Recombinant Human BTNL9 Fc Chimera

Catalog Number: 9659-BT

DESCRIPTION

Source

Human embryonic kidney cell, HEK293-derived human BTNL9 protein

Human BTNL9 (Ser35-Lys256) Accession # Q6UXG8-1	IEGRMD	Human IgG_1 (Pro100-Lys330)

N-terminus C-terminus

N-terminal Sequence Analysis	Ser35
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	52 kDa

SPECIFICATIONS

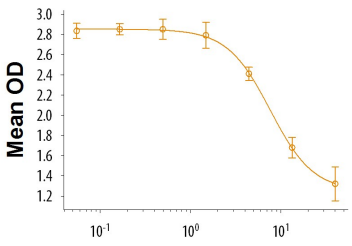
SDS-PAGE	60-69 kDa, reducing conditions
Activity	Measured by its ability to inhibit anti-CD3 antibody induced IFN-gamma secretion by human peripheral blood mononuclear cells (PBMC). The ED_{50} fot this effect is 3-15 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, 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 200 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

Bioactivity



Recombinant Human BTNL9 Fc Chimera Protein Bioactivity
Recombinant Human BTNL9 Fc Chimera (Catalog # 9659-BT) inhibits IFN-γ secretion by human peripheral blood mononuclear cells in the presence of anti-CD3 antibody. The ED_{50} for this effect is 3-15 µg/mL.

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BACKGROUND

Butyrophilin-like 9 (BTNL9) is a member of the BTN/MOG Ig-superfamily and functions as a negative regulator of immune cell activation (1). Human BTNL9 is a 535 amino acid (aa) type I transmembrane glycoprotein that contains a 222 aa extracellular domain (ECD), a 21 aa helical transmembrane domain, and a 258 aa cytoplasmic domain. The ECD features both an IgV and IgC domain, which is commonplace in the BTN/BTNL proteins, but the IgC domain is relatively weak (1-4). The ECD of human BTNL9 shares 66% and 67% aa sequence identity with rat and mouse, respectively. Human BTNL9 mRNA has been identified in adipose, lung, thymus, spleen, colon, and cardiac tissues, but its highest levels of expression were found in B cells (2, 5). Although the specific function of BTNL9 has yet to be fully elucidated, recombinant BTNL9-Fc has been shown to bind to many immune cells including T cells, B cell, macrophages, and dendritic cells (6). BTNL9 expression has also been found to be down-regulated in colon cancer tumors (5). R&D in house data indicate that BTNL9 protein inhibits the secretion of IFN-gamma from anti-CD3 activated PBMC.

References:

1. Arnett, H.A. *et al.* (2014) Nat Rev Immunol. **14**:5596.
2. Arnett, H.A. *et al.* (2009) Cytokine **46**:370.
3. Abeler-Dorner, L. *et al.* (2012) Trends Immunol. **33**:34.
4. Rhodes, D. *et al.* (2016) Annu. Rev. Immunol. **34**:151.
5. Lebrero-Fernandez, C. *et al.* (2016) Immun. Inflammation Dis. **4**:191.
6. Yamazaki, T. *et al.* (2010) J. Immunol. **185**:5907.

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