abcam

ab81456

Anti-CD105 antibody [MJ7/18]

Recombinant

Key facts

Isotype	IgG2a
Host species	Rat
Storage buffer	pH: 7.2 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	MJ7/18
Purification technique	Ion exchange chromatography
Concentration	1.035 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

Flow Cyt

Tested

Species	Mouse
Dilution info	1/10 - 1/20
Notes	ab18450 - Rat monoclonal IgG2a, is suitable for use as an isotype control with this antibody. 1/10 - 1/20. Use 10µl of the suggested working dilution to label 1x10^6 cells in 100µl.

WB

Tested

Species	Mouse
Dilution info	-
Notes	-

IHC-Fr

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

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	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 was switched from a hybridoma to a recombinant production format on 27th October 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	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

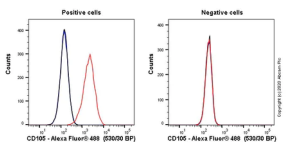
We do not recommend this combination. It is not covered by our product promise.

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.

2 product images



Flow Cytometry - Anti-CD105 antibody [MJ7/18] (ab81456)

CD105 Flow Cytometry staining using rat Anti-CD105 antibody

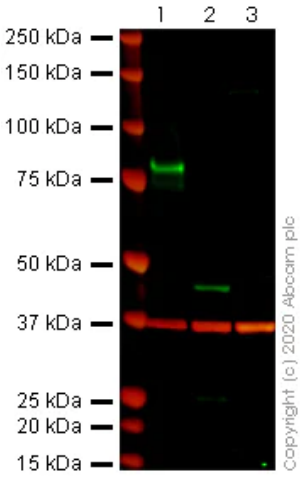
Flow cytometry overlay histogram showing left bEND.3 positive cells and right negative NIH3T3 cells stained with ab81456 (red line). The cells were incubated in 1x PBS containing 10% normal

goat serum to block non-specific protein-protein interaction followed by the antibody (ab81456) ($1x10^6$ in 100 µl at 1 µg/ml) for 30 min on ice.

The secondary antibody Goat anti-rat IgG H&L (Alexa Fluor® 488, pre-adsorbed) (ab150165) was used at 1/2000 for 30 min on ice.

Isotype control antibody (black line) was Rat IgG2aκ (ab18450) used at the same concentration and conditions as the primary antibody. Unlabelled sample (blue line) was also used as a control.

Acquisition of >5000 events were collected using a 50 mW Blue laser (488nm) and 530/30 bandpass filter.



Western blot - Anti-CD105 antibody [MJ7/18] (ab81456)

CD105 Western blot staining using rat Anti-CD105 antibody

Lanes 1 - 3: Merged signal (red and green). Green - ab81456 observed at 80 kDa. Red - loading control ab181602 (Rabbit Anti-GAPDH antibody [EPR16891]) observed at 37 kDa.
ab81456 was shown to react with CD105 in Western blot.

Membranes were blocked in 3% milk before incubation with ab81456 and ab181602 (Rabbit Anti-GAPDH antibody [EPR16891]) overnight at 4 °C at 5 µg/ml and a 1 in 20000 dilution respectively.

Blots were incubated with Goat anti-Rat IgG H&L (IRDye® 800CW) preabsorbed (ab253031) and Goat anti-Rabbit IgG H&L (IRDye$®$ 680RD) preabsorbed (ab216777) secondary antibodies at 1 in 20000 dilution for 1 h at room temperature before imaging.

Additional band(s) were observed at 45 kDa, these band(s) may represent alternative splice variants. This has not been investigated further.

Lane 1: Mouse Lung tissue lysate (40 µg)
Lane 2: Mouse Liver tissue lysate (40 µg)
Lane 3: NIH/3T3 whole cell lysate (40 µg)

All lanes:
Western blot - Anti-CD105 antibody [MJ7/18] (ab81456) at 5 µg/mL

Lane 1:
Mouse Lung tissue lysate at 40 µg

Lane 2:
Mouse Liver tissue lysate at 40 µg

Lane 3:
NIH/3T3 whole cell lysate at 40 µg

Predicted band size: 70 kDa

Observed band size: 80 kDa

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