



Recombinant Human B7-1/Fc Chimera

20180507BB



FOR RESEARCH ONLY! NOT FOR HUMAN USE!

Cat.-no.:	S01-006
Size:	100 µg
Lot. No.:	According to product label

Scientific Background

Gene-ID (NCBI):	941
Synonyms:	B7, BB1, CD80

B7-1 and B7-2 are transmembrane glycoproteins of the immunoglobulin superfamily that are expressed, along with the receptors CD28 and CTLA4, by antigen-presenting cells, and along with these receptors, constitute crucial co-stimulatory pathways for T and B cell regulatory responses. As members of the B7 family, B7-1 and B7-2 play principal roles in immunity, activating immune response and maintaining immune tolerance through engagement with CD28 and CTLA4. 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. B7-1 plays an important role in immune response through its amplification and regulation of T cell activity at peripheral inflammation sites. B7-1, like CTLA-4, is, however, only poorly expressed on resting dendritic cells, and its up-regulation is, therefore, 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. Both B7-1 and B7-2 have been shown to demonstrate co-stimulatory activity in T-cell proliferation in vitro and elicit enhanced antitumor immune response in vivo. Recombinant Human B7-1Fc is a homodimeric B7-1 fusion protein, whose monomer contains a total of 441 amino acid residues, consisting of 211 amino acid residues corresponding to the extracellular domain of human B7-1, fused to the Fc portion of human IgG1. The calculated molecular weight of the B7-1 Fc monomer is 50.0 kDa.

Sequence

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VIHVTKEVKE VATLSCGHNV SVEELAQTRI YWQKEKKMVL
TMMSGDMNIW PEYKNRTIFD ITNNLSIVIL ALRPSDEGTY
ECVVLKYEKD AFKREHLAEV TLSVKADFPT PSISDFEIPT
SNIRRIICST SGGFPEPHLS WLENGEELNA INTTVSQDPE
TELYAVSSKL DFNMTTNHSF MCLIKYGHRL VNQTFNWNNT
KQEHFPDNGG PKSCDKTHTC PPCPAPELLG GPSVFLFPPK
PKDTLMISRT PEVTCVVVDV SHEDPEVKFN WYVDGVEVHN
AKTKPREEQY NSTYRVVSVL TVLHQDWLNG KEYKCKVSNK
ALPAPIEKTI SKAKGQPREP QVYTLPPSRD ELTKNQVSLT
CLVKGFPYPSD IAVEWESNGQ PENNYKTTPP VLDSGDSFLL
YSKLTVDKSR WQQGNVFCSS VMHEALHNNH YQKLSLSLSPG K

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Database References

Protein RefSeq:	NP_005182.1
Uniprot ID:	P33681
mRNA RefSeq:	NM_005191.3

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):	211
MW:	54.0 kDa



AVOID REPEATED FREEZE AND THAW CYCLES!

Biological Activity: Determined by its ability to inhibit alkaline phosphatase activity in differentiating MC3T3/E1 cells. The expected ED₅₀ for this effect is 0.5-1.5 µg/ml.