Active Recombinant Human CD28 protein, Fc/Avi-tagged, Biotinylated

Cat. No. CD28-051H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Biotinylated Recombinant Human CD28(Asn19-Pro152) protein, fused to Fc/Avi tag at the C-terminus, was expressed in CHO cells .
Species	Human
Source	CHO
ProteinLength	Asn19-Pro152
Description	CD28 is the founding member of a subfamily of structurally homologous costimulatory or immune checkpoint molecules of the immunoglobulin (Ig) superfamily. The CD28/B7 pathway has been shown to play a central role in immune responses against infection, autoimmune diseases, and graft rejection (1). CD28 subfamily members, including ICOS, CTLA4, PD1, PD1H, and BTLA, are characterized by a single Ig V-like extracellular domain (ECD), a transmembrane domain and an intracellular domain with highly conserved tyrosine-based signaling motifs (2). CD28 and ICOS predominately enhance T-cell activation, while CTLA-4, PD-1 and BTLA are inhibitory (1-3). The mature ECD of human CD28 shares 65% and 66% amino acid sequence identity with mouse and rat CD28, respectively. CD28 and CTLA-4, together with their ligands, B7-1 and B7-2, constitute one of the dominant co-stimulatory pathways that regulate T and B cell responses. CD28 is expressed on approximately 80% of CD4+ T cells and 50% of CD8+ T cells in humans, with the proportion of CD28-positive T cells declining with age (1-4). CD28 expression has

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	been identified on other cell lineages, including bone marrow stromal cells, plasma cells, neutrophils, and eosinophils (5). CD28 is expressed on the cell surface as a disulfide-linked homodimer and the covalent bond is required for maximum activity (6,7). 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. While, CD28 ligation is critical in promoting proliferation and effector function of conventional T cells, it also promotes the anti-inflammatory function of Treg cells. Thus, CD28 serves both pro- and anti-inflammatory roles depending on the cell type and context in which it is expressed (8). The CD28 pathway has effects both at amplifying signals initiated by the T cell receptor and on a variety of processes, including signaling, metabolism, transcription, epigenetic modifications, post-translational modifications, and RNA splicing (9).Our Avi-tag Biotinylated CD28 features biotinylation at a single site contained within the Avi-tag, a unique 15 amino acid peptide. Protein orientation will be uniform when bound to streptavidin-coated surface due to the precise control of biotinylation and the rest of the protein is unchanged so there is no interference in the protein's bioactivity.
Predicted N Terminal	Asn19
Form	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose.
Bio-activity	Measured by its binding ability in a functional ELISA. When Recombinant Human CD80 Fc Chimera Protein is immobilized at 10 g/mL (100 μ/well), the concentration of Biotinylated Recombinant CD28 Fc Chimera Avi-tag that produces a 50% optimal binding response is found to be 0.5-3 g/mL.
Molecular Mass	120-140 kDa, under non-reducing conditions
Endotoxin	<0.10 EU per 1 μg of the protein by the LAL method.

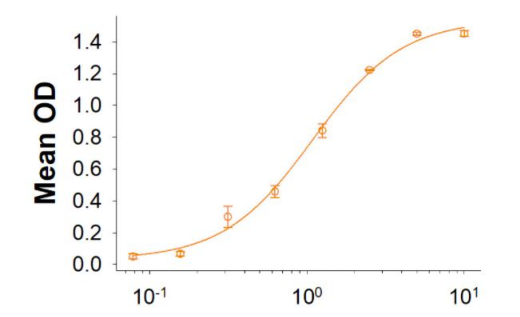
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Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Applications	Bioactivity
Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles.12 months from date of receipt, -20 to -70 °C as supplied.2 weeks, 2 to 8 °C under sterile conditions after reconstitution.3 months, -20 to -70 °C under sterile conditions after reconstitution.
Reconstitution	Reconstitute at 200 µg/mL in sterile deionized water.
Conjugation	Biotin

GENE INFORMATION

Gene Name	CD28 CD28 molecule [Homo sapiens]
Official Symbol	CD28
Synonyms	CD28; CD28 molecule; CD28 antigen (Tp44); CD28 antigen; Tp44; MGC138290;
Gene ID	940
mRNA Refseq	NM_001243077
Protein Refseq	NP_001230006
MIM	186760
UniProt ID	P10747

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Binding Activity	

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