Biotinylated Recombinant Human CEACAM-5/CD66e Fc Chimera Avi-tag

Catalog Number: AVI10449

DESCRIPTION

Source

Chinese Hamster Ovary cell line, CHO-derived human CEACAM-5/CD66e protein

Human CEACAM-5/CD66e (Lys35-Ala685) Accession # NP_004354.3	IEGRMD	Human IgG_1 (Pro100-Lys330)	Avi-tag

N-terminus C-terminus

N-terminal Sequence Analysis	Lys35
Structure / Form	Disulfide-linked homodimer, biotinylated via Avi-tag
Predicted Molecular Mass	100 kDa

SPECIFICATIONS

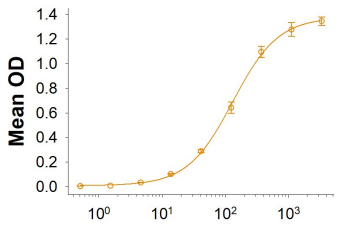
SDS-PAGE	145-165 kDa, under reducing conditions
Activity	The biotin to protein ratio is greater than 0.7 as determined by the HABA assay. Measured by its binding ability in a functional ELISA. When Biotinylated Recombinant Human CEACAM-5/CD66e Fc Chimera Avi-tag (Catalog # AVI10449) is immobilized at 1 µg/mL (100 µL/well), Recombinant Human Galectin-4 (Catalog # 1227-GA) binds with an ED_{50} of 35-280 ng/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 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



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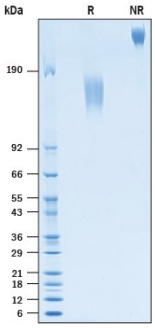
SDS-PAGE



2 µg/lane of Biotinylated Recombinant Human CEACAM-5/CD66e Fc Chimera Avi-tag Protein (Catalog # AVI10449) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 145-165 kDa and 290-330 kDa, respectively.

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BACKGROUND

CEACAM-5, also known as CEA, CD66e and Psg30, belongs to the large family of CEACAM and pregnancy specific glycoproteins. CEACAM family members are highly glycosylated with varying arrangements of IgV-like and IgC-like regions in their extracellular domains (ECD) and can be expressed as transmembrane, glycophosphatidyl inositol (GPI) linked or soluble proteins (1-3). CEACAM-5 consists of an N-terminal Ig-like V-set domain followed by six Ig-like C2-set domains and a GPI anchor (2, 4, 5). While the mature ECD of mouse CEACAM-5 shares 26% amino acid identity with human CEACAM5, it remains unclear if these molecules are direct orthologs (6). CEACAM-5, expressed primarily by epithelial cells, functions as a calcium-independent adhesion molecule through homophilic and heterophilic interactions with CEACAM-1 (1, 7). CEACAM-5 is restricted to the apical face of intestinal epithelial cells in the adult but is more diffuse during embryonic development and in tumors (8). This is consistent with a role in the development and maintenance of epithelial architecture. CEACAM-5 is up-regulated in a wide variety of human tumors, promoting tumor cell migration, invasion, adhesion, and metastasis, and has been used as a cancer marker (8, 9). It also contributes to tumor formation by maintaining cellular proliferation in the presence of differentiation stimuli, and by blocking apoptosis following loss of ECM anchorage (anoikis) (10, 11). The GPI anchoring of CEACAM-5 can be released by GPI-PLD, resulting in a soluble molecule that also promotes tumor metastasis (12). Cell surface expression of CEACAM-5 on tumor cells prevents the adhesion of - expressing NK cells and provides protection from NK-mediated lysis (8). CEACAM-5 also binds a subset of Neisseria opacity proteins (Opa) and E. coli adhesion proteins (13, 14). These interactions trigger clustering of the lipid raft-localized CEACAM-5 to sites of pathogen contact (14, 15). Our Avi-tag Biotinylated Recombinant Human CEACAM-5 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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