abcam

ab221675

Anti-CD105 antibody [EPR21846]

Anti-CD105 antibody [EPR21846] (ab221675) is a rabbit monoclonal antibody detecting CD105 in **Western Blot, Flow Cytometry, IP, IHC-P, IHC-Fr, ICC/IF**. Suitable for **Mouse**.

- Biophysical QC for unrivalled batch-batch consistency
- Over 10 publications

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	EPR21846
Purification technique	Affinity purification Protein A
Concentration	0.464 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Mouse

Dilution info	1/100
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

IP

Tested

Species	Mouse
Dilution info	1/30
Notes	-

Flow Cyt

Tested

Species	Mouse
Dilution info	1/500
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

IHC-Fr

Tested

Species	Mouse
Dilution info	1/50
Notes	Perform heat mediated antigen retrieval by using Tris-EDTA buffer (pH9.0) (ab94681).

Target data

See full target information Eng

Function	Vascular endothelium glycoprotein that plays an important role in the regulation of angiogenesis (PubMed:10625534). Required for normal structure and integrity of adult vasculature (By similarity). Regulates the migration of vascular endothelial cells (PubMed:17540773). Required for normal extraembryonic angiogenesis and for embryonic heart development (PubMed:10625534). May regulate endothelial cell shape changes in response to blood flow, which drive vascular remodeling and establishment of normal vascular morphology during angiogenesis (PubMed:28530658). May play a role in the binding of endothelial cells to integrins. Acts as a TGF-beta coreceptor and is involved in the TGF-beta/BMP signaling cascade that ultimately leads to the activation of SMAD transcription factors (PubMed:23300529). Required for GDF2/BMP9 signaling through SMAD1 in endothelial cells and modulates TGFB1 signaling through SMAD3 (By similarity).

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

What is this antibody validated in?
Anti-CD105 antibody [EPR21846] (ab221675) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Flow Cyt), Immunoprecipitation (IP), Immunohistochemistry (IHC-P), Immunohistochemistry (IHC-Fr), Immunocytochemistry/immunofluorescence (ICC/IF) in Mouse samples.

What is the molecular weight of CD105?
Anti-CD105 [EPR21846] (ab221675) specifically detects a band for CD105 (UniProt: Q63961) at a molecular weight of 70kDa.

Trusted by the scientific community
Anti-CD105 [EPR21846] (ab221675) was first used in a scientific publication in 2018 and has been cited over 10 times in peer-reviewed journals.

Other related products
We have a range of other formats of antibody clone [EPR21846] also available for your convenience: ab221675, Carrier free - ab231832, Alexa Fluor® 488 - ab237388, Alexa Fluor® 647 - ab307528, PE - ab314279, FITC - ab314950

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.

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size antibodies.

Supplementary info

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

Activity summary	CD105 also known as endoglin or the CD105 marker is a transmembrane glycoprotein with a molecular weight of approximately 180 kDa. It is a component of the TGF-beta receptor complex and exists in endothelial cells where it is abundantly expressed. Expression of CD105 is higher in proliferating cells particularly in the vasculature. You can also find it in tissues involved in the formation and remodeling of blood vessels such as during angiogenesis.
Biological function summary	Endoglin functions in the regulation of angiogenesis and vascular remodeling. It plays a significant role in mediating cellular responses to TGF-beta signaling influencing endothelial cell proliferation and migration. While not part of a larger structural complex endoglin interacts with receptors and signaling molecules important for vascular development and repair processes. This involvement aids in

	maintaining endothelial integrity and function under various physiological conditions.
Pathways	CD105 participates in the TGF-beta signaling and angiogenesis pathways. In these pathways it acts in conjunction with other proteins like TGF-beta receptors which play roles in cell differentiation proliferation and apoptosis. The interaction between CD105 and TGF-beta signaling regulates numerous cellular mechanisms impacting angiogenesis and cellular responses to environmental changes.
Associated diseases and disorders	CD105 has links to hereditary hemorrhagic telangiectasia (HHT) and certain cancers. In HHT mutations in the endoglin gene alter vascular structure leading to the formation of abnormal blood vessels. Oncologically overexpression of CD105 is present in tumor angiogenesis aiding in the progression of certain cancers. Other proteins like VEGF and TGF-beta closely interact with endoglin influencing disease progression and presenting potential targets for therapeutic intervention.

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

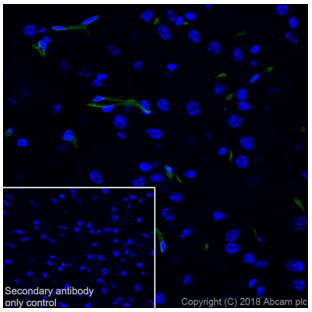
We do not recommend this combination. It is not covered by our product promise.

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.

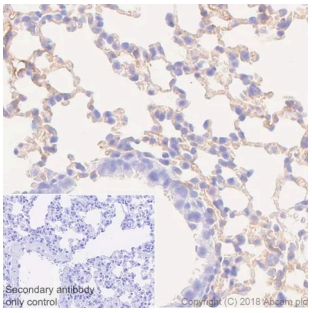
8 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD105 antibody [EPR21846] (ab221675)

Immunohistochemical analysis of 4% paraformaldehyde-fixed, 0.2% Triton X-100 permeabilized frozen mouse brain tissue labeling CD105 with ab221675 at 1/50 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/500 dilution. Positive staining in the endothelial cells of blood vessels in mouse brain tissue section (PMID: 24699047). The nuclear counter stain is DAPI (blue).
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/500 dilution.

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.

