

## DESCRIPTION

<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human Endoglin in ELISAs and Western blots. In sandwich ELISAs, less than 0.2% cross-reactivity with recombinant mouse Endoglin, recombinant human (rh) Activin A, and rhTGF- $\beta$ 1 is observed.
<b>Source</b>	Polyclonal Goat IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant human Endoglin Glu26-Gly256 Accession # Q5T9B9
<b>Formulation</b>	Lyophilized from a 0.2 $\mu$ m filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

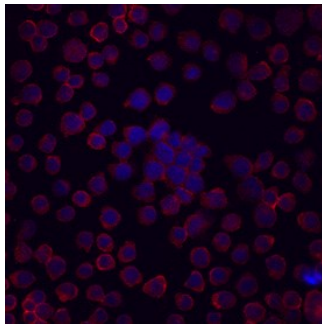
## APPLICATIONS

**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
<b>Western Blot</b>	0.1 $\mu$ g/mL	Recombinant Human Endoglin/CD105 (Catalog # 1097-EN)
<b>Immunocytochemistry</b>	5-15 $\mu$ g/mL	See Below
<b>Immunohistochemistry</b>	5-15 $\mu$ g/mL	See Below
<b>Human Endoglin/CD105 Sandwich Immunoassay</b>		<b>Reagent</b>
<b>ELISA Capture</b>	2-8 $\mu$ g/mL	Human Endoglin/CD105 Antibody (Catalog # MAB10972)
<b>ELISA Detection</b>	0.1-0.4 $\mu$ g/mL	Human Endoglin/CD105 Biotinylated Antibody (Catalog # BAF1097)
<b>Standard</b>		Recombinant Human Endoglin/CD105 (Catalog # 1097-EN)

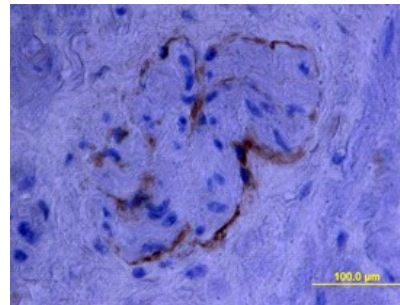
## DATA

### Immunocytochemistry



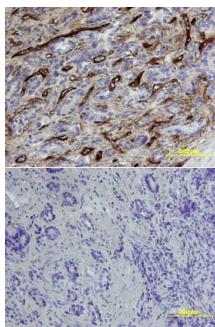
**Endoglin/CD105 in U937 Human Cell Line.** Endoglin/CD105 was detected in immersion fixed U937 human histiocytic lymphoma cell line using Goat Anti-Human Endoglin/CD105 Biotinylated Antigen Affinity-purified Polyclonal Antibody (Catalog # BAF1097) at 10  $\mu$ g/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Streptavidin (red, Catalog # NL999) and counterstained with DAPI (blue). View our protocol for [Fluorescent ICC Staining of Cells on Coverslips](#).

### Immunohistochemistry



**Endoglin/CD105 in Human Prostate.** Endoglin/CD105 was detected in immersion fixed paraffin-embedded sections of human prostate using Goat Anti-Human Endoglin/CD105 Biotinylated Antigen Affinity-purified Polyclonal Antibody (Catalog # BAF1097) at 15  $\mu$ g/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). View our protocol for [Chromogenic IHC Staining of Paraffin-embedded Tissue Sections](#).

### Immunohistochemistry



**Endoglin/CD105 in Human Prostate.** Endoglin/CD105 was detected in immersion fixed paraffin-embedded sections of human prostate array using Goat Anti-Human Endoglin/CD105 Biotinylated Antigen Affinity-purified Polyclonal Antibody (Catalog # BAF1097) at 15  $\mu$ g/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 Paraffin-embedded Tissue Sections](#).

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 0.2 mg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<p><b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b></p> <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>● 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

**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 in 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). Human endoglin cDNA encodes 658 amino acids including a 25 aa signal sequence, a 561 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). An isoform with a 14 aa cytoplasmic domain (S-endoglin) can oppose effects of long (L) endoglin (6, 7). The human endoglin ECD shares 65-72% aa identity with mouse, rat, bovine, porcine, and canine endoglin. 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 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 anti-angiogenic activity (15).

**References:**

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