

**DESCRIPTION**

**Source** Human embryonic kidney cell, HEK293-derived  
Asp19-Ser258, with a C-terminal 6-His tag  
Accession # O75144

**N-terminal Sequence Analysis** Asp19

**Predicted Molecular Mass** 28 kDa

**SPECIFICATIONS**

**SDS-PAGE** 59-64 kDa, reducing conditions

**Activity** Measured by its ability to co-stimulate IL-4 secretion by D10.G4.1 mouse helper T cells in the presence of anti-CD3.  
The ED<sub>50</sub> for this effect is typically 0.3-1.5 µg/mL.

Measured by its ability to stimulate human T cell proliferation in the presence of anti-CD3. Wang, S. *et al.* (2000) *Blood* **96**:2808.  
The ED<sub>50</sub> for this effect is typically 0.3-1.2 µg/mL.

**Endotoxin Level** <0.10 EU per 1 µg of the protein by the LAL method.

**Purity** >95%, by SDS-PAGE with silver staining.

**Formulation** Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

**Reconstitution** Reconstitute at 200 µg/mL in sterile PBS.

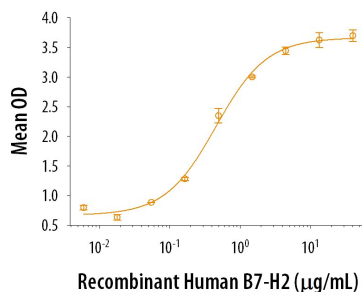
**Shipping** The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

**Stability & Storage** Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 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.

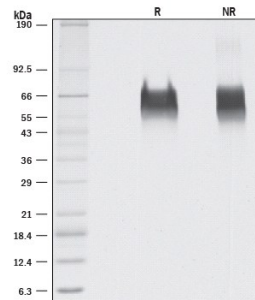
**DATA**

**Bioactivity**



**B7-H2 Co-stimulates IL-4 Secretion.** Recombinant Human B7-H2 co-stimulates IL-4 secretion by D10.G4.1 mouse helper T cells in the presence of anti-CD3. The ED<sub>50</sub> for this effect is typically 0.3-1.5 µg/mL.

**SDS-PAGE**



1 µg/lane of Recombinant Human B7-H2 (Catalog # 8206-B7) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by silver staining, showing bands at 64.3 and 64.4 kDa, respectively.

**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 co-stimulatory for T cell proliferation as well as the development of B cells, plasma cells, follicular helper T cells (Tfh) 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 co-stimulate 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 Tfh 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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