

**DESCRIPTION**

<b>Source</b>	Chinese Hamster Ovary cell line, CHO-derived		
	Human B7-2/CD86 (Leu20-His239) Accession # NP_008820	DIEGRMD	Human IgG <sub>1</sub> (Pro100-Lys330)
	N-terminus		C-terminus

<b>N-terminal Sequence Analysis</b>	Leu20
<b>Structure / Form</b>	Disulfide-linked homodimer
<b>Predicted Molecular Mass</b>	52 kDa (monomer)

**SPECIFICATIONS**

<b>SDS-PAGE</b>	75-100 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 0.04-0.2 µg/mL.
<b>Endotoxin Level</b>	<0.10 EU per 1 µg of the protein by the LAL method.
<b>Purity</b>	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 100 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>

**BACKGROUND**

B7-2, also known as CD86, B70, and ETC-1, is a 60-100 kDa variably glycosylated protein in the B7 family. B7 family members are transmembrane cell surface molecules that play important roles in immune activation and the maintenance of immune tolerance (1, 2). Mature human B7-2 consists of a 224 amino acid (aa) extracellular domain (ECD) with two Ig-like domains, a 21 aa transmembrane segment, and a 61 aa cytoplasmic tail (3, 4). Within the ECD, human B7-2 shares 59% aa sequence identity with mouse and rat B7-2. Alternative splicing of human B7-2 generates additional isoforms that lack both Ig-like domains or a region that includes the transmembrane segment. B7-2 is highly expressed on activated antigen presenting cells (APC), e.g. B cells, dendritic cells, and monocytes (4-7), as well as on vascular endothelial cells (8). B7-2 and the closely related B7-1/CD80 exhibit overlapping but distinct functional properties. Their binding to CD28, which is constitutively expressed on T cells, enhances T cell receptor signaling and also provides TCR-independent co-stimulation (3-5, 7, 9-11). B7-1 and B7-2 additionally bind the CD28-related protein, CTLA-4, which is up-regulated and recruited to the immunological synapse (IS) at the onset of T cell activation (3-5, 7, 9, 10). CTLA-4 ligation inhibits the T cell response and supports regulatory T cell function (12). B7-2 is expressed earlier than B7-1 following APC activation (6), and both proteins bind with higher affinity to CTLA-4 than to CD28 (10). B7-2 promotes the stabilization of CD28 in the IS, while B7-1 is primarily responsible for promoting CTLA-4 recruitment and accumulation in the IS (13). The relative participation of B7-1 and B7-2 in T cell co-stimulation can also alter the Th1/Th2 bias of the immune response (14). Both B7-1 and B7-2 serve as cellular receptors for B species adenoviruses (15).

**References:**

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