abcam

ab231774

Anti-CD105 antibody [EPR22811-18]

Recombinant | RabMAb | KO Validated | 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	EPR22811-18
Purification technique	Affinity purification Protein A
Concentration	0.51 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	1/500
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/500
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/100
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 ENG

Function	Vascular endothelium glycoprotein that plays an important role in the regulation of angiogenesis (PubMed:21737454, PubMed:23300529). Required for normal structure and integrity of adult vasculature (PubMed:7894484). Regulates the

migration of vascular endothelial cells (PubMed:17540773). Required for normal extraembryonic angiogenesis and for embryonic heart development (By similarity). May regulate endothelial cell shape changes in response to blood flow, which drive vascular remodeling and establishment of normal vascular morphology during angiogenesis (By similarity). May play a critical role in the binding of endothelial cells to integrins and/or other RGD receptors (PubMed:1692830). 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:21737454, PubMed:22347366, PubMed:23300529, PubMed:8370410). Required for GDF2/BMP9 signaling through SMAD1 in endothelial cells and modulates TGFB1 signaling through SMAD3 (PubMed:21737454, PubMed:22347366, PubMed:23300529).

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	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

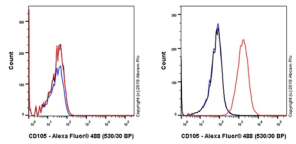
We do not recommend this combination. It is not covered by our product promise.

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.

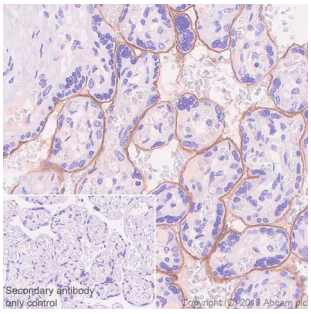
9 product images



Flow Cytometry - Anti-CD105 antibody [EPR22811-18] (ab231774)

CD105 Flow Cytometry staining using rabbit Anti-CD105 antibody

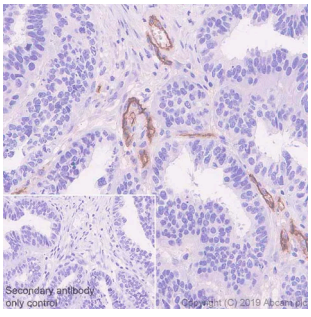
Flow cytometric analysis of Jurkat (human T cell leukemia T lymphocyte, Left) / HUVEC (human umbilical vein endothelial cell, Right) cells labeling CD105 with ab231774 at 1/500 dilution (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabeled control (cells without 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. **Negative control:** Jurkat (PMID: 28351936). Gated on viable cells.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD105 antibody [EPR22811-18] (ab231774)

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

Immunohistochemical analysis of paraffin-embedded human placenta tissue labeling CD105 with ab231774 at 1/100 dilution (5.1 µg/ml) followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on human placental trophoblasts (PMID: 17956952) is observed. The section was incubated with ab231774 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with hematoxylin. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20mins.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

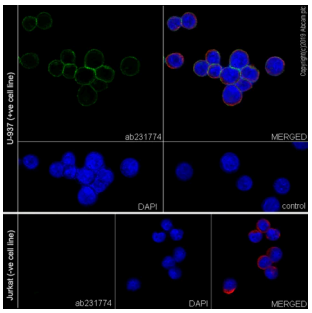


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD105 antibody [EPR22811-18] (ab231774)

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

Immunohistochemical analysis of paraffin-embedded human ovarian carcinoma tissue labeling CD105 with ab231774 at 1/100 dilution (5.1 µg/ml) followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on endothelial cells of human ovarian carcinoma (PMID: 17502949). The section was incubated with ab231774 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with hematoxylin. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20mins.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

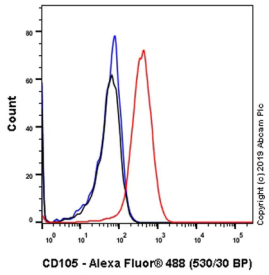


Immunocytochemistry/ Immunofluorescence - Anti-CD105 antibody [EPR22811-18] (ab231774)

CD105 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-CD105 antibody

Immunofluorescent analysis of 100% methanol-fixed U-937 (human histiocytic lymphoma monocyte) cells labeling CD105 with ab231774 at 1/500 dilution, followed by a ab150077 AlexaFluor®488 Goat anti-Rabbit secondary antibody at 1/1000 dilution (Green). Confocal image showing membranous staining in U-937 cells is observed. ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 dilution (Red). The nuclear counterstain was DAPI (Blue).
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is ab150077 AlexaFluor®488 Goat anti-Rabbit secondary at 1/1000 dilution.

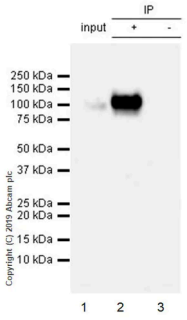
Negative control: Jurkat (PMID: 28351936).



Flow Cytometry - Anti-CD105 antibody [EPR22811-18] (ab231774)

CD105 Flow Cytometry staining using rabbit Anti-CD105 antibody

Flow cytometric analysis of U-937 (human histiocytic lymphoma monocyte) cells labeling CD105 with ab231774 at 1/500 dilution (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control 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. Gated on viable cells.



