abcam

ab7417

Anti-CD13 antibody [WM15]

Recombinant | KO Validated

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Clone number	WM15
Purification technique	Affinity purification Protein A
Epitope	The antibody recognizes an extracellular epitope.
Concentration	1.022 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified by protein-A affinity chromatography> 95% pure (by SDS-PAGE).

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	1 µg/mL

Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

ICC/IF

Tested

Species	Human
Dilution info	1 µg/mL
Notes	This product also produced a positive signal in A375 when fixed with 4% formaldehyde (10min)

Target data

See full target information ANPEP

Function	Broad specificity aminopeptidase which plays a role in the final digestion of peptides generated from hydrolysis of proteins by gastric and pancreatic proteases. Also involved in the processing of various peptides including peptide hormones, such as angiotensin III and IV, neuropeptides, and chemokines. May also be involved the cleavage of peptides bound to major histocompatibility complex class II molecules of antigen presenting cells. May have a role in angiogenesis and promote cholesterol crystallization. May have a role in amino acid transport by acting as binding partner of amino acid transporter SLC6A19 and regulating its activity (By similarity). (Microbial infection) Acts as a receptor for human coronavirus 229E/HCoV-229E. In case of human coronavirus 229E (HCoV-229E) infection, serves as receptor for HCoV-229E spike glycoprotein. (Microbial infection) Mediates as well Human cytomegalovirus (HCMV) infection.

Storage

Shipped at conditions	Blue Ice
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

This product has switched fom a hybridoma to recombinant production method on 08th March 2021.
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	CD13 also known as aminopeptidase N (ANPEP) is a transmembrane protein with a molecular weight of approximately 150 kDa. It functions as a zinc-dependent metalloenzyme which cleaves N-terminal amino acids from peptides and proteins. CD13 protein is expressed on various cell types including myeloid cells epithelial cells endothelial cells and fibroblasts. Its presence is significantly observed in the brush border of the small intestinal mucosa and the renal proximal tubule. Researchers can study CD13 using anti-CD13 antibodies and CD13 ELISA kits.
Biological function summary	CD13 regulates peptide-mediated signaling and controls the maturation and catabolism of bioactive peptides. The enzymatic function of CD13 influences processes such as cell proliferation motility and angiogenesis. It does not operate as part of a larger complex but its activity modulates several cellular and systemic functions. CD13's role in these biological processes highlights its importance in modulating local and systemic peptide pools which contributes to its diverse physiological effects.
Pathways	CD13 plays significant roles in the renin-angiotensin system and the regulation of inflammatory responses. In the renin-angiotensin system CD13 modulates the activity of angiotensin influencing blood pressure and fluid balance. Through its enzymatic activity CD13 interacts with proteins such as ACE another critical player in this pathway. In inflammation CD13 regulates the availability of chemotactic peptides affecting leukocyte migration and adhesion. The proteins it works with in inflammatory pathways include cytokines which CD13 indirectly modulates by altering chemokine activity.
Associated diseases and disorders	Aberrant CD13 expression and activity are implicated in cancer and inflammatory diseases. In cancer overexpression of CD13 correlates with tumor growth and metastasis particularly in cancers like renal cell carcinoma and prostate cancer. It can confer an increased malignant phenotype by promoting angiogenesis and immune evasion. In inflammatory disorders dysregulation of CD13 exacerbates diseases such as rheumatoid arthritis through its impact on peptide-mediated signaling and immune cell movement. Its connection with inflammatory cytokines like IL-8 indicates its important role in mediating inflammatory responses.

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

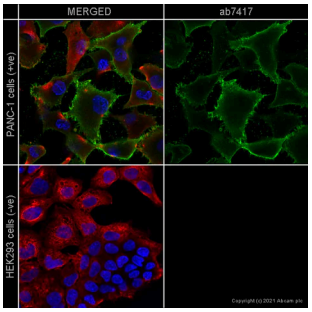
We do not recommend this combination. It is not covered by our product promise.

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.

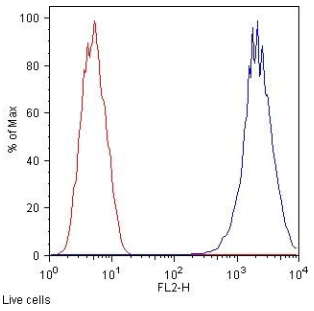
6 product images



Immunocytochemistry/ Immunofluorescence - Anti-CD13 antibody [WM15] (ab7417)

CD13 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-CD13 antibody

ab7417 staining CD13 in PANC-1 cells (top panel - positive control) and HEK-293 cells (bottom panel - negative control). The cells were fixed with 4% paraformaldehyde (10 min) then permeabilized with 0.1% PBS-Tween for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated with ab7417 at 0.5µg/ml concentration and ab6046 (Rabbit polyclonal to beta Tubulin) at 1/1000 dilution overnight at 4°C followed by a further incubation at room temperature for 1h with a goat secondary antibody to mouse IgG (Alexa Fluor® 488) (ab150117) at 2 µg/ml (shown in green) and a goat secondary antibody to rabbit IgG (Alexa Fluor® 594) (ab150080) at 2 µg/ml (shown in red). Nuclear DNA was labelled in blue with DAPI.
Image was taken with a confocal microscope (Leica-Microsystems TCS SP8).

