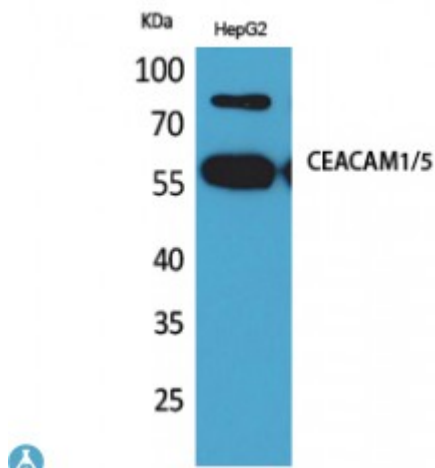


Anti-CEACAM1/5 antibody



Description	Rabbit polyclonal to CEACAM1/5.
Model	STJ96570
Host	Rabbit
Reactivity	Human
Applications	ELISA, IHC, WB
Immunogen	Synthesized peptide derived from human CEACAM1/5.
Immunogen Region	31-80 aa, N-terminal
Gene ID	634
Gene Symbol	CEACAM1
Dilution range	WB 1:500-1:2000IHC-P 1:100-300ELISA 1:20000
Specificity	CEACAM1/5 Polyclonal Antibody detects endogenous levels of CEACAM1/5 protein.
Tissue Specificity	The predominant forms expressed by T cells are those containing a long cytoplasmic domain . Expressed in granulocytes and lymphocytes. Leukocytes only express isoforms 6 and isoform 1 .
Purification	The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen.
Note	For Research Use Only (RUO).
Protein Name	Carcinoembryonic antigen-related cell adhesion molecule 1 Biliary glycoprotein 1 BGP-1 CD antigen CD66a

Molecular Weight	57560/76795 kDa
Clonality	Polyclonal
Conjugation	Unconjugated
Isotype	IgG
Formulation	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.
Concentration	1 mg/ml
Storage Instruction	Store at -20°C, and avoid repeat freeze-thaw cycles.
Database Links	HGNC:1814OMIM:109770
Alternative Names	Carcinoembryonic antigen-related cell adhesion molecule 1 Biliary glycoprotein 1 BGP-1 CD antigen CD66a
Function	Isoform 1: Cell adhesion protein that mediates homophilic cell adhesion in a calcium-independent manner . Plays a role as coinhibitory receptor in immune response, insulin action and functions also as an activator during angiogenesis . 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 . 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 . 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 . 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 . 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. Downregulates neutrophil production by acting as a coinhibitory receptor for CSF3R by downregulating the CSF3R-STAT3 pathway through recruitment of PTPN6 that dephosphorylates CSF3R . Also regulates insulin action by promoting INS clearance and regulating lipogenesis in liver through regulating insulin signaling . Upon INS stimulation, undergoes phosphorylation by INSR leading to INS clearance by increasing receptor-mediated insulin endocytosis. This internalization 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 . 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 . Downregulates 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 . Negatively regulates platelet aggregation by decreasing platelet adhesion on type I collagen through the GPVI-FcRgamma complex . Inhibits cell migration and cell scattering through interaction with FLNA; interferes with the interaction of FLNA with RALA . Mediates bile acid transport activity in a phosphorylation dependent manner . Negatively regulates osteoclastogenesis . Isoform 8: Cell adhesion protein that mediates homophilic cell adhesion in a calcium-independent manner . Promotes populations of T cells regulating IgA production and secretion associated with control of the commensal microbiota and resistance to enteropathogens .

Sequence and Domain Family

Ig-like V-type domain mediates trans-homophilic cell adhesion through homodimerization and this active process is regulated by tyrosine kinase, PTPN11 AND PTPN6. Ig-like C2-type and/or cytoplasmic domains mediate cis-dimer/oligomer.

Cellular Localization

Isoform 1: Cell membrane Lateral cell membrane Apical cell membrane Basal cell membrane Cell junction Cell junction, adherens junction. 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. Isoform 2: Secreted Isoform 3: Secreted Isoform 4: Secreted Isoform 5: Cell membrane. Single-pass type I membrane protein.. Isoform 6: Cell membrane. Single-pass type I membrane protein.. Isoform 7: Cell membrane. Single-pass type I membrane protein.. Isoform 8: Cell membrane Cytoplasmic vesicle, secretory vesicle membrane Lateral cell membrane Apical cell membrane Basal cell membrane Cell junction Cell junction, adherens junction. Predominantly localized to the lateral cell 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 . Co-localizes with ANXA2 in secretory vesicles and with S100A10/p11 at the plasma membrane . Cell projection, microvillus membrane Apical cell membrane. Colocalizes with CEACAM20 at the apical brush border of intestinal cells.

Post-translational Modifications

Isoform 1: Phosphorylated on serine and tyrosine . Isoform 1 is phosphorylated on tyrosine by Src family kinases like SRC and LCK and by receptor like CSF3R, EGFR and INSR upon stimulation . Phosphorylated at Ser-508; mediates activity. Phosphorylated at Tyr-493; regulates activity . Phosphorylated at Tyr-493 by EGFR and INSR upon stimulation; this phosphorylation is Ser-508-phosphorylation-dependent; mediates cellular internalization; increases interaction with downstream proteins like SHC1 and FASN . Phosphorylated at Tyr-493 and Tyr-520 by LCK; mediates PTPN6 association and is regulated by homophilic ligation of CEACAM1 in the absence of T cell activation . Phosphorylated at Tyr-520; mediates interaction with PTPN11 . Isoform 8: Phosphorylated on serine and threonine.