Immunoprecipitation - Anti-CD105 antibody [EPR22811-18] (ab231774)

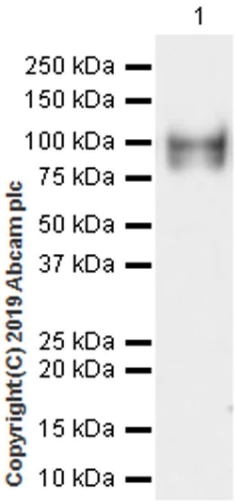
CD105 was immunoprecipitated from 0.35 mg HUVEC (human umbilical vein endothelial cell) whole cell lysate with ab231774 at 1/30 dilution (2µg in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab231774 1/1000 dilution (0.51 µg/ml). VeriBlot for IP secondary antibody (HRP) (ab131366) was used as the secondary antibody at 1/5000 dilution.
Lane 1: HUVEC (human umbilical vein endothelial cell) whole cell lysate 10µg
Lane 2: ab231774 IP in HUVEC whole cell lysate
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab231774 in HUVEC whole cell lysate.

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

Exposure time: 3 mins.

All lanes:
Immunoprecipitation - Anti-CD105 antibody [EPR22811-18] (ab231774)

Predicted band size: 70 kDa



Western blot - Anti-CD105 antibody [EPR22811-18] (ab231774)

CD105 Western blot staining of U937 (human histiocytic lymphoma monocyte), whole cell lysate 40 µg using rabbit Anti-CD105 antibody

Blocking/Diluting buffer and concentration: 5% NFDM/TBST.
The molecular weight observed is consistent with what has been described in the literature (PMID: 8932339).

All lanes:
Western blot - Anti-CD105 antibody [EPR22811-18] (ab231774) at 1/1000 dilution

All lanes:
U937 (human histiocytic lymphoma monocyte), whole cell lysate 40 µg

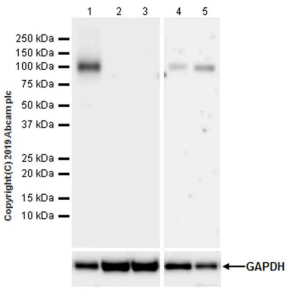
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 70 kDa

Observed band size: 97 kDa

Exposure time: 103s



Western blot - Anti-CD105 antibody [EPR22811-18] (ab231774)

CD105 Western blot staining using rabbit Anti-CD105 antibody

Blocking/Diluting buffer and concentration: 5% NFDM/TBST.
Exposure times: Lanes 1-3: 26 secs; Lanes 4-5: 3 mins.

The molecular weight observed is consistent with what has been described in the literature (PMID: 8932339).

This blot was developed using a higher sensitivity ECL substrate.

Negative control: Jurkat (PMID: 28351936); Raji (PMID: 28351936).

All lanes:
Western blot - Anti-CD105 antibody [EPR22811-18] (ab231774) at 1/1000 dilution

Lane 1:
HUVEC (human umbilical vein endothelial cell), whole cell lysate 20 µg

Lane 2:
Jurkat (human T cell leukemia T lymphocyte), whole cell lysate 20 µg

Lane 3:
Raji (human Burkitt's lymphoma B lymphocyte), whole cell lysate 20 µg

Lane 4:
Human lung tissue lysate 20 µg

Lane 5:
Human placenta tissue lysate 20 µg

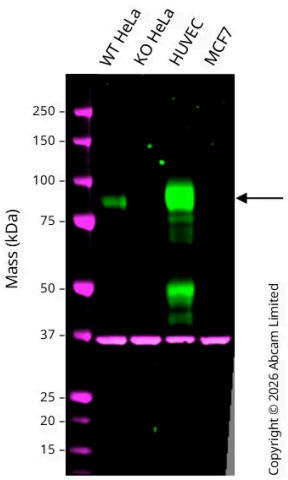
Secondary

Lanes 1 - 3:

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

Lanes 4 - 5:
Western blot - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/1000 dilution

Predicted band size: 70 kDa



Western blot - Anti-CD105 antibody [EPR22811-18] (ab231774)

CD105 Western blot staining using rabbit Anti-CD105 antibody

Western blot: Anti-CD105 antibody [EPR22811-18] ab231774 staining at 1/1000 dilution, shown in green; Mouse anti GAPDH ab8245 loading control staining at 1/20000 dilution, shown in magenta. A band was observed at 90 kDa in Wild-type HeLa UNBOILED cell lysates with no signal observed at this size in ENG knockout HeLa UNBOILED cell line. To generate this image, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 5% Milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit 800CW and Goat anti-Mouse 680RD at 1/20,000 dilution.
All lanes:
Western blot - Anti-CD105 antibody [EPR22811-18] (ab231774) at 1/1000 dilution

Lane 1:
Western blot - Human wild-type HeLa cell line (ab255928) at 20 µg

Lane 2:
Western blot - Human ENG (CD105) knockout HeLa cell line (ab265178) at 20 µg

Lane 3:
HUVEC UNBOILED at 20 µg

Lane 4:
MCF7 UNBOILED at 20 µg

Secondary

All lanes:
Goat anti-Rabbit 800CW & Goat anti-Mouse 680RD at 1/20000 dilution

Performed under reducing conditions.

Predicted band size: 90 kDa

Observed band size: 90 kDa

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