abcam

ab128720

Anti-CEACAM1 + CEACAM6 + CEACAM3 antibody [YTH71.3]

Key facts

Isotype	IgG2a
Host species	Rat
Storage buffer	Preservative: 0.09% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Cell preparation containing CEACAM3 protein. The exact immunogen used to generate this antibody is proprietary information. Database link P40198
Clone number	YTH71.3
Purification technique	Affinity purification Protein G
Specificity	ab128720 recognises Human CEACAM1 + CEACAM6 + CEACAM3. Clone YTH71.3 reacts with transfectants containing BGPa, NCA and CGM1a which are CEA subfamily members.
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	-

Notes	Use 10µl of the suggested working dilution to label 10^6 cells in 100µl. ab18450 - Rat monoclonal IgG2a, is suitable for use as an isotype control with this antibody.

Target data

See full target information CEACAM1

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). Isoform 8. Cell adhesion protein that mediates homophilic cell adhesion in a calcium-independent manner (By similarity). Promotes populations of T cells regulating IgA production and secretion associated with control of the commensal microbiota and resistance to enteropathogens (By similarity).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C

Notes

Should this product contain a precipitate we recommend microcentrifugation before use. Storage in frost-free freezers is not recommended.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	CEACAM1 CEACAM6 and CEACAM3 are members of the carcinoembryonic antigen-related cell adhesion molecule (CEACAM) family. They function as cell surface glycoproteins. CEACAM1 also known as CD66a or BGP1 has a mass of approximately 120 kDa. It is expressed in numerous tissues including liver lung and immune cells. CEACAM6 or CD66c weighs about 37 kDa and is found in epithelial cells and certain cancer types. CEACAM3 or CD66d weighs around 32 kDa and appears mainly in granulocytes. These proteins assist in cell signaling and play roles in cell adhesion and immune responses.
Biological function summary	Each of these proteins participates in various processes within the body. CEACAM1 serves as a mediator for intercellular adhesion and is involved in immune modulation. It can dimerize and sometimes form larger complexes with other CEACAM family members. CEACAM6 though similar exhibits a more restrictive role within cancer cell adhesion and signaling. CEACAM3 acts primarily in pathogen recognition within granulocytes operating independently rather than forming complexes. The CEACAM family's ability to interact with immune cells often impacts cellular responses to environmental changes and infectious agents.
Pathways	These proteins influence several significant pathways within the body. CEACAM1 and CEACAM6 engage in pathways related to immune response regulation and signaling. Specifically they play roles in the Src family kinase and MAPK signaling

	pathways which guide cellular proliferation and survival. Related proteins such as CEACAM4 and CEACAM5 show interactions in similar pathways highlighting their collective part in immune system modulation. CEACAM3 on the other hand links to pathways involved in phagocytosis and pathogen clearance cooperating with innate defense mechanisms.
Associated diseases and disorders	These proteins link to conditions such as cancer and infections. CEACAM1 expression often alters in various cancers impacting tumor progression and immune evasion. It becomes associated with proteins like EGFR in tumorigenic pathways. CEACAM6 links closely to conditions like colorectal cancer where it assists in cell migration and invasion and interacts with integrins and other adhesion molecules. CEACAM3's role in recognizing and binding bacteria connects it to infectious diseases providing an essential defense mechanism in the immune response often involving proteins like TLRs to enhance pathogen detection.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

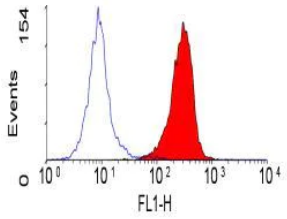
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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1 product image



Flow Cytometry - Anti-CEACAM1 + CEACAM6 + CEACAM3 antibody [YTH71.3] (ab128720)

CEACAM1 + CEACAM6 + CEACAM3 Flow Cytometry staining using rat Anti-CEACAM1 + CEACAM6 + CEACAM3 antibody

ab128270 at 10µl/10^6 cells staining CD66a + CD66c + CD66d in Human peripheral blood granulocytes by Flow Cytometry.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.