

**DESCRIPTION**

<b>Source</b>	Mouse myeloma cell line, NS0-derived human B7-1/CD80 protein		
	Human B7-1 (Val35-Asn242) Accession # P33681-1	IEGRMD	Human IgG <sub>1</sub> (Pro100-Lys330)
	N-terminus		C-terminus
<b>N-terminal Sequence Analysis</b>	Val35		
<b>Structure / Form</b>	Disulfide-linked homodimer		
<b>Predicted Molecular Mass</b>	50 kDa		

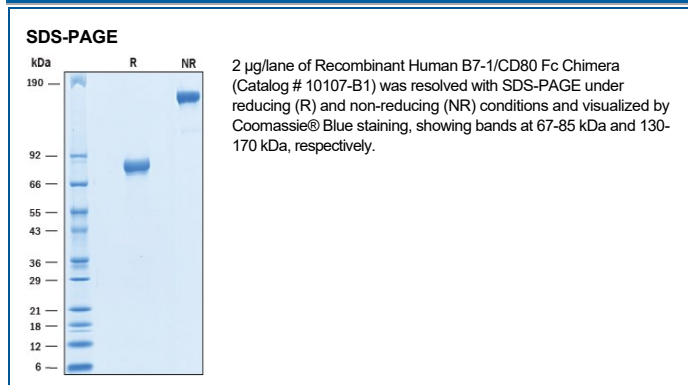
**SPECIFICATIONS**

<b>SDS-PAGE</b>	67-85 kDa, reducing conditions
<b>Activity</b>	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> <b>262</b> :909. The ED <sub>50</sub> for this effect is 0.4-2 µg/mL in the presence of PHA.
<b>Endotoxin Level</b>	<0.10 EU per 1 µg of the protein by the LAL method.
<b>Purity</b>	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

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

**DATA**



**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.