abcam

ab207718

Anti-CEACAM5 + CD66b + CEACAM1 + CEACAM6 antibody [EPR20721]

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR20721
Purification technique	Affinity purification Protein A
Specificity	ab207718 cross-reacts with CEACAM 1, 6 and 8. There are other CEACAM family members but we only examined cross-reactivity with those having >55% homology with CEACAM5 following a BLAST search with the immunogen.
Concentration	0.614 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Human

Dilution info	1/500
Notes	-

Not recommended

Species	Transfected cell line - Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

Species	Transfected cell line - Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/500
Notes	-

Not recommended

Species	Transfected cell line - Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Transfected cell line - Human
Dilution info	1/5000 - 1/40000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Human
Dilution info	1/5000 - 1/40000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Target data

See full target information CEACAM5

Function	Cell surface glycoprotein that plays a role in cell adhesion, intracellular signaling and tumor progression (PubMed:10864933, PubMed:10910050, PubMed:2803308). Mediates homophilic and heterophilic cell adhesion with other carcinoembryonic antigen-related cell adhesion molecules, such as CEACAM6 (PubMed:2803308). Plays a role as an oncogene by promoting tumor progression; induces resistance to anoikis of colorectal carcinoma cells (PubMed:10910050). (Microbial infection) Receptor for E.coli Dr adhesins. Binding of E.coli Dr adhesins leads to dissociation of the homodimer.

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

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

Activity summary	CEACAM5 also known as CEA or CD66e is part of the carcinoembryonic antigen family. It plays a role as a cell adhesion molecule facilitating intercellular binding. CEACAM5 is a glycoprotein with a molecular mass of approximately 180 kDa. You find CEACAM5 expression in normal epithelial tissues such as the colon stomach and tongue but it shows increased levels in various carcinoma cells. It is also identified as CEACAM6 and both of these linked proteins function as cell surface glycoproteins involved in cellular interactions.
Biological function summary	CEACAM5 proteins influence cell signaling and intercellular communication. They participate in immune response modulation and function as part of larger protein complexes. CEACAM5 acts as an anchor point for various cellular processes by associating with CEACAM1 and CEACAM6. By regulating cell adhesion CEACAM5 helps in maintaining normal cellular architecture and function within tissue environments.
Pathways	CEACAM5 is integral to pathways involving cell adhesion and signaling. It participates in immune system responses and the regulation of cell proliferation pathways including the MEK/ERK signaling cascade. CEACAM5 proteins interact with others like CEACAM1 sharing roles in cell signaling and communication networks that control adhesion dynamics and growth factor responses.
Associated diseases and disorders	Excessive CEACAM5 expression links to colorectal and gastric cancers making it a useful cancer biomarker. CEACAM5-positive tumors often correlate with disease progression which highlights their potential as therapeutic targets. These proteins also interact with CD66b markers which are associated with neutrophil activation in inflammatory responses. Such associations with CEACAM1 and CEACAM6 in carcinogenic pathways further underline CEACAM5's relevance in cancer diagnostics and treatment strategies.

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

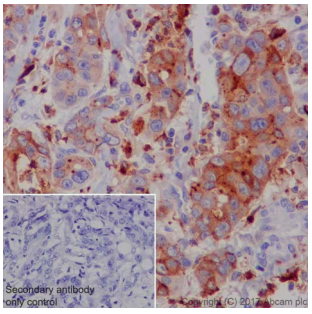
We do not recommend this combination. It is not covered by our product promise.

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.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

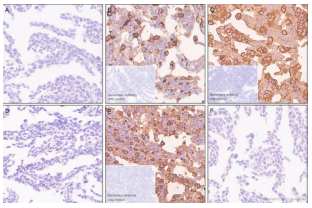
9 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CEACAM5 + CD66b + CEACAM1 + CEACAM6 antibody [EPR20721] (ab207718)

CEACAM5 + CD66b + CEACAM1 + CEACAM6 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-CEACAM5 + CD66b + CEACAM1 + CEACAM6 antibody

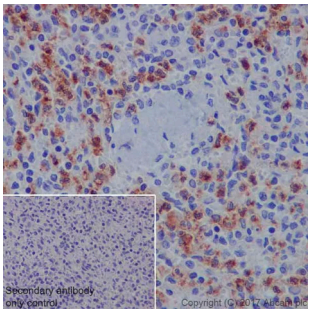
Immunohistochemical analysis of paraffin-embedded human colon cancer tissue labeling Carcino Embryonic Antigen CEA with ab207718 at 1/40,000 dilution, followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP). Positive staining in human colon cancer (PMID: 25042385) is observed. Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Goat Anti-Rabbit IgG H&L (HRP).
Perform heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CEACAM5 + CD66b + CEACAM1 + CEACAM6 antibody [EPR20721] (ab207718)

