Recombinant Rat B7-H2

Catalog Number: 9938-B7

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived rat B7-H2 protein Glu23-Lys261, with a C-Terminal 6-His tag Accession # XP_006256322
N-terminal Sequence Analysis	Glu25
Predicted Molecular Mass	28 kDa

SPECIFICATIONS

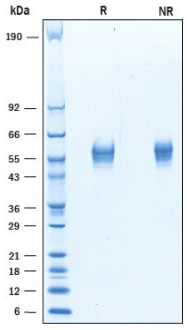
SDS-PAGE	47-62 kDa, reducing conditions
Activity	Measured by its ability to co-stimulate IL-4 secretion by D10.G4.1 mouse helper T cells in the presence of anti-CD3. The ED_{50} for this effect is 0.3-1.5 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in PBS.
Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	• 12 months from date of receipt, ≤ -20 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, ≤ -20 °C under sterile conditions after reconstitution.

DATA

SDS-PAGE



2 µg/lane of Recombinant Rat B7-H2 was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® blue staining, showing bands at 47-62 kDa.

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Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
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BACKGROUND

B7-H2, also known as B7-related protein 1 (B7RP1), ICOS Ligand, and CD275, is an approximately 60 kDa type I transmembrane glycoprotein in the B7 family of immune regulatory molecules (1). Within the extracellular domain, rat B7-H2 shares 70% and 54% amino acid (aa) sequence identity with mouse and human B7-H2, respectively. Alternative splicing generates a long isoform that carries a 10 aa substitution for the 3 C-terminal residues in humans and a 27 aa substitution for the 2 C-terminal residues in mouse. B7-H2 is expressed on antigen presenting cells such as B cells, macrophages, monocytes, and dendritic cells (2-6). B7-H2 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). Rat 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). B7-H2 and ICOS are also expressed on ILC2 cells. B7-H2/ICOS interaction promoted cytokine production and survival in ILC2 cells through STAT5, suggesting that B7-H2/ICOS signaling pathway is critically involved in ILC2 function and homeostasis (16).

References:

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