Human CEACAM-1/CD66a PE-conjugated Antibody

Monoclonal Mouse IgG_{2B} Clone # 283340

Catalog Number: FAB2244P

100 TESTS

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human CEACAM-1 in direct ELISAs and Western blots. In direct ELISAs and Western blots, this antibody does not cross-react with recombinant human (rh) CD31, rhICAM-1, -2, -3, recombinant mouse MAdCAM-1, or rhVCAM-1.
Source	Monoclonal Mouse IgG_{2B} Clone # 283340
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human CEACAM-1 Gln35-Gly428 Accession # P13688
Conjugate	Phycoerythrin Excitation Wavelength: 488 nm Emission Wavelength: 565-605 nm
Formulation	Supplied in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

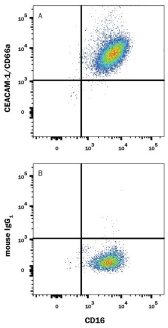
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Flow Cytometry	10 µL/10^6 cells	See Below

DATA

Flow Cytometry



Detection of CEACAM-1/CD66a in Human Blood Granulocytes by Flow Cytometry. Human peripheral blood granulocytes were stained with Mouse Anti-Human Fc gamma RIII (CD16) CFS-conjugated Monoclonal Antibody (Catalog # FAB2546F) and either (A) Mouse Anti-Human CEACAM-1/CD66a PE-conjugated Monoclonal Antibody (Catalog # FAB2244P) or (B) Mouse IgG_1 Phycoerythrin Isotype Control (Catalog # IC002P). View our protocol for Staining Membrane-associated Proteins.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Protect from light. Do not freeze.** ● 12 months from date of receipt, 2 to 8 °C as supplied.

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BACKGROUND

Carcinoembryonic antigen (CEA)-related cell adhesion molecule 1 (CEACAM-1; also BGP) is a 160 kDa member of the CEACAM branch of the CEA gene family of the immunoglobulin superfamily (1-3). It is one of seven human CEACAM subfamily genes that are essentially divided equally between type I transmembrane proteins (CEACAM-1, 3, and 4) and GPI-linked molecules (CEACAM-5-8). There is no CEACAM-2 in human. The gene for human CEACAM-1 codes for a 526 amino acid (aa) type I transmembrane protein that contains a 34 aa signal sequence, a 394 aa extracellular domain (ECD), a 24 aa transmembrane segment, and a 74 aa cytoplasmic region (4, 5). The ECD contains one N-terminal V-type Ig-like domain, followed by three C2-type Ig-like domains. It shows considerable glycosylation, including high mannose residues and (sialyl) $Lewis^X$ (1). The cytoplasmic region shows one ITIM motif and a calmodulin binding site (1-3). In addition to the full length form, ten alternate splice forms have been reported (1, 4, 6-8). There are three soluble and seven transmembrane isoforms, with variations occurring in both the ECD and cytoplasmic region. All ten alternate splice forms contain the V-type Ig-like domain (aa's 35-142). The three soluble forms also contain the first two C2-type Ig-like domains (aa's 145-317), with differences coming in the third C2-type Ig-like domain (6). The seven transmembrane isoforms are highly divergent. Five of the seven contain the V-type plus the first two C2-type domains and then diverge considerably both in the ECD and cytoplasmic region. The remaining two contain only the V−type Ig-like domain, the transmembrane region, and either a full-length or truncated cytoplasmic tail (1, 8). The actual functions of the isoforms are unclear. Full-length mouse and rat CEACAM-1 are approximately 57% aa identical to human CEACAM-1; in the V−type Ig-like domain, they are 58% and 56% aa identical, respectively. The full-length molecule is found on neutrophils, bile duct epithelium, activated NK cells, colonic columnar epithelium and endothelium. It is known to act as an intercellular adhesion molecule, forming both homotypic, and heterotypic bonds with CEA and CEACAM-6/NCA (3, 9). On neutrophils, CEACAM-1 also binds to dendritic cell CD-SIGN via its Le^X moiety, inducing dendritic cell maturation and a subsequent Th1-type response (10,11).

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