CEACAM5 + CD66b + CEACAM1 + CEACAM6 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-CEACAM5 + CD66b + CEACAM1 + CEACAM6 antibody

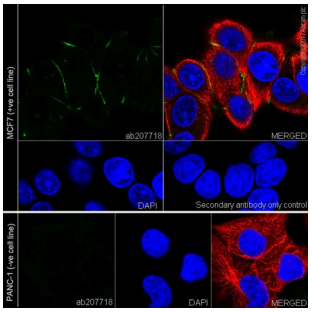
Immunohistochemistry analysis of paraffin-embedded (A) HEK-293T cells transfected with a CEACAM1 expression vector containing a his tag, (B) HEK-293T cells transfected with a CEACAM3 expression vector containing a his tag, (C) HEK-293T cells transfected with a CEACAM5 expression vector containing a his tag, (D) HEK-293T cells transfected with a CEACAM6 expression vector containing a his tag, (E) HEK-293T cells transfected with a CEACAM8 expression vector containing a his tag, (F) HEK-293T cells transfected with empty vector containing a his tag, sections labelling CEACAM5 + CD66b + CEACAM1 + CEACAM6 with ab207718 at 1/5000 dilution. The section was incubated with ab207718 for 30 mins at room temperature. LeicaDS9800 (Bond™ Polymer Refine Detection) was used as the secondary antibody. Sections were counterstained with Hematoxylin. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins. Positive stainng on (B) HEK-293T cells transfected with a CEACAM3 expression vector containing a his tag, (C) HEK-293T cells transfected with a CEACAM5 expression vector containing a his tag, (E) HEK-293T cells transfected with a CEACAM8 expression vector containing a his tag. Nearly no staining on (A) HEK-293T cells transfected with a CEACAM1 expression vector containing a his tag, (D) HEK-293T cells transfected with a CEACAM6 expression vector containing a his tag and (F) HEK-293T cells transfected with empty vector containing a his tag. The immunostaining was performed on a Leica Biosystems BOND® RX instrument.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CEACAM5 + CD66b + CEACAM1 + CEACAM6 antibody [EPR20721] (ab207718)

CEACAM5 + CD66b + CEACAM1 + CEACAM6 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-CEACAM5 + CD66b + CEACAM1 + CEACAM6 antibody

Immunohistochemical analysis of paraffin-embedded human spleen tissue labeling Carcino Embryonic Antigen CEA with ab207718 at 1/40,000 dilution, followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP). Positive staining of spleen-infiltrating neutrophils (PMID: 22064717 and 19077207) is observed. Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Goat Anti-Rabbit IgG H&L (HRP).
Perform heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).



Immunocytochemistry/ Immunofluorescence - Anti-CEACAM5 + CD66b + CEACAM1 + CEACAM6 antibody [EPR20721] (ab207718)

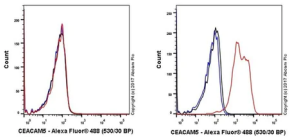
CEACAM5 + CD66b + CEACAM1 + CEACAM6 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-CEACAM5 + CD66b + CEACAM1 + CEACAM6 antibody

Immunofluorescent analysis of 100% methanol fixed MCF7 (human breast adenocarcinoma epithelial cell) cells labeling Carcino Embryonic Antigen CEA with ab207718 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green).
Confocal image showing membranous staining on MCF7 cell line.

Negative control for cells: PANC-1 .

Counterstained with ab195889 anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) at a 1/200 dilution (red) and DAPI (blue).

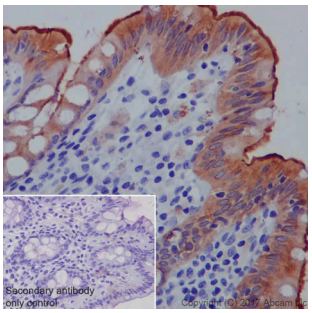
The negative control is the secondary antibody only.



Flow Cytometry - Anti-CEACAM5 + CD66b + CEACAM1 + CEACAM6 antibody [EPR20721] (ab207718)

CEACAM5 + CD66b + CEACAM1 + CEACAM6 Flow Cytometry staining using rabbit Anti-CEACAM5 + CD66b + CEACAM1 + CEACAM6 antibody

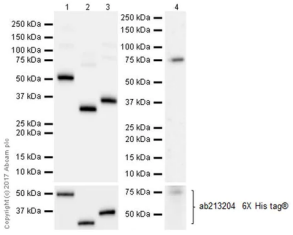
Flow cytometric analysis of PANC-1 (human pancreatic epithelioid carcinoma epithelial cell) (Left) / MCF7 (human breast adenocarcinoma epithelial cell) (Right) labeling Carcino Embryonic Antigen CEA with ab207718 at 1/500 (red) compared with a Rabbit monoclonal IgG (ab172730) (black) and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077), at 1/2000 dilution was used as the secondary antibody. Cells were not fixed or permeabilized. Gated on total viable cells.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CEACAM5 + CD66b + CEACAM1 + CEACAM6 antibody [EPR20721] (ab207718)

CEACAM5 + CD66b + CEACAM1 + CEACAM6 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-CEACAM5 + CD66b + CEACAM1 + CEACAM6 antibody

Immunohistochemical analysis of paraffin-embedded human colon tissue labeling Carcino Embryonic Antigen CEA with ab207718 at 1/40,000 dilution, followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP). Positive staining in human colon (PMID: 25042385) is observed. Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Goat Anti-Rabbit IgG H&L (HRP).
Perform heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).



