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Anti-CD66a/b/c Antibody

Catalog # AP54056

Product Information

Application	WB, IHC, IF/IC
Primary Accession	P13688
Other Accession	P40199, P31997
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	57560

Additional Information

Gene ID	634
Other Names	CEACAM1; BGP; BGP1; Carcinoembryonic antigen-related cell adhesion molecule 1; Biliary glycoprotein 1; BGP-1; CD66a; CEACAM6; NCA; Carcinoembryonic antigen-related cell adhesion molecule 6; Non-specific crossreacting antigen; Normal cross-reacting antigen; CD66c; CEACAM8; CGM6; Carcinoembryonic antigen-related cell adhesion molecule 8; CD67 antigen; Carcinoembryonic antigen CGM6; Non-specific cross-reacting antigen NCA-95; CD66b
Target/Specificity	KLH-conjugated synthetic peptide encompassing a sequence within the center region of human CD66a/b/c. The exact sequence is proprietary.
Dilution	WB~~1/500 - 1/1000 IHC~~1:100~500 IF/IC~~N/A
Format	Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.01% sodium azide.
Storage	Store at -20 °C.Stable for 12 months from date of receipt

Protein Information

Name	CEACAM1 (HGNC:1814)
Function	[Isoform 1]: Cell adhesion protein that mediates homophilic cell adhesion in a calcium-independent manner (By similarity). Plays a role as coinhibitory receptor in immune response, insulin action and also functions as an activator during angiogenesis (PubMed:18424730, PubMed:23696226, PubMed:25363763). Its coinhibitory receptor function is phosphorylation- and PTPN6 -dependent, which in turn, suppress signal transduction of associated receptors by dephosphorylation of their downstream effectors. Plays a role in immune response, of T cells, natural killer (NK) and neutrophils (PubMed:18424730, PubMed:23696226). Upon TCR/CD3 complex stimulation,

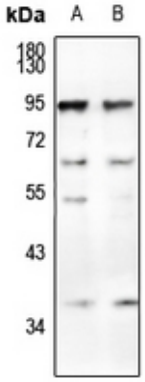
inhibits TCR- mediated cytotoxicity by blocking granule exocytosis by mediating homophilic binding to adjacent cells, allowing interaction with and phosphorylation by LCK and interaction with the TCR/CD3 complex which recruits PTPN6 resulting in dephosphorylation of CD247 and ZAP70 (PubMed:18424730). Also inhibits T cell proliferation and cytokine production through inhibition of JNK cascade and plays a crucial role in regulating autoimmunity and anti-tumor immunity by inhibiting T cell through its interaction with HAVCR2 (PubMed:25363763). Upon natural killer (NK) cells activation, inhibit KLRK1-mediated cytolysis of CEACAM1-bearing tumor cells by trans-homophilic interactions with CEACAM1 on the target cell and lead to cis-interaction between CEACAM1 and KLRK1, allowing PTPN6 recruitment and then VAV1 dephosphorylation (PubMed:23696226). Upon neutrophils activation negatively regulates IL1B production by recruiting PTPN6 to a SYK-TLR4-CEACAM1 complex, that dephosphorylates SYK, reducing the production of reactive oxygen species (ROS) and lysosome disruption, which in turn, reduces the activity of the inflammasome. Down-regulates neutrophil production by acting as a coinhibitory receptor for CSF3R by down-regulating the CSF3R-STAT3 pathway through recruitment of PTPN6 that dephosphorylates CSF3R (By similarity). Also regulates insulin action by promoting INS clearance and regulating lipogenesis in liver through regulating insulin signaling (By similarity). Upon INS stimulation, undergoes phosphorylation by INSR leading to INS clearance by increasing receptor-mediated insulin endocytosis. This inernalization promotes interaction with FASN leading to receptor-mediated insulin degradation and to reduction of FASN activity leading to negative regulation of fatty acid synthesis. INSR-mediated phosphorylation also provokes a down-regulation of cell proliferation through SHC1 interaction resulting in decrease coupling of SHC1 to the MAPK3/ERK1-MAPK1/ERK2 and phosphatidylinositol 3-kinase pathways (By similarity). Functions as activator in angiogenesis by promoting blood vessel remodeling through endothelial cell differentiation and migration and in arteriogenesis by increasing the number of collateral arteries and collateral vessel calibers after ischemia. Also regulates vascular permeability through the VEGFR2 signaling pathway resulting in control of nitric oxide production (By similarity). Down-regulates cell growth in response to EGF through its interaction with SHC1 that mediates interaction with EGFR resulting in decrease coupling of SHC1 to the MAPK3/ERK1- MAPK1/ERK2 pathway (By similarity). Negatively regulates platelet aggregation by decreasing platelet adhesion on type I collagen through the GPVI-FcRgamma complex (By similarity). Inhibits cell migration and cell scattering through interaction with FLNA; interferes with the interaction of FLNA with RALA (PubMed:16291724). Mediates bile acid transport activity in a phosphorylation dependent manner (By similarity). Negatively regulates osteoclastogenesis (By similarity).

