Biotinylated Recombinant Human B7-H2 Fc Chimera Avi-tag

Catalog Number: AVI165

DESCRIPTION

Source

Chinese Hamster Ovary cell line, CHO-derived human B7-H2 protein

Human B7-H2 (Asp19-Ser258) Accession # O75144.2	DIEGRMD	Human IgG_1 (Pro100-Lys330)	Avi-tag

N-terminus C-terminus

N-terminal Sequence Analysis	Asp19
Structure / Form	Disulfide-linked homodimer, biotinylated via Avi-tag
Predicted Molecular Mass	55 kDa

SPECIFICATIONS

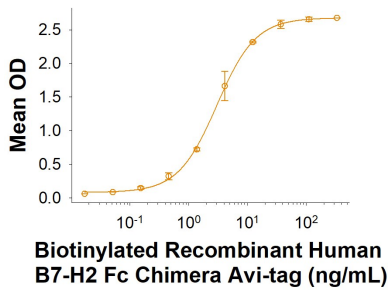
SDS-PAGE	80-100 kDa, under reducing conditions
Activity	The biotin to protein ratio is 0.7 as determined by the HABA assay. Measured by its binding ability in a functional ELISA. When Recombinant Human ICOS Fc Chimera Protein (Catalog # 169-CS) is immobilized at 0.5 µg/mL (100 µL/ well), Biotinylated Recombinant Human B7-H2 Fc Chimera Avi-tag (Catalog # AVI165) that produces a 50% optimal binding response is found to be 1-6 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 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

Binding Activity



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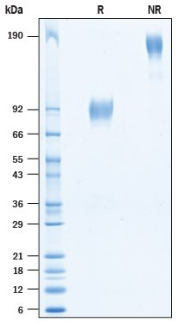
N/A



2 µg/lane of Recombinant Human B7-H2 Fc Chimera Avi-tag Protein (Catalog # AVI165) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 80-100 kDa and 160-200 kDa, respectively.

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BACKGROUND

B7-H2, also known as B7-related protein (B7RP1), ICOS Ligand, and CD275, is transmembrane glycoprotein in the B7 family of immune regulatory molecules (1). Mature human B7-H2 consists of an extracellular domain (ECD) with two immunoglobulin-like domains, a transmembrane segment, and a short cytoplasmic domain (2, 3). Alternative splicing generates a long isoform that carries a 10 amino acid (aa) substitution for the C-terminal 3 residues. Within the ECD, human B7-H2 shares 50% and 54% aa sequence identity with mouse and rat B7-H2, respectively. 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 thryoid hormones (15). Our Avi-tag Biotinylated Recombinant Human B7-H2 features biotinylation at a single site contained within the Avi-tag, a unique 15 amino acid peptide. Protein orientation will be uniform when bound to streptavidin-coated surface due to the precise control of biotinylation and the rest of the protein is unchanged so there is no interference in the protein's bioactivity.

References:

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