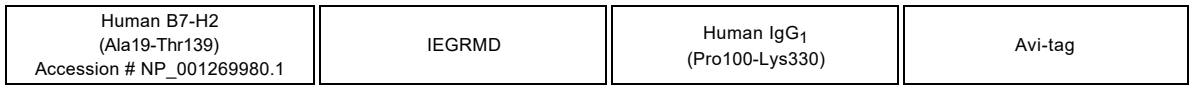
Biotinylated Recombinant Human B7-H2 Isoform 3 Fc Chimera Avi-tag

Catalog Number: AVI10028

DESCRIPTION

Source

Human embryonic kidney cell, HEK293-derived human B7-H2 protein



N-terminal Sequence Analysis	Ala19
Structure / Form	Disulfide-linked homodimer, biotinylated via Avi-tag
Predicted Molecular Mass	42 kDa

SPECIFICATIONS

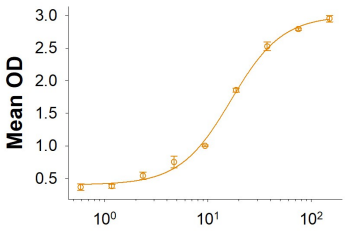
SDS-PAGE	61-70 kDa, under reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Human ICOS Fc Chimera (Catalog # 169-CS) is immobilized at 10 µg/mL, 100 µL/well, the concentration of Biotinylated Recombinant B7-H2 Isoform 3 Fc Chimera Avi-tag (Catalog # AVI10028) that produces 50% of the optimal binding response is approximately 10-50 µg/mL.
Endotoxin Level	<1.0 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 400 µg/mL in PBS.
Shipping	The product is shipped with polar packs. 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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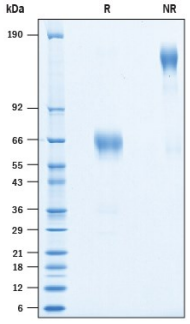
SDS-PAGE



2 µg/lane of Biotinylated Recombinant Human B7-H2 Isoform 3 Fc Chimera Avi-tag (Catalog # AVI10028) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 61-70 kDa and 120-140 kDa.

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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 human B7-H2 consists of a 238 amino acid (aa) extracellular domain (ECD) with two immunoglobulin-like (Ig-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 (Isoform 2), which carries a 10 aa substitution for the C-terminal 3 residues, and a short isoform (Isoform 3; this product), which lacks the first Ig-like domain (aa 18 - 134 is missing) . 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^{FH}) 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^{FH} 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).

References:

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