Western blot - Anti-CEACAM5 + CD66b + CEACAM1 + CEACAM6 antibody [EPR20721] (ab207718)

Blocking/ Dilution buffer and concentration: 5% NFDM/TBST.
Exposure times:

Lanes 1-3: 10 seconds

Lane 4: 4 minutes

Observed MW: 50, 30, 32, 75 kDa.

The blot was developed on a BIO-RAD® ChemiDoc™ MP instrument.

All lanes:
Western blot - Anti-CEACAM5 + CD66b + CEACAM1 + CEACAM6 antibody [EPR20721] (ab207718) at 1/1000 dilution

Lane 1:
His-GST-tagged human CEACAM5 recombinant protein (aa238-686) 10 ng

Lane 2:
His-tagged human CEACAM6 recombinant protein (aa35-326) 10 ng

Lane 3:
His-tagged human CEACAM8 recombinant protein (aa35-335) 10 ng

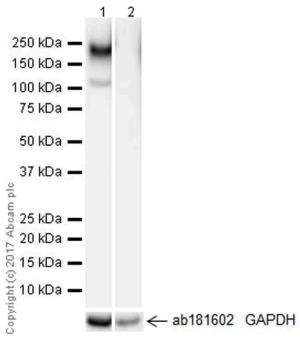
Lane 4:
His-tagged human CEACAM1 recombinant protein (aa35-428) 10 ng

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Developed using the ECL technique.

Observed band size: 30 kDa, 32 kDa, 50 kDa, 75 kDa



Western blot - Anti-CEACAM5 + CD66b + CEACAM1 + CEACAM6 antibody [EPR20721] (ab207718)

CEACAM5 + CD66b + CEACAM1 + CEACAM6 Western blot staining using rabbit Anti-CEACAM5 + CD66b + CEACAM1 + CEACAM6 antibody

Blocking/ Dilution buffer and concentration: 5% NFDM/TBST.
Observed MW: 110-150, 75-90 kDa.

The blot was developed on a BIO-RAD® ChemiDoc™ MP instrument.

All lanes:
Western blot - Anti-CEACAM5 + CD66b + CEACAM1 + CEACAM6 antibody [EPR20721] (ab207718) at 1/1000 dilution

Lane 1:
MCF7 (human breast adenocarcinoma epithelial cell), whole cell lysate at 20 µg

Lane 2:
PANC-1 (human pancreatic epithelioid carcinoma epithelial cell), whole cell lysate at 20 µg

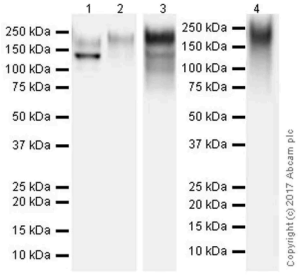
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Developed using the ECL technique.

Observed band size: 110-150 kDa, 75-90 kDa

Exposure time: 58s



Western blot - Anti-CEACAM5 + CD66b + CEACAM1 + CEACAM6 antibody [EPR20721] (ab207718)

CEACAM5 + CD66b + CEACAM1 + CEACAM6 Western blot staining using rabbit Anti-CEACAM5 + CD66b + CEACAM1 + CEACAM6 antibody

Blocking/ Dilution buffer and concentration: 5% NFDM/TBST.
Exposure times:

Lanes 1-2: 3 minutes

Lanes 3-4: 10 seconds

Observed MW 110-150, 75-90 kDa.

The blot was developed on a BIO-RAD® ChemiDoc™ MP instrument. The expression profile observed is consistent with differential glycosylation of this protein (PMID: 1717152).

All lanes:
Western blot - Anti-CEACAM5 + CD66b + CEACAM1 + CEACAM6 antibody [EPR20721] (ab207718) at 1/1000 dilution

Lane 1:
Caco-2 (human colorectal adenocarcinoma epithelial cell), whole cell lysate at 10 µg

Lane 2:
SW480 (human colorectal adenocarcinoma epithelial cell), whole cell lysate at 10 µg

Lane 3:
Human colon lysate at 20 µg

Lane 4:
LoVo (human colorectal adenocarcinoma epithelial cell), whole cell lysate at 10 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Developed using the ECL technique.

Observed band size: 110-150 kDa, 75-90 kDa

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