Cellular Location

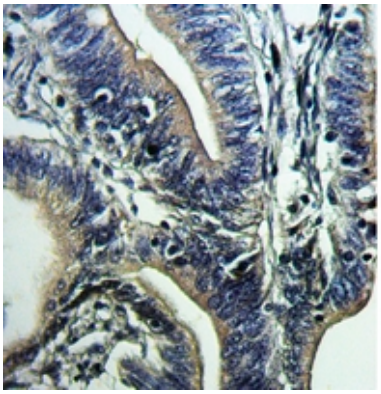
[Isoform 1]: Cell membrane {ECO:0000250|UniProtKB:P16573}; Single-pass type I membrane protein {ECO:0000250|UniProtKB:P16573}. Lateral cell membrane {ECO:0000250|UniProtKB:P16573}. Apical cell membrane {ECO:0000250|UniProtKB:P16573}. Basal cell membrane {ECO:0000250|UniProtKB:P16573}. Cell junction. Cell junction, adherens junction {ECO:0000250|UniProtKB:P16573}. Note=Canalicular domain of hepatocyte plasma membranes. Found as a mixture of monomer, dimer and oligomer in the plasma membrane. Occurs predominantly as cis-dimers and/or small cis-oligomers in the cell junction regions. Found as dimer in the solution. Predominantly localized to the lateral cell membranes {ECO:0000250|UniProtKB:P16573} [Isoform 3]: Secreted [Isoform 5]: Cell membrane; Single-pass type I membrane protein [Isoform 7]: Cell membrane; Single-pass type I membrane protein Cell projection, microvillus membrane {ECO:0000250|UniProtKB:P31809}; Single-pass type I membrane protein. Apical cell membrane; Single-pass type I membrane protein. Note=Localized to the apical glycocalyx surface (PubMed:10436421). Colocalizes with

	CEACAM20 at the apical brush border of intestinal cells {ECO:0000250|UniProtKB:P31809, ECO:0000269|PubMed:10436421}
Tissue Location	Expressed in columnar epithelial cells of the colon (at protein level) (PubMed:10436421). The predominant forms expressed by T cells are those containing a long cytoplasmic domain (PubMed:18424730). Expressed in granulocytes and lymphocytes Leukocytes only express isoforms 6 and isoform 1 (PubMed:11994468)

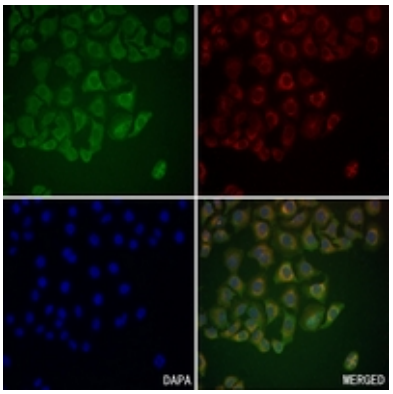
Images



Western blot analysis of CD66a/b/c expression in Myla2059 (A), K562 (B) whole cell lysates. (Predicted band size: 57; 37; 38 kD; Observed band size: 95 kD)



Immunohistochemical analysis of CD66a/b/c staining in human colorectal cancer formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The section was then incubated with the antibody at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.



Immunofluorescent analysis of CD66a/b/c staining in A549 cells. Formalin-fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 5-10 minutes and blocked with 3% BSA-PBS for 30 minutes at room temperature. Cells were probed with the primary antibody in 3% BSA-PBS and incubated overnight at 4 °C in a hidified chamber. Cells were washed with PBST and incubated with a AF488-conjugated secondary antibody (green) in PBS at room temperature in the dark. Phalloidin - AF594 was used to stain Actin filaments (red). DAPI was used to stain the cell nuclei (blue).

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