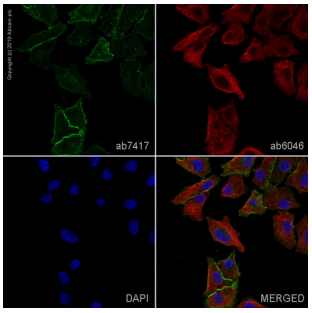


This image is courtesy of an anonymous customer review

Flow Cytometry - Anti-CD13 antibody [WM15] (ab7417)

CD13 Flow Cytometry staining using mouse Anti-CD13 antibody

This image was generated from the hybridoma version of the product.
ab7417 staining CD13 in Human Fibrosarcoma cells by flow cytometry. Cells were fixed with paraformaldehyde. The sample was incubated with primary antibody at 10µg/ml in PBS for 1 hour at 20°C. An Allophycocyanin (APC) conjugated anti-mouse monoclonal was used as a secondary antibody at 5µg/ml. Secondary antibody only (red). ab7417 and secondary antibody (blue).

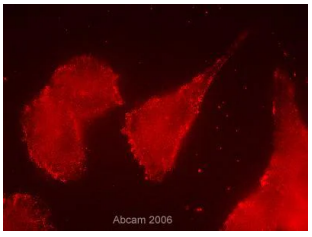


Immunocytochemistry/ Immunofluorescence - Anti-CD13 antibody [WM15] (ab7417)

CD13 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-CD13 antibody

ab7417 staining CD13 in A375 cells. The cells were fixed with 100% methanol (5 min), permeabilized with 0.1% PBS-Tween for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1%PBS-Tween for 1h. The cells were then incubated overnight at 4°;C with ab7417 at 1µg/ml and ab6046, Rabbit polyclonal to beta Tubulin - Loading Control. Cells were then incubated with ab150117, Goat polyclonal Secondary Antibody to Mouse IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution (shown in green) and ab150080, Goat polyclonal Secondary Antibody to Rabbit IgG - H&L (Alexa Fluor®; 594) at 1/1000 dilution (shown in pseudocolour red). Nuclear DNA was labelled with DAPI (shown in blue).
Also suitable in cells fixed with 4% paraformaldehyde (10 min).

Image was acquired with a high-content analyser (Operetta CLS, Perkin Elmer) and a maximum intensity projection of confocal sections is shown

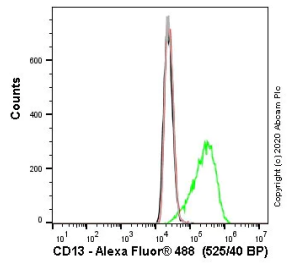


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Immunocytochemistry/ Immunofluorescence - Anti-CD13 antibody [WM15] (ab7417)

CD13 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-CD13 antibody

This image was generated from the hybridoma version of the product.
ab7417 staining CD13 in HT1080 cells by ICC/IF (Immunocytochemistry/Immunofluorescence). Cells were fixed with 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. Samples were incubated with primary antibody at 10µg/ml for 1 hour. A Texas Red Goat Anti-mouse polyclonal was used as the secondary antibody.



Flow Cytometry - Anti-CD13 antibody [WM15] (ab7417)

CD13 Flow Cytometry staining using mouse Anti-CD13 antibody

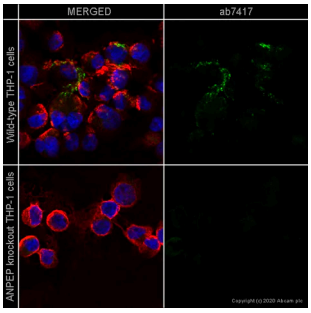
Flow cytometry overlay histogram showing wild-type THP1 (green line) and ANPEP knockout THP1 cells (ab273759) stained with ab7417 (red line). The cells were incubated in 1x PBS containing 10µg/ml human IgG and 10% normal goat serum to block FC receptors and non-specific protein-protein interaction followed by the antibody (ab7417) ($1x10^6$ in 100µl at 1 µg/ml) for 30 min at 4°C.

The secondary antibody Goat anti-mouse IgG H&L (Alexa Fluor® 488, pre-adsorbed) (ab150117) was used at 1/2000 for 30 min at 4°C.

Isotype control antibody was mouse IgG1κ (ab170190) used at the same concentration and conditions as the primary antibody (wild-type THP1 cells - black line; ANPEP knockout THP1 cells ab273759 - grey line). Unlabelled sample was also used as a control (this line is not shown for the purpose of simplicity).

Acquisition of >5000 events were collected using a 50 mW Blue laser (488nm) and 525/40 bandpass filter.

This image was generated from the hybridoma version of the product.



Immunocytochemistry/ Immunofluorescence - Anti-CD13 antibody [WM15] (ab7417)

CD13 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-CD13 antibody

ab7417 staining CD13 in wild-type THP-1 cells (top panel) and ANPEP knockout THP-1 cells (bottom panel) (ab273759). The cells were fixed with 4% paraformaldehyde (10 min) then permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated with ab7417 at 2.5µg/ml concentration and ab6046 (Rabbit polyclonal to beta Tubulin) at 1/1000 dilution overnight at 4°C followed by a further incubation at room temperature for 1h with a goat secondary antibody to mouse IgG (Alexa Fluor® 488) (ab150117) at 2 µg/ml (shown in green) and a goat secondary antibody to rabbit IgG (Alexa Fluor® 594) (ab150080) at 2 µg/ml (shown in red). Nuclear DNA was labelled in blue with DAPI.
Image was taken with a confocal microscope (Leica-Microsystems TCS SP8).
This image was generated from the hybridoma version of the product.

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