CELL APPLICATIONS, INC.

Endoglin (CD105) Antibody

Cat. No. CA1725

Applications:	**WB, IHC**
Detected MW:	**95 kDa**
Species & Reactivity:	**Human, Mouse, Rat, Rabbit**
Isotype:	**Rabbit IgG**

BACKGROUND

Endoglin (CD105) is a transmembrane glycoprotein expressed on activated vascular endothelial cells. It is an accessory protein of the transforming growth factor-beta (TGF-beta) receptor system and composed of two disulfide-linked subunits of 95 kDa each forming a 180-kDa homodimeric mature protein. Endoglin is expressed as two isoforms, designated long (L-CD105) and short (S-CD105), based on the length of the cytoplasmic domain. It is a marker of activated endothelium, and its vascular expression is limited to proliferating cells.[1] Mutation of the endoglin gene is associated with hereditary hemorrhagic telangiectasias, or Osler-Weber-Rendu syndrome. In addition to its expression on endothelial cells, endoglin is found on the surface of several other cell types. The expression of endoglin is elevated on the endothelial cells of healing wounds, developing embryos, inflammatory tissues, and solid tumors. Several studies identified endoglin expression in several solid tumor types, with the level of expression correlating with various clinicopathologic factors including decreased survival and presence of metastases.[2] Attempts to target endoglin and the cells that express this protein in tumor-bearing mice have yielded promising results.

Endoglin signaling is initiated by binding of TGF-beta and results in a series of activation steps leading to transcriptional activity. Endoglin binds several components of the TGF- superfamily including activin-A, BMP-7 and BMP-2. In particular, it binds TGF- 1 and - 3 with high affinity by associating with the TGF- type II receptor. TGF-beta ligand binds to a TbetaR-II homodimer, which then recruits the type I receptor ALK1 or ALK5 to form a heterotetrameric receptor complex. In endoglin-expressing cells, endoglin is included as a dimer in this receptor complex. TbetaR-II then phosphorylates either ALK1 or ALK5 in a highly conserved glycine/serine-rich cytoplasmic domain, causing a conformational change in the receptor. Signaling is propagated to the nucleus via phosphorylation of Smad proteins, which act as transcriptional coactivators or corepressors.[3]

References:

1. Letamendia, A. et al: J. Biol. Chem. 273:33011-9, 1998
2. Fonsatti, E. Et al: Oncogene 22:6557-63, 2003
3. lebrin, F. Et al: Cardiovasc. Res. 65:599–608, 2005

TECHNICAL INFORMATION

Source: Endoglin (CD105) is a homodimeric transmembrane glycoprotein highly expressed by endothelial cells. It is a component of the transforming growth factor beta receptor complex as it binds TGFB1 and TGFB3 with high affinity. Mutations in the endoglin gene produce hereditary hemorrhagic telangiectasia.

Specificity and Sensitivity: Anