

PRODUCT INFORMATION



B7-1/CD80 Long Isoform Extracellular Domain (human, recombinant; His-tagged)

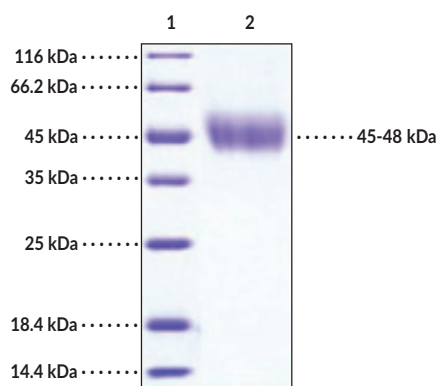
Item No. 32013

Overview and Properties

Synonyms: B7-1, B7.1
Source: Active recombinant human C-terminal His-tagged CD80 expressed in HEK293 cells
Amino Acids: 35-242
Molecular Weight: 25.4 kDa
Storage: -80°C (as supplied)
Stability: ≥1 year
Purity: ≥95% estimated by SDS-PAGE
Supplied in: Lyophilized from sterile PBS, pH 7.4
Endotoxin Testing: <1.0 EU/μg, determined by the LAL endotoxin assay

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Markers

Lane 2: CD80 Long Isoform Extracellular Domain

SDS-PAGE Analysis of CD80 Long Isoform Extracellular Domain. This protein has a calculated molecular weight of 25.4 kDa. It has an apparent molecular weight of approximately 45-48 kDa by SDS-PAGE under reducing conditions due to glycosylation.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

CD80, also known as B7-1, is a glycoprotein and member of the CD28/B7 family of co-stimulatory receptors that promotes T cell activation.^{1,2} Alternative splicing of CD80 produces one full-length long isoform, CD80 long, and two short isoforms, s1CD80 and s2CD80.² CD80 long exists as a membrane-bound dimer and is composed of an extracellular immunoglobulin variable (IgV) domain that interacts with the co-stimulatory molecule CD28 or the inhibitory molecule CTLA-4, as well as an immunoglobulin constant (IgC) domain and a cytoplasmic tail that are both required for T cell co-stimulation.¹ s1CD80 and s2CD80 lack the transmembrane domain or the transmembrane domain and the IgC domain, respectively, and are found in the serum.² CD80 is transiently expressed on the surface of antigen-presenting cells (APCs) and is upregulated following ligation of the co-stimulatory molecule CD86, as well as by pro-inflammatory stimuli, such as LPS, and downregulated by the anti-inflammatory cytokine IL-10.³⁻⁵ CD80 has two ligands, CD28 and CTLA-4, that compete for binding and are each expressed on naïve T cells but have opposing functions on T cell activation.⁶ CD80 binding to CD28 promotes T cell activation, survival, and cytokine production, whereas CD80 binding to CTLA-4 inhibits T cell activation and promotes T cell anergy. Neutralization of CD80 with a monoclonal antibody reduces the severity of synovitis and bone erosion, as well as CD4⁺ T cell infiltration, in the inflamed joints of a mouse model of arthritis induced by complete Freund's adjuvant (CFA) and BSA.⁷ Decreased CD80 tumor levels have been identified in patients with renal cell carcinoma.⁸ CD80 SNPs have been found in individuals with gastric cancer.⁹ Cayman's CD80 Long Isoform Extracellular Domain (human, recombinant) protein can be used for binding assay applications. This protein consists of 219 amino acids, has a calculated molecular weight of 25.4 kDa, and a predicted N-terminus of Val35 after signal peptide cleavage. By SDS-PAGE, under reducing conditions, the apparent molecular mass of Cayman's CD80 Long Isoform Extracellular Domain (human, recombinant) protein is approximately 45 to 48 kDa due to glycosylation.

References

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