

DESCRIPTION

Species Reactivity	Rat
Specificity	Detects rat Endoglin/CD105 in direct ELISAs and Western blots. In direct ELISAs, approximately 75% cross reactivity with recombinant mouse Endoglin is observed and approximately 50% cross reactivity with recombinant human Endoglin is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant rat Endoglin/CD105 Met1-Gly578 Accession # Q6Q3E8
Conjugate	Alexa Fluor 350 Excitation Wavelength: 346 nm Emission Wavelength: 442 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide
*Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.	

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.

Western Blot	Optimal dilution of this antibody should be experimentally determined.
Immunocytochemistry	Optimal dilution of this antibody should be experimentally determined.
Immunohistochemistry	Optimal dilution of this antibody should be experimentally determined.
Immunoprecipitation	Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

BACKGROUND

Endoglin (CD105) is a 90 kDa type I transmembrane glycoprotein of the zona pellucida (ZP) family of proteins. Endoglin and betaglycan/TβRIII are type III receptors for TGF-β superfamily ligands, sharing 71% aa identity with 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. Rat Endoglin cDNA encodes 650 amino acids (aa) including a 25 aa signal sequence, a 553 aa extracellular domain (ECD) with an orphan domain and a two-part ZP domain, a TM domain and a 51 aa cytoplasmic domain. In human and mouse, an isoform with a 14 aa cytoplasmic domain (S-endoglin) can oppose effects of long (L) Endoglin. In rat, a potential isoform with a 100 aa cytoplasmic tail (49 aa inserted after aa 610) diverges at the same aa as S-endoglin. The rat Endoglin ECD shares 84%, 70%, 68%, 64%, and 62% aa identity with mouse, human, canine, porcine, and bovine Endoglin, respectively. Endoglin homodimers interact with TGF-β1 and TGF-β3 (but not TGF-β2), but only after binding TβRII. 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. BMP-9, however, is reported to bind Endoglin directly. 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. In endothelial cells, Endoglin inhibits TβRI/ALK-5, but enhances ALK-1-mediated activation. Deletion of mouse Endoglin causes lethal vascular and cardiovascular defects, and human Endoglin haploinsufficiency can cause the vascular disorder, hereditary hemorrhagic telangiectasia type I. These abnormalities confirm the essential function of Endoglin in differentiation of smooth muscle, angiogenesis, and neovascularization. In preeclampsia of pregnancy, high levels of proteolytically generated soluble Endoglin and VEGF R1 (sFLT1), along with low placental growth factor (PlGF), are pathogenic due to anti-angiogenic activity.

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