Recombinant Mouse B7-H2

Catalog Number: 8127-B7

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived Glu47-Lys279, with a C-terminal 6-His tag Accession # Q9JHJ8
N-terminal Sequence Analysis	Glu47
Predicted Molecular Mass	27 kDa

SPECIFICATIONS

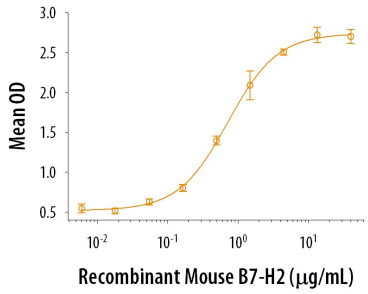
SDS-PAGE	50-70 kDa, reducing conditions
Activity	Measured by its ability to co-stimulate IL-4 secretion by D10.G4.1 mouse helper T cells in the presence of anti-CD3. The ED_{50} for this effect is typically 0.3-1.5 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 200 µg/mL in 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



Recombinant Mouse B7-H2 co-stimulates IL-4 secretion by D10.G4.1 mouse helper T cells in the presence of anti-CD3. The ED_{50} for this effect is typically 0.3-1.5 µg/mL.

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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 mouse B7-H2 consists of a 231 amino acid (aa) extracellular domain (ECD) with two immunoglobulin-like domains, a 21 aa transmembrane segment, and a 24 aa cytoplasmic domain (2). Within the ECD, mouse B7-H2 shares 50% and 71% aa sequence identity with human and rat B7-H2, respectively. Alternative splicing generates a long isoform that carries a 27 aa substitution for the C-terminal 2 residues. B7-H2 is expressed on antigen presenting cells such as B cells, macrophages, monocytes, and dendritic cells (3-6). It binds to ICOS on activated T cells, leading to both positive and negative effects on immune responses including its own down-regulation (3, 4, 8). Mouse and human B7-H2 exhibit cross-species binding to ICOS (5, 7). 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_{FH}) and germinal centers (3-5, 9, 10). 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) (7). 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 (9, 11, 12). Its activation of ICOS on Treg limits pulmonary inflammation and airway hyperresponsiveness, promotes the development of inhalational tolerance, and impairs anti-tumor immunity (6, 13, 14). In contrast, its ligation of ICOS on T_{FH} cells can increase the severity of autoimmune symptoms (10). A soluble form of human B7-H2 is elevated in the circulation of patients with active systemic lupus erythematosus (15). In the thyroid, B7-H2 is up-regulated on thyrocytes during inflammation and promotes their proliferation and production of thryoid hormones (16).

References:

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