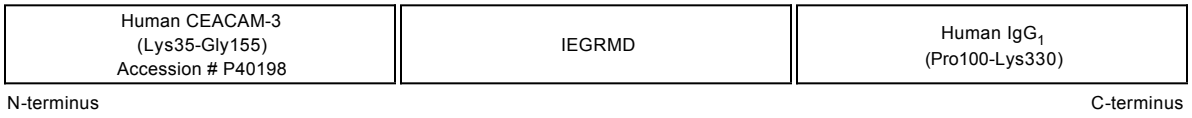
Recombinant Human CEACAM-3/CD66d Fc Chimera

Catalog Number: 9985-CM

DESCRIPTION

Source

Chinese Hamster Ovary cell line, CHO-derived human CEACAM-3/CD66d protein



N-terminal Sequence Analysis	Lys35
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	39.7 kDa

SPECIFICATIONS

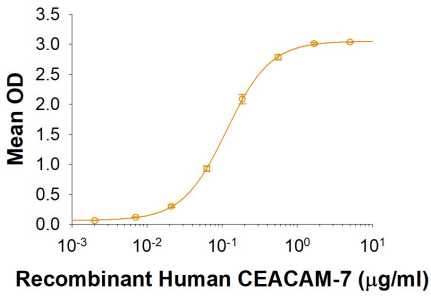
SDS-PAGE	48-54 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Human CEACAM-3/CD66d Fc Chimera is immobilized at 1 µg/mL (100 µL/well), Recombinant Human CEACAM-7 (Catalog # 9010-CM) binds with an ED_{50} of 0.05-0.4 µg/mL.
Endotoxin Level	<0.10 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 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	• 12 months from date of receipt, ≤ -20 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, ≤ -20 °C under sterile conditions after reconstitution.

DATA

Binding Activity



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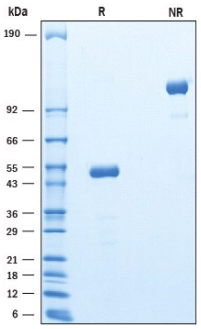
SDS-PAGE



2 µg/lane of Recombinant Human CEACAM-3 was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 48-54 kDa and 96-110 kDa, respectively.

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BACKGROUND

Carcinoembryonic Antigen-related Cell Adhesion Molecule 3 (CEACAM-3), or CD66d, is part of the CEA protein family consisting of CEACAMs and the pregnancy-specific glycoproteins (PSGs). Both CEACAM and PSG molecules have been identified in humans and belong to the much larger glycosylphosphatidylinositol (GPI)-linked immunoglobulin (Ig) superfamily (1, 2). Human CEACAM-3 is ~35 kDa, consisting of an extracellular domain (ECD) containing one IgV-like domain, a single transmembrane domain and a cytoplasmic tail. The cytoplasmic tail of CEACAM-3 contains an immunoreceptor tyrosine-based activation motif (ITAM), which recruits kinases to propagate pro-inflammatory signaling cascades (3). Interestingly, CEACAM-3 appears to be primate specific, with on non-primate orthologs currently identified (4). Originally discovered as a biomarker for colorectal cancer (5), CEACAMs have now been associated with numerous intracellular signaling processes including cell adhesion, cell growth, recognition and differentiation, angiogenesis, and apoptosis (6-8). Unlike other CEA family members, CEACAM-3 has not been shown to form cell–cell adhesion interactions with other CEACAM family members (9). CEACAM-3 has been found to be specifically expressed on human neutrophils and other granulocytes and appears to be a specific adaptation of the innate immune system to cope with a small set of host-specific pathogen (9). CEACAM-3 was identified as critical for opsonin-independent phagocytosis and bacterial clearance (10). CEACAM-3 binds to the colony opacity-associated (Opa) outer membrane proteins of bacteria, such as *Neisseria gonorrhoeae*, and triggers uptake of the pathogen and subsequent elimination (9, 10).

References:

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