Mouse Endoglin/CD105 Antibody

Antigen Affinity-purified Polyclonal Goat IgG

Catalog Number: AF1320

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse Endoglin in direct ELISAs and Western blots. In direct ELISAs, less than 20% cross-reactivity with recombinant rat Endoglin is observed and less than 5% cross-reactivity with recombinant human Endoglin is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse Endoglin/CD105 Glu27-Gly581 Accession # Q8K100
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 μm filtered solution in PBS.

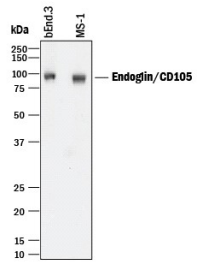
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	0.5 µg/mL	See Below
Flow Cytometry	2.5 µg/10^6 cells	MS-1 mouse cell line
Immunocytochemistry	5-15 µg/mL	See Below
Immunohistochemistry	5-15 µg/mL	See Below
Simple Western	5 µg/mL	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

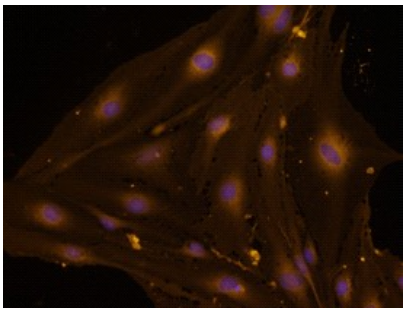
DATA

Western Blot



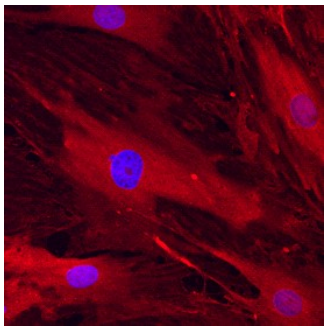
Detection of Mouse Endoglin/CD105 by Western Blot. Western blot shows lysates of bEnd.3 mouse endothelioma cell line and MS-1 mouse pancreatic islet endothelial cell line. PVDF membrane was probed with 0.5 µg/mL of Goat Anti-Mouse Endoglin/CD105 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1320) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF017). A specific band was detected for Endoglin/CD105 at approximately 90-95 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Immunocytochemistry



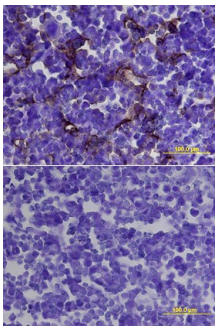
Endoglin/CD105 in MS-1 Mouse Cell Line. Endoglin/CD105 was detected in immersion fixed MS-1 mouse pancreatic islet endothelial cell line using Goat Anti-Mouse Endoglin/CD105 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1320) at 10 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Goat IgG Secondary Antibody (yellow; Catalog # NL001) and counter-stained with DAPI (blue). View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

Immunocytochemistry



Endoglin/CD105 in Rat Mesenchymal Stem Cells. Endoglin/CD105 was detected in immersion fixed rat mesenchymal stem cells using Goat Anti-Mouse Endoglin/CD105 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1320) at 10 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Goat IgG Secondary Antibody (red; Catalog # NL001) and counterstained with DAPI (blue). Specific staining was localized to cytoplasm. View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

Immunohistochemistry



Endoglin/CD105 in Mouse Embryo. Endoglin/CD105 was detected in immersion fixed frozen sections of mouse embryo (E13-15) using Goat Anti-Mouse Endoglin/CD105 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1320) at 15 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS008) and counterstained with hematoxylin (blue). Lower panel shows a lack of labeling if primary antibodies are omitted and tissue is stained only with secondary antibody followed by incubation with detection reagents. View our protocol for Chromogenic IHC Staining of Frozen Tissue Sections.

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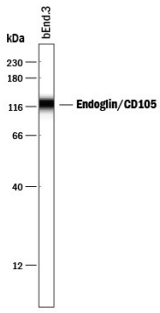
Simple Western



Detection of Mouse Endoglin/CD105 by Simple Western™. Simple Western lane view shows lysates of bEnd.3 mouse endothelioma cell line, loaded at 0.2 mg/mL. A specific band was detected for Endoglin/CD105 at approximately 121 kDa (as indicated) using 5 µg/mL of Goat Anti-Mouse Endoglin/CD105 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1320) followed by 1:50 dilution of HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF109). This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Endoglin (CD105) is a 90 kDa type I transmembrane glycoprotein of the zona pellucida (ZP) family of proteins (1-3). Endoglin and betaglycan/TβRIII are type III receptors for TGF beta superfamily ligands, sharing 71% amino acid (aa) identity within the transmembrane (TM) and cytoplasmic domains. Endoglin is highly expressed on proliferating vascular endothelial cells, chondrocytes, and syncytiotrophoblasts of term placenta, with lower amounts on hematopoietic, mesenchymal and neural crest stem cells, activated monocytes, and lymphoid and myeloid leukemic cells (2-5). Mouse Endoglin cDNA encodes 653 aa including a 26 aa signal sequence, a 555 aa extracellular domain (ECD) with an orphan domain and a two-part ZP domain, a TM domain, and a 47 aa cytoplasmic domain (1-3). A mouse isoform with a 35 aa cytoplasmic domain (S-endoglin) can oppose effects of long (L) Endoglin (6, 7). The mouse Endoglin ECD shares 69%, 84%, 62%, 63%, and 66% aa identity with human, rat, bovine, porcine, and canine Endoglin, respectively. Endoglin homodimers interact with TGF-β1 and TGF-β3 (but not TGF-β2) but only after binding TβRII (8). Similarly, they interact with activin-A and BMP-7 via activin type IIA or B receptors, and with BMP-2 via BMPR-1A/ALK-3 or BMPR-1B/ALK-6 (9). BMP-9, however, is reported to bind Endoglin directly (10). Endoglin modifies ligand-induced signaling in multiple ways. For example, expression of Endoglin can inhibit TGF-β1 signals but enhance BMP7 signals in the same myoblast cell line (11). In endothelial cells, Endoglin inhibits TβRI/ALK5, but enhances ALK1-mediated activation (12). Deletion of mouse Endoglin causes lethal vascular and cardiovascular defects, and human Endoglin haploinsufficiency can a cause the vascular disorder, hereditary hemorrhagic telangiectasia type I (13, 14). These abnormalities confirm the essential function of Endoglin in differentiation of smooth muscle, angiogenesis, and neovascularization (2-4, 12-14). In preeclampsia of pregnancy, high levels of proteolytically generated soluble Endoglin and VEGF R1 (sFlt-1), along with low placental growth factor (PlGF), are pathogenic due to antiangiogenic activity (15).

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