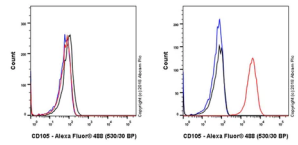


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD105 antibody [EPR21846] (ab221675)

CD105 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-CD105 antibody

Immunohistochemical analysis of paraffin-embedded mouse lung tissue labeling CD105 with ab221675 at 1/100 dilution, followed by Rabbit specific IHC polymer detection kit HRP/DAB (ab209101), Ready to use. Positive staining on endothelial cells of mouse lung is observed (PMID: 14528280). Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Rabbit specific IHC polymer detection kit HRP/DAB (ab209101), Ready to use.

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.

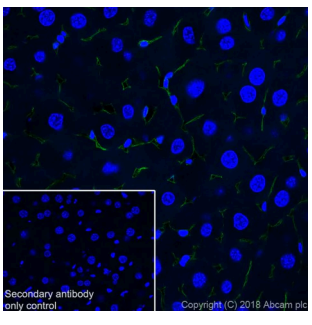


Flow Cytometry - Anti-CD105 antibody [EPR21846] (ab221675)

CD105 Flow Cytometry staining using rabbit Anti-CD105 antibody

Flow cytometric analysis of NIH/3T3 (mouse embryo fibroblast cell line) cell line (left panel) and bEND.3 (mouse brain endothelioma cell line) cell line (right panel) labeling CD105 with ab221675 at 1/500 dilution (red) compared with a Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (black) and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) at 1/2000 dilution was used as the secondary antibody.
Gated on total viable cells.

Negative control: NIH/3T3. (PMID: 8194490).

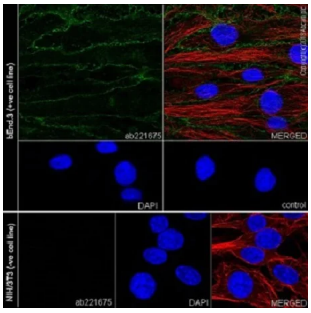


Immunohistochemistry (Frozen sections) - Anti-CD105 antibody [EPR21846] (ab221675)

CD105 Immunohistochemistry (Frozen sections) staining using rabbit Anti-CD105 antibody

Immunohistochemical analysis of 4% paraformaldehyde-fixed, 0.2% Triton X-100 permeabilized frozen mouse liver tissue labeling CD105 with ab221675 at 1/50 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/500 dilution (green). Positive staining in the hepatic sinusoidal endothelial cells on mouse liver tissue section (PMID: 12947156; 24507660). The nuclear counter stain is DAPI (blue).

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/500 dilution.

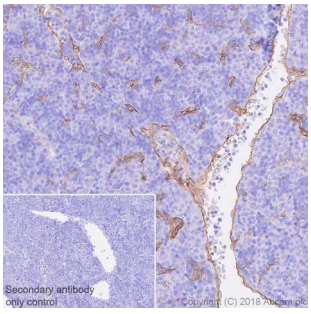


Immunocytochemistry/ Immunofluorescence - Anti-CD105 antibody [EPR21846] (ab221675)

CD105 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-CD105 antibody

Immunofluorescent analysis of 100% methanol-fixed bEND.3 (mouse brain endothelioma cell line) cells labeling CD105 with ab221675 at 1/1000 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 in Neuro-2a cell line. **Negative control:** NIH/3T3 (PMID: 8194490).
The nuclear counter stain is DAPI (blue). Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) at 1/200 dilution (red).

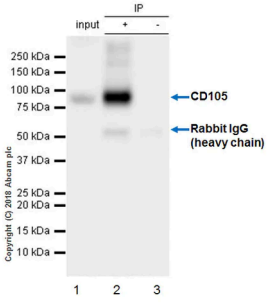
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) at 1/1000 dilution.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD105 antibody [EPR21846] (ab221675)

Immunohistochemical analysis of paraffin-embedded mouse E14.5 liver tissue labeling CD105 with ab221675 at 1/100 dilution, followed by Rabbit specific IHC polymer detection kit HRP/DAB (ab209101), Ready to use. Positive staining on endothelial cells of mouse E14.5 liver is observed (PMID: 18805961). Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Rabbit specific IHC polymer detection kit HRP/DAB (ab209101), Ready to use.

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Immunoprecipitation - Anti-CD105 antibody [EPR21846] (ab221675)

CD105 was immunoprecipitated from 0.35 mg of bEND.3 (mouse brain endothelioma cell line) whole cell lysate with ab221675 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab221675 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/5000 dilution.
Lane 1: bEND.3 whole cell lysate 10 µg (Input).

Lane 2: ab221675 IP in bEND.3 whole cell lysate.

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab221675 in bEND.3 whole cell lysate.

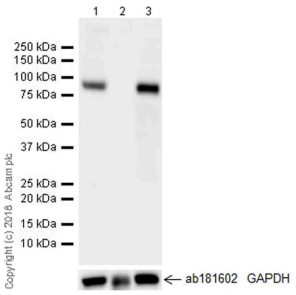
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 5 seconds.

All lanes:
Immunoprecipitation - Anti-CD105 antibody [EPR21846] (ab221675)

Predicted band size: 70 kDa

Observed band size: 95 kDa



Western blot - Anti-CD105 antibody [EPR21846] (ab221675)

Blocking/Dilution buffer: 5% NFDM/TBST.
The molecular mass is consistent with the literature (PMID: 8932339). Negative control: NIH/3T3 (PMID: 8194490).

All lanes:
Western blot - Anti-CD105 antibody [EPR21846] (ab221675) at 1/1000 dilution

Lane 1:
bEND.3 (mouse brain endothelioma cell line) whole cell lysate at 20 µg

Lane 2:
NIH/3T3 (mouse embryo fibroblast cell line) whole cell lysate at 20 µg

Lane 3:
Mouse lung 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.

Predicted band size: 70 kDa

Observed band size: 95 kDa

Exposure time: 70s

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