Active Recombinant Human CEACAM5 protein, His/Avi-tagged, Biotinylated

Cat. No. CEACAM5-052H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Biotinylated Recombinant Human CEACAM5(Lys35-Ala685) protein, fused to His/Avi tag at the C-terminus, was expressed in CHO cells .
Species	Human
Source	CHO
ProteinLength	Lys35-Ala685
Description	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 human CEACAM-5 shares 26% amino acid identity with mouse CEACAM-5, 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

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	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 CEACAM-1 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.
Predicted N Terminal	Lys35
Form	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose.
Bio-activity	Measured by its binding ability in a functional ELISA. When Biotinylated Recombinant Human CEACAM5 His-tag Avi-tag is immobilized at 1 μg/mL (100 μl/well), Recombinant Human Galectin-4 binds with an ED50 of 15-120 ng/mL.
Molecular Mass	125-155 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

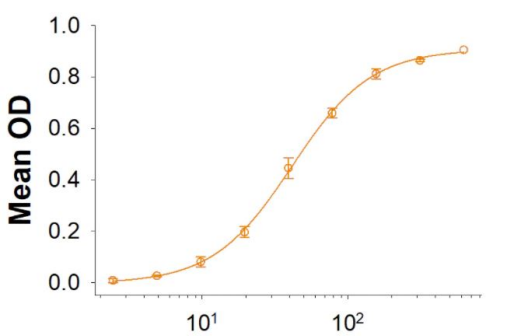
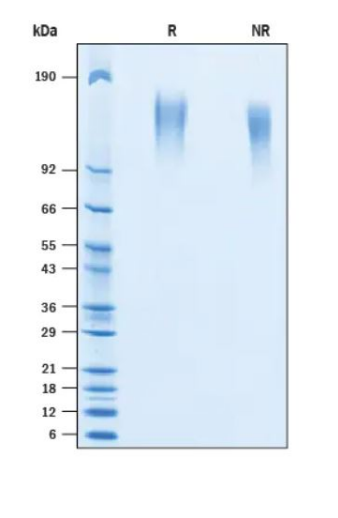
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	Coomassie® Blue Staining.
Applications	Bioactivity
Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles.12 months from date of receipt, -20 to -70 °C as supplied.1 month, 2 to 8 °C under sterile conditions after reconstitution.3 months, -20 to -70 °C under sterile conditions after reconstitution.
Reconstitution	Reconstitute at 500 µg/mL in PBS.
Conjugation	Biotin

GENE INFORMATION

Gene Name	CEACAM5 carcinoembryonic antigen-related cell adhesion molecule 5 [Homo sapiens]
Official Symbol	CEACAM5
Synonyms	CEACAM5; carcinoembryonic antigen-related cell adhesion molecule 5; CEA; CD66e; meconium antigen 100; DKFZp781M2392;
Gene ID	1048
mRNA Refseq	NM_004363
Protein Refseq	NP_004354
MIM	114890

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UniProt ID	P06731
Binding Activity	
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.

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