Biotinylated Recombinant Human TREM2 Fc Chimera Avi-tag

Catalog Number: AVI1828

DESCRIPTION

Source

Chinese Hamster Ovary cell line, CHO-derived human TREM2 protein

Human TREM-2 (His19-Ser174) Accession # Q9NZC2.1	IEGRMD	Human IgG_1 (Pro100-Lys330)	Avi-tag

N-terminus C-terminus

N-terminal Sequence Analysis	His19
Structure / Form	Disulfide-linked homodimer Biotinylated via Avi-tag
Predicted Molecular Mass	46 kDa (monomer)

SPECIFICATIONS

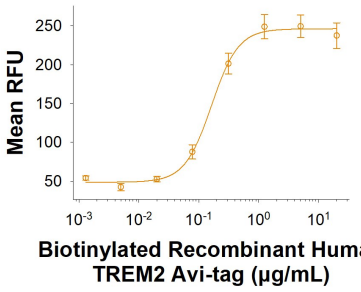
SDS-PAGE	60-70 kDa, under reducing conditions.
Activity	When Biotinylated Recombinant Human TREM-2 Fc Chimera Avi-tag is immobilized onto Streptavidin coated plate (Catalog # CP004), it binds fluorescein-conjugated *E. coli* Bioparticles with an ED_{50} of 0.100-0.600 µg/mL.
Endotoxin Level	<1.0 EU per 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 with polar packs. 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.

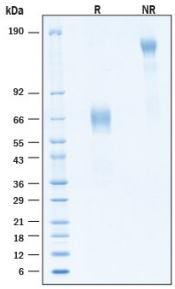
DATA

Binding Activity



Biotinylated Recombinant Human TREM2 Fc Chimera Avi-tag Protein Binding Activity. When Biotinylated Recombinant Human TREM-2 Fc Chimera Avi-tag Protein (Catalog # AVI1828) is immobilized onto Streptavidin coated plate (Catalog # CP004), it binds fluorescein-conjugated E. coli Bioparticles with an ED_{50} of 0.100-0.600 µg/mL.

SDS-PAGE



Biotinylated Recombinant Human TREM2 Fc Chimera Avitag Protein SDS-PAGE. 2 µg/lane of Biotinylated Recombinant Human TREM2 Fc Chimera Avitag Protein (Catalog # AVI1828) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 60-70 kDa and 120-140 kDa, respectively.

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Catalog Number: AVI1828

BACKGROUND

Triggering Receptor Expressed on Myeloid cells-2 (TREM2) is a type I transmembrane member of the TREM subfamily within the much larger Ig superfamily. In humans, there are 7 TREM and TREM-like receptors which play important roles in the regulation of both innate and adaptive immune response (1). Mature humanTREM2 consists of an extracellular domain (ECD) with one V-type Ig-like domain, a transmembrane domain with a conserved positively-charged lysine residue, and a short cytoplasmic tail (1). The ECD of human TREM2 shares 73% amino acid sequence identity with mouse TREM2. TREM2 is expressed on macrophages, immature myeloid dendritic cells, osteoclasts, microglia, and adipocytes (2-6). It promotes the differentiation and function of osteoclasts, the production of inflammatory cytokines by adipocytes, insulin resistance, and the phagocytic clearance of bacteria (6-8). TREM2 associates with the signaling adapter protein DAP12, both preferentially expressed in microglia, to modulate cytokine production (2). Additionally in the CNS, TREM2 binds to ApoE, ApoA1, and ApoB and mediates the clearance of apoptotic neurons, amyloid plaques, and cell debris following demyelination (3-5, 9). TREM2 also interacts with and modifies the signaling of Plexin A1 on dendritic cells and osteoclasts (10). Mutations in TREM2 or DAP12 are associated with the development of Alzheimer's disease and Nasu-Hakola disease (NHD/PLOSL) which is characterized by presenile dementia and bone cysts (11, 12). Soluble TREM2 is elevated in cerebrospinal fluid of patients with active multiple sclerosis (MS), and TREM2 blockade exacerbates disease symptoms in the experimental EAE model of MS (13, 14). Our Avi-tag Biotinylated TREM2 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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