

**DESCRIPTION**

<b>Source</b>	Mouse myeloma cell line, NS0-derived human B7-H2 protein		
	Human B7-H2 (Asp19-Ser258) Accession # O75144	DIEGRMD	Human IgG <sub>1</sub> (Pro100-Lys330)
	N-terminus		C-terminus
<b>N-terminal Sequence Analysis</b>	Asp19		
<b>Structure / Form</b>	Disulfide-linked homodimer		
<b>Predicted Molecular Mass</b>	53.4 kDa (monomer)		

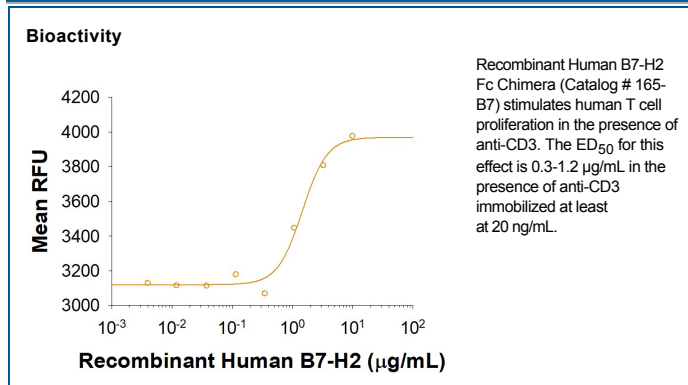
**SPECIFICATIONS**

<b>SDS-PAGE</b>	80-90 kDa, reducing conditions
<b>Activity</b>	Measured by its ability to stimulate human T cell proliferation in the presence of anti-CD3. Wang, S. <i>et al.</i> (2000) <i>Blood</i> <b>96</b> :2808. The ED <sub>50</sub> for this effect is 0.3-1.2 µg/mL in the presence of anti-CD3 immobilized at least at 20 ng/mL. <b>Optimal dilutions should be determined by each laboratory for each application.</b>
<b>Endotoxin Level</b>	<0.01 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. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 100 µg/mL in sterile 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-H2, also known as B7-related protein (B7RP1), ICOS Ligand, and CD275, is an approximately 60 kDa transmembrane glycoprotein in the B7 family of immune regulatory molecules (1). Mature human B7-H2 consists of a 238 amino acid (aa) extracellular domain (ECD) with two immunoglobulin-like domains, a 21 aa transmembrane segment, and a 25 aa cytoplasmic domain (2, 3). Within the ECD, human B7-H2 shares 50% and 54% aa sequence identity with mouse and rat B7-H2, respectively. Alternative splicing generates a long isoform that carries a 10 aa substitution for the C-terminal 3 residues. B7-H2 is expressed on antigen presenting cells such as B cells, macrophages, monocytes, and dendritic cells (2-6). It binds to ICOS on activated T cells, leading to both positive and negative effects on immune responses including its own down-regulation (2, 4, 7). Mouse and human B7-H2 exhibit cross-species binding to ICOS (3, 6). The B7-H2 interaction with ICOS is costimulatory for T cell proliferation as well as the development of B cells, plasma cells, follicular helper T cells (T<sup>FH</sup>) and germinal centers (2-4, 8, 9). In human but not in mouse, B7-H2 additionally binds to CD28 and CTLA4, and its interaction with CD28 can costimulate both human and mouse naïve T cells and regulatory T cells (Treg) (6). B7-H2 contributes to the development of allergic asthma by enhancing Th2 biased immune responses, limiting Th17 responses, and promoting eosinophilic infiltration into the lung (8, 10, 11). Its activation of ICOS on Treg limits pulmonary inflammation and airway hyperresponsiveness, promotes the development of inhalational tolerance, and impairs anti-tumor immunity (5, 12, 13). In contrast, its ligation of ICOS on T<sup>FH</sup> cells can increase the severity of autoimmune symptoms (9). A soluble form of human B7-H2 is elevated in the circulation of patients with active systemic lupus erythematosus (14). In the thyroid, B7-H2 is up-regulated on thyrocytes during inflammation and promotes their proliferation and production of thyroid hormones (15).

**References:**

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