

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived human B7-1/CD80 protein		
	Human B7-1/CD80 (Val35-Asn242) Accession # P33681.1	IEGRMD	Human IgG ₁ (Pro100-Lys330)
	N-terminus		C-terminus
N-terminal Sequence Analysis	Val35		
Structure / Form	Disulfide-linked homodimer Labeled with Alexa Fluor® 647 Excitation Wavelength: 650 nm Emission Wavelength: 668 nm		
Predicted Molecular Mass	50.5 kDa		

SPECIFICATIONS

SDS-PAGE	66-80 kDa, under reducing conditions.
Activity	Measured by flow cytometry for its ability to bind anti-human B7-1 Monoclonal Antibody conjugated beads. The concentration of Recombinant Human B7-1 Fc-tag Alexa Fluor® 647 (Catalog # AFR10133) that produces 50% of the binding response is 2.00-20.0 ng/mL.
Endotoxin Level	<1.0 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Supplied as a 0.2 µm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Shipping	The product is shipped with dry ice or equivalent. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> • 6 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after opening. • 3 months, -20 to -70 °C under sterile conditions after opening.

DATA

<p>Flow Cytometry</p> <p>Unstained 6.173 ng/mL 18.52 ng/mL 55.55 ng/mL 166.7 ng/mL 500.0 ng/mL</p>	<p>Flow cytometry analysis for Recombinant Human B7-1/CD80 Fc-tag Alexa Fluor® 647 staining on Human B7-1/CD80 Monoclonal Antibody conjugated beads. Streptavidin coated beads conjugated to biotinylated Human B7-1/CD80 (Catalog # BAM1402) were stained with the indicated concentrations of Recombinant Human B7-1/CD80 Fc-tag Alexa Fluor® 647 Protein (Catalog # AFR10133).</p>	<p>SDS-PAGE</p> <p>Recombinant Human B7-1/CD80 Fc Chimera Alexa Fluor® 647 Protein SDS-PAGE. 2 µg/lane of Recombinant Human B7-1/CD80 Fc Chimera Alexa Fluor® 647 Protein (Catalog # AFR10133) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 66-80 kDa and 130-160 kDa, respectively.</p>
---	--	---

BACKGROUND

B7-1/CD80 and B7-2/CD86, together with their receptors CD28 and CTLA-4, constitute one of the dominant co-stimulatory pathways that regulate T- and B-cell responses (1). 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 and is involved in the down-regulation of the immune response (2-6). Mature human B7-1 consists of a 208 amino acid (aa) extracellular domain (ECD) with two immunoglobulin-like domains, a 21 aa transmembrane domain, and a 25 aa cytoplasmic domain (7). Within the ECD, human B7-1 shares 50% aa sequence identity with mouse B7-1. Alternative splicing generates a 30 kDa soluble isoform that lacks the transmembrane segment and retains the ability to bind CD28 and CTLA-4 and an isoform that lacks the second Ig-like domain and the transmembrane segment (8). Both human and mouse B7-1 and B7-2 can bind to either human or mouse CD28 and CTLA-4 (1). B7-1 is expressed on activated B cells, activated T cells, and macrophages. B7-2 is constitutively expressed on interdigitating dendritic cells, Langerhans cells, peripheral blood dendritic cells, memory B cells, and germinal center B cells (2).

References:

1. Ville, S. *et al.* (2015) *Front. Immunol.* **6**:411.
2. Azuma, M. *et al.* (1993) *Nature* **366**:76.
3. Freeman, G.J. *et al.* (1993) *Science* **262**:909.
4. Chen, C. *et al.* (1994) *J. Immunol.* **152**:4929.
5. Freeman, G.J. *et al.* (1993) *J. Exp. Med.* **178**:2185.
6. Lanier, L. *et al.* (1995) *J. Immunol.* **154**:97.
7. Freeman, G.J. *et al.* (1989) *J. Immunol.* **143**:2714.
8. Kakoulidou, M. *et al.* (2007) *Scand. J. Immunol.* **66**:529.

PRODUCT SPECIFIC NOTICES

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc. and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose. Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.