

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived human B7-1/CD80 protein		
	Human B7-1/CD80 (Val35-Asn242) Accession # P33681	IEGRMD	Human IgG ₁ (Pro100-Lys330)
	N-terminus		C-terminus
N-terminal Sequence	Val35		
Analysis			
Structure / Form	Disulfide-linked homodimer		
Predicted Molecular Mass	50.5 kDa		

SPECIFICATIONS

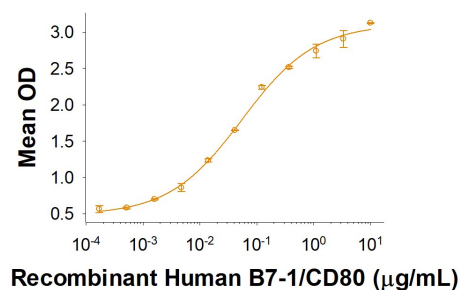
SDS-PAGE	66-80 kDa, under reducing conditions
Activity	Measured by its ability to induce IL-2 secretion by Jurkat human acute T cell leukemia cells. Freeman, G.J. <i>et al.</i> (1993) <i>Science</i> 262 :909. The ED ₅₀ for this effect is 0.025-0.15 µg/mL in the presence of PHA.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

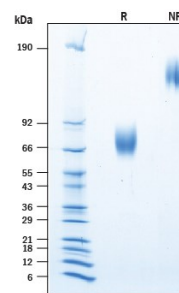
DATA

Bioactivity



Recombinant Human B7-1/CD80 Fc Chimera (Catalog # 10133-B1) induces IL-2 secretion by Jurkat human acute T cell leukemia cells in the presence of PHA. The ED₅₀ for this effect is 0.025-0.15 µg/mL.

SDS-PAGE



2 µg/lane of Recombinant Human B7-1/CD80 Fc Chimera (Catalog # 10133-B1) 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.

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.