



Recombinant Human CD28/Fc Chimera

20180507BB



FOR RESEARCH ONLY! NOT FOR HUMAN USE!

Cat.-no.:	S01-027
Size:	100 µg
Lot. No.:	According to product label

Scientific Background

Gene-ID (NCBI):	940
Synonyms:	soluble CD28 Fc, T-cell-specific surface glycoprotein CD28, TP44

CTLA-4 and CD28 are receptors of the immunoglobulin superfamily that are expressed, along with the transmembrane glycoproteins B7-1 and B7-2, by antigen-presenting cells, and with these ligands constitute crucial co-stimulatory pathways for T and B cell regulatory responses. It is through engagement with CD28 and CTLA-4 that the B7 family ligands B7-1 and B7-2 play principal roles in immunity by activating immune response and maintaining immune tolerance. Co-stimulatory signals generated by B7-1 and B7-2 interactions with CD28 serve to stimulate T cell activation and prevent anergy through the amplification of T cell receptor (TCR) signaling. In contrast, interactions of the ligands with CTLA-4 serves to maintain T cell homeostasis and self-tolerance through the disruption of stimulatory signaling from B7 isoform-bound CD28 complexes, and by inducing powerful inhibitory signals in T cells. CTLA-4, like B7-1, is only poorly expressed on resting dendritic cells; therefore, up-regulation of their interaction and resultant amplification and regulation of T cell activity at peripheral inflammation sites is considerably delayed upon immune activation. Conversely, B7-2 and CD28 are constitutively expressed by resting hematopoietic and T cells, respectively, and as a result are able to rapidly induce up-regulation upon immune activation, making them critical to the early co-stimulatory signaling of immune response. Unlike B7-1 and B7-2, the ligands PD-L1 (or B7-H1) and B7-H2, which also belong to the B7 family, have not been shown to influence immunity through interaction with CTLA-4. B7-H2 has been shown to have restricted interaction with CD28. The difference in expression of B7-1, B7-2 and B7-H2 may enable temporally and spatially-specific regulation of T cell response through non-competitive CD28 interaction. CHO cell-derived Recombinant Human sCD28 Fc is a glycosylated, disulfide-linked homodimer of 734 amino acid residues whose monomer consists of the 134-amino-acid length extracellular portion of CD28 fused to the 231-amino-acid length Fc portion of human IgG1 by two glycines. The calculated molecular weight of Recombinant Human sCD28 Fc dimer is 82.4 kDa; however, due to glycosylation, the monomer and dimer migrate at apparent molecular weights of approximately 60-70 kDa and 150-160 kDa by SDS-PAGE analysis under reducing conditions.

Sequence

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NKILVKQSPM LVAYDNAVNL SCKYSYNLFS REFRASLHKG
LDSAVEVCVV YGNYSQQLQV YSKTGFNCDG KLGNESVTFY
LQNLVYNQTD IYFCKIEVMY PPPYLDNEKS NGTIIHVKGK
HLCPSPLFPG PSKPGGPKSC DKTHTCPCP APPELLGGPSV
FLFPPKPKDT LMISRTPEVT CVVVDVSHED PEVKFNWYVD
GVEVHNAKTK PREEQYNSTY RVVSVLTVLH QDWLNGKEYK
CKVSNKALPA PIEKTISKAK GQPREPQVYV LPPSRDELTK
NQVSLTCLVK GFYPSDIAVE WESNGQPENN YKTTTPVLDL
DGSFFFLYSLK TVDKSRWQQG NVFSCSVMHE ALHNNHYTQKS LSLSPGK
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Database References

Protein RefSeq:	NP_006130.1
Uniprot ID:	P10747
mRNA RefSeq:	NM_006139.3

Product Specifications

Expressed in	CHO cells
Purity	> 95% by SDS-PAGE & HPLC analyses
Endotoxin level	< 0.1 ng/µg of protein (<1EU/µg).
Formulation	lyophilized
Length (aa):	367 (monomer)
MW:	60-70 kDa (reducing conditions)

Stability: The lyophilized protein is stable at room temperature for 1 month and at 4°C for 3 months. Reconstituted working aliquots are stable for 1 week at 2°C to 8°C and for 3 months at -20°C to -80°C.

Reconstitution: Centrifuge the vial prior to opening. Reconstitute in water to a concentration of 0.1-1.0 mg/ml. *Do not vortex.* This solution can be stored at 2-8°C for up to 1 week. For extended storage, it is recommended to further dilute in a buffer containing a carrier protein (example 0.1% BSA) and store in working aliquots at -20°C to -80°C.



AVOID REPEATED FREEZE AND THAW CYCLES!

Biological Activity: Determined by its ability to bind its principal binding partner (B7-1) in a functional ELISA.