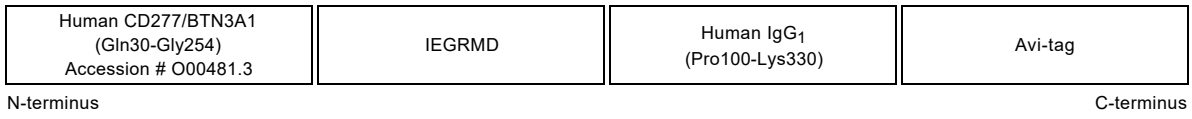
Biotinylated Recombinant Human CD277/BTN3A1 Fc Chimera Avi-tag

Catalog Number: AVI8539

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived human CD277/BTN3A1 protein



N-terminal Sequence Analysis	Gln30 inferred from enzymatic pyroglutamate treatment revealing Phe31
Structure / Form	Disulfide-linked homodimer Biotinylated via Avi-tag
Predicted Molecular Mass	53 kDa

SPECIFICATIONS

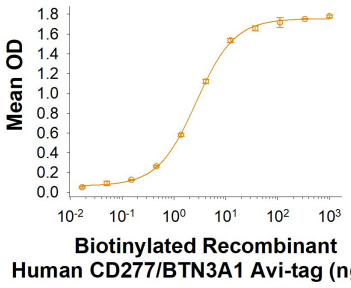
SDS-PAGE	57-65 kDa, under reducing conditions.
Activity	Measured by its binding ability in a functional ELISA. Biotinylated Recombinant Human CD277/BTN3A1 Fc Chimera Avi-tag binds to Human BTN3A1/2/3 Antibody (Catalog # MAB7136) with an ED_{50} of 0.500-5.00 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of 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.

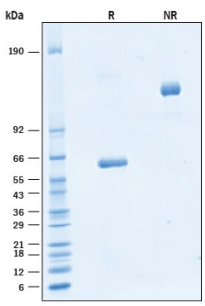
DATA

Binding Activity



Biotinylated Recombinant Human CD277/BTN3A1 Fc Chimera Avi-tag Protein Binding Activity. Measured by its binding ability in a functional ELISA. Biotinylated Recombinant Human CD277/BTN3A1 Fc Chimera Avi-tag Protein (Catalog # AVI8539) binds to Human BTN3A1/2/3 Antibody (Catalog # MAB7136) with an ED_{50} of 0.500-5.00 ng/mL.

SDS-PAGE



Biotinylated Recombinant Human CD277/BTN3A1 Fc Chimera Avi-tag Protein SDS-PAGE. 2 µg/lane of Biotinylated Recombinant Human CD277/BTN3A1 Fc Chimera Avi-tag Protein (Catalog # AVI8539) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 57-65 kDa and 110-130 kDa, respectively.

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BACKGROUND

Butyrophilin 3A1 (also called BTN3A1) is a 57 kDa type I transmembrane glycoprotein member of the Ig superfamily. It is expressed on a wide variety of immune cells. Similar to BTN3A2 and BTN3A3, BTN3A1 (484 amino acids) is composed of an extracellular N-terminal IgV and a membrane-proximal IgC domain followed by a transmembrane domain and a cytoplasmic tail. These Ig domains are also found in B7 family co-stimulatory molecules, suggesting structural and functional similarities between the two protein families (1). The intracellular portion of BTN3A1 contains a B30.2 domain (2). Although the B30.2 domain of BTN1A1 binds to xanthine oxidoreductase (XOR) and is conserved among BTN1A1 orthologs, this interaction with XOR is not shared by BTN3A1 (3). The B30.2 domain of butyrophilins also functions as a sensor for detecting changes in intracellular phopho-antigen (pAg) concentrations produced during tumorigenesis and microbial infections (4, 5). The specific binding of pAg by the B30.2 domain of BTN3A1 induces a conformational change in its ECD, leading to the activation of Vγ9Vδ2 T cells (6). Thus, BTN3A1 acts as a critical protein for the activation of Vγ9Vδ2 T cells following detection of distressed cells (7). The anti-tumor responses of Vγ9Vδ2 T cells may be enhanced with agonistic anti-BTNA3 antibodies (8). No BTN3A1 homolog has yet been identified in rodents. However, Human BTN3A1 shares 92.4% and 91.6% sequence identity with baboon and rhesus monkey BTN3A1 respectively (9). Our Avi-tag Biotinylated human BTN3A1 Fc chimera 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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