

#### DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived human BTN2A1 protein			
	Human BTN2A1 (Gln29-Ala248) Accession # Q7KYR7.3	IEGRMD	Human IgG1 (Pro100-Lys330)	Avi-tag
	N-terminus		C-terminus	
N-terminal Sequence Analysis	Protein identify confirmed by mass spectrometry.			
Structure / Form	Disulfide-linked homodimer. Biotinylated via Avi-tag.			
Predicted Molecular Mass	53 kDa			

#### SPECIFICATIONS

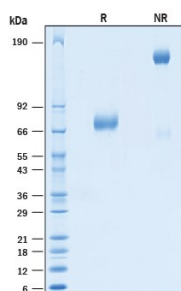
<b>SDS-PAGE</b>	65-80 kDa, under reducing conditions.
<b>Activity</b>	Measured by its binding ability in a functional ELISA. When Recombinant Human CD277/BTN3A1 Fc Chimera Protein (Catalog # 8539-BT) is immobilized at 10.0 µg/mL, 100 µL/well, the concentration of Biotinylated Recombinant Human BTN2A1 Fc Chimera Avi-tag (Catalog #AV110909) that produces 50% of the binding response is 1.00-6.00 µg/mL.
<b>Endotoxin Level</b>	<0.10 EU per 1 µg of the protein by the LAL method.
<b>Purity</b>	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
<b>Formulation</b>	Supplied as a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

#### PREPARATION AND STORAGE

<b>Shipping</b>	The product is shipped with dry ice or equivalent. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<p><b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b></p> <ul style="list-style-type: none"> <li>• 6 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after opening.</li> <li>• 3 months, -20 to -70 °C under sterile conditions after opening.</li> </ul>

#### DATA

##### SDS-PAGE



**Biotinylated Recombinant Human BTN2A1 Fc Chimera Avi-tag Protein SDS-PAGE.** 2 µg/lane of Biotinylated Recombinant Human BTN2A1 Fc Chimera Avi-tag Protein (Catalog # AV110909) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 65-80 kDa to 130-160 kDa, respectively.

**BACKGROUND**

Butyrophilin 2A1 (BTN2A1) is a type I transmembrane glycoprotein of the butyrophilin family within the Ig-superfamily. There are over 13 Butyrophilin and the closely related butyrophilin-like (BTNL) molecules and they have been identified as immune checkpoint receptors involved in modulating T cell function (1,2). Mature human BTN2A1 consists of an extracellular domain (ECD) with two immunoglobulin-like domains (one IgV and one IgC), a transmembrane segment, and a cytoplasmic region with a B30.2 domain (3). Alternative splicing generates additional isoforms of BTN2A1 that lack the first Ig-like domain or the transmembrane segment as well as isoforms with substitutions and deletions in the cytoplasmic region. BTN2A1 is widely expressed including on colonic epithelial cells, on immune cells, and in milk fat globules (4, 5). BTN2A1 binds to the C-type lectin DC-SIGN on monocyte-derived dendritic cells, and this interaction can be blocked by soluble gp130 from HIV (4). A polymorphism of BTN2A1 has been associated with metabolic syndromes, type II diabetes mellitus, chronic kidney disease, and hypertension (6, 7). Our Avi-tag Biotinylated BTN2A1 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:**

1. Arnett, H.A. and J.L. Viney (2014) *Nat. Rev. Immunol.* **14**:559.
2. Afrache, H. *et al.* (2012) *Immunogenetics* **64**:781.
3. Tazi-Ahnini, R. *et al.* (1997) *Immunogenetics* **47**:55.
4. Malcherek, G. *et al.* (2007) *J. Immunol.* **179**:3804.
5. Cavaletto, M. *et al.* (2002) *Proteomics* **2**:850.
6. Oguri, M. *et al.* (2011) *J. Med. Genet.* **48**:787.
7. Horibe, H. *et al.* (2014) *Mol. Med. Rep.* **9**:808.