Biotinylated Recombinant Human VSTM2A Fc Chimera Avi-tag

Catalog Number: AVI10704

DESCRIPTION

Source

Chinese Hamster Ovary cell line, CHO-derived human VSTM2A protein

Human VSTM2A (Ser25-Phe244) Accession # NP_001304772.1	IEGRMD	Human IgG_1 (Pro100-Lys330)	Avi-tag

N-terminus C-terminus

N-terminal Sequence Analysis	Ser25
Structure / Form	Disulfide-linked homodimer, biotinylated via Avi-tag
Predicted Molecular Mass	53 kDa

SPECIFICATIONS

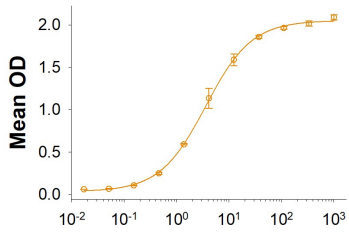
SDS-PAGE	62-75 kDa, under reducing conditions
Activity	Measured by its ability to inhibit anti-CD3 antibody induced IL-2 or IFN-gamma secretion by human T cells. The ED_{50} for this effect is 1.00-10.0 µg/mL Measured by its binding ability in a functional ELISA. When Human VSTM2A Antibody (Catalog # MAB100371) is immobilized at 0.5 µg/mL (100 µL/well), Biotinylated Recombinant Human VSTM2A Fc Chimera Avi-tag (Catalog # AV10704) binds with an ED_{50} of 1.00-8.00 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>90%, 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 VSTM2A Fc Chimera Avi-tag Protein Binding Activity When Human VSTM2A Antibody (Catalog # MAB100371) is immobilized at 0.5 µg/mL (100 µL/well), Biotinylated Recombinant Human VSTM2A Fc Chimera Avi-tag (Catalog # AV10704) binds with an ED_{50} of 1.00-8.00 ng/mL

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BACKGROUND

V-set and transmembrane domain-containing protein 2A (VSTM2A) is a secreted glycoprotein that is a member of the immunoglobulin superfamily (1). The VSTM family consists of 8 family members, each containing an immunoglobulin V-set (IgV) domain in the extracellular domain (ECD). In addition to the single IgV domain, VSTM2A contains two N-glycosylation sites in the ECD that are critical for its secretion, but not for activity (2). In humans, two isoforms exist due to alternative splicing, varying in the C-terminal residues. The mature ECD of human VSTM2A, isoform 2 shares 80% amino acid sequence identity with mouse and rat VSTM2A isoform 2. VSTM2A is expressed during adipocyte development and its over-expression promotes adipogenesis (1). VSTM2A promotes regulation and commitment of white and brown preadipocytes by increasing gene expression of the transcription factor PPARG in a BMP4-dependent signaling pathway (1, 2). VSTM2A is highly expressed in the brain but the role of VSTM2A in neuronal and brain development remain uncharacterized (3). VSTM2A is a critical tumor suppressor in colorectal carcinogenesis and a novel antagonist of Wnt signaling receptor LRP6, and might serve as a new prognostic marker for colorectal cancer patients (4). Our in house data show that VSTM2A inhibits the human T cell activation, including anti-CD3 induced IL-2 and IFN-γ secretion, and T cell proliferation. Our Avi-tag Biotinylated VSTM2A 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. Secco, B. et al. (2017) Cell Rep. **18**:93.
2. Berry, D.C. et al. (2013) Development. **140**:3939.
3. Pandey, A.K. et al. (2014) PloS One. **9**:e88889.
4. Zhang, D. et al. (2019) Theranostics. **9**:6517.

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