

Active Recombinant Human BTN1A1 protein, His/Avi-tagged, Biotinylated

Cat. No. BTN1A1-051H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Biotinylated Recombinant Human BTN1A1(Ala27-Arg242) protein, fused to His/Avi tag at the C-terminus, was expressed in HEK293 cells .
Species	Human
Source	HEK293
ProteinLength	Ala27-Arg242
Description	Butyrophilin 1A1 (also called BTN1A1), a 55 kDa type I transmembrane glycoprotein, is a member of the Ig superfamily. BTN1A1 is 494 amino acids (aa) long and is composed of an extracellular domain (ECD) (aa 27-242), a transmembrane domain and a cytoplasmic tail (aa 270-526) which contains the B30.2 domain. The BTN1A1 ECD displays two predicted IgV and IgC domains as do B7 and Skint proteins which interact with other Ig superfamily members (1).The B30.2 domain of BTN1A1 binds to xanthine oxidoreductase (XOR) (2). This interaction stabilizes the association of XOR with the milk fat globule membrane and appears to be essential in the control of milk fat globule secretion (3, 4, 5). Binding to XOR is conserved among BTN1A1 orthologs, but is not shared by BTN2A1 or BTN3A1 (2). The B30.2 domain of butyrophilins is also described as a sensor for detecting changes in intracellular phospho-antigen (pAg) concentrations. B30.2 binding to pAg induces a cascade of events leading to the activation of gamma δ T cells (6). In vitro, BTN1A1 has an inhibitory effect on CD4+ T cell proliferation, and in addition reduces expression of

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cytokines associated with T cell activation such as IL-2 and IFN-gamma (7, 8). Furthermore, in vivo, BTN1A1 has a protective effect against the development of experimental autoimmune encephalomyelitis (EAE) (9). The ECD of human BTN1A1 shares 68% aa sequence identity with both mouse and rat BTN1A1. Because butyrophilins are structurally related to B7 proteins and are functionally implicated in immune regulation, they may represent an emerging family of co-stimulatory/inhibitory molecules.

Predicted N Terminal	Ala27
Form	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose.
Bio-activity	The biotin to protein ratio is greater than 0.7 as determined by the HABA assay.
Molecular Mass	30-43 kDa, under reducing conditions
Endotoxin	<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.
Applications	Binding Activity, Bioactivity
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.
Reconstitution	Reconstitute at 100 µg/mL in PBS.

Conjugation Biotin

GENE INFORMATION

Gene Name [BTN1A1](#) butyrophilin, subfamily 1, member A1 [Homo sapiens]

Official Symbol [BTN1A1](#)

Synonyms BTN1A1; butyrophilin, subfamily 1, member A1; BTN; butyrophilin subfamily 1 member A1; BT; bK14H9.2 (butyrophilin, subfamily 1, member A1);

Gene ID [696](#)

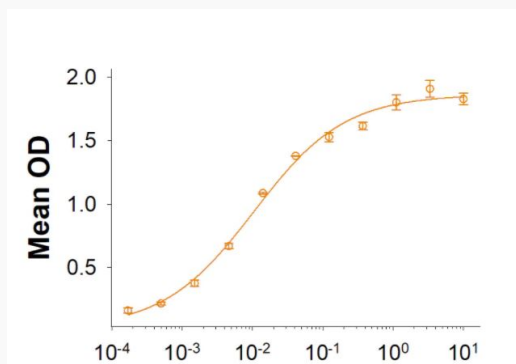
mRNA Refseq [NM_001732](#)

Protein Refseq [NP_001723](#)

MIM [601610](#)

UniProt ID [Q13410](#)

Binding Activity

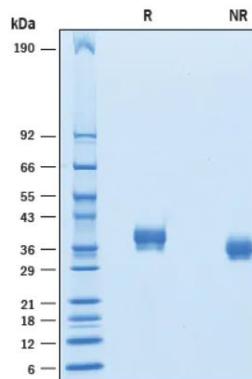


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SDS-PAGE



2 µg/lane Protein was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining.