PubMed:1650475, PubMed:35397202). Mechanistically, ligation induces recruitment of protein kinase C-theta/PRKCQ and GRB2 leading to NF-kappa-B activation via both PI3K/Akt-dependent and -independent pathways (PubMed:21964608, PubMed:24665965, PubMed:7568038). In conjunction with TCR/CD3 ligation and CD40L costimulation, enhances the production of IL4 and IL10 in T-cells (PubMed:8617933).
Cellular Location	Cell membrane; Single-pass type I membrane protein
Tissue Location	Expressed in T-cells and plasma cells, but not in less mature B-cells