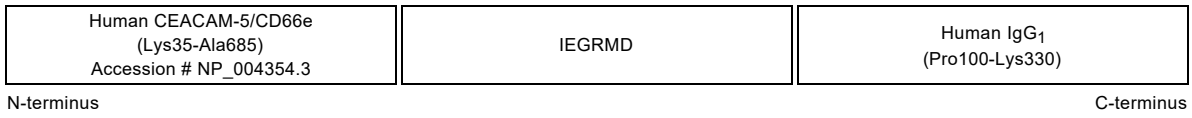
Recombinant Human CEACAM-5/CD66e Fc Chimera

Catalog Number: 10449-CM

DESCRIPTION

Source	Human embryonic kidney cell, HEK293-derived human CEACAM-5/CD66e protein



N-terminal Sequence Analysis	Lys35
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	96 kDa

SPECIFICATIONS

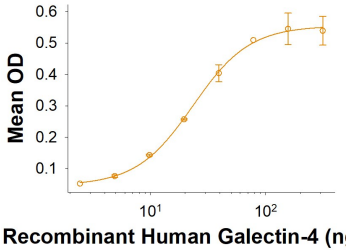
SDS-PAGE	135-175 kDa, under reducing conditions.
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Human CEACAM-5/CD66e Fc Chimera (Catalog # 10449-CM) is immobilized at 0.5 µg/mL (100 µL/well), Recombinant Human Galectin-4 (Catalog # 1227-GA) binds with an ED_{50} of 10-90 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. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 400 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.

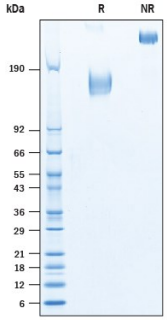
DATA

Binding Activity



Recombinant Human CEACAM-5/CD66e Fc Chimera Protein Binding Activity When Recombinant Human CEACAM-5/CD66e Fc Chimera (Catalog # 10449-CM) is immobilized at 0.5 µg/mL (100 µL/well), Recombinant Human Galectin-4 (Catalog # 1227-GA) binds with an ED_{50} of 10-90 ng/mL.

SDS-PAGE



Recombinant Human CEACAM-5/CD66e Fc Chimera Protein SDS-PAGE 2 µg/lane of Recombinant Human CEACAM-5/CD66e Fc Chimera Protein (Catalog # 10449-CM) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 135-175 kDa and 270-330 kDa, respectively.

bio-techne®
Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449

Recombinant Human CEACAM-5/CD66e Fc Chimera

Catalog Number: 10449-CM

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 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 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 was shown to bind galectin-4 and by surface plasmon resonance and coimmunoprecipitated with galectin-4 in human colon adenocarcinoma LS174T cell lysates (13). CEACAM-5 also binds a subset of Neisseria opacity proteins (Opa) and E. coli adhesion proteins (14, 15). These interactions trigger clustering of the lipid raft-localized CEACAM-5 to sites of pathogen contact (15, 16).

References:

1. Zebhauser, R. *et al.* (2005) Genomics **86**:566.
2. Hammarstrom, S. (1999) Semin. Cancer Biol. **9**:67.
3. Chan, *et al.* (2007) Curr Oncol. **14**:70.
4. Schrewe, H. *et al.* (1990) Mol. Cell. Biol. **10**:2738.
5. Hefta, S.A. *et al.* (1988) Proc. Natl. Acad. Sci. **85**:4648.
6. Hance, K.W. *et al.* Mutat Res. (2005) **576**:132.
7. Stern, N. *et al.* (2005) J. Immunol. **174**:6692.
8. Beauchemin N. *et al.* (2013) Cancer Metastasis Rev. **32**:3.
9. Blumenthal, R.D. *et al.* (2005) Cancer Res. **65**:8809.
10. Screaton, R.A. *et al.* (1997) J. Cell Biol. **137**:939.
11. Ordonez, C. *et al.* (2000) Cancer Res. **60**:3419.
12. Yamamoto, Y. *et al.* (2005) Biochem. Biophys. Res. Commun. **333**:223.
13. Ideo, H. *et al.* (2005) J Biol Chem. **280**:4730.
14. Martin, J.N. *et al.* (2016) Biochemistry. **55**:4286.
15. Berger, C.N. *et al.* (2004) Mol. Microbiol. **52**:963.
16. Tchoupa, A.K. *et al.* (2014) Cell Commun Signal. **12**:27.

bio-techne®
Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 **Canada** TEL 855 668 8722 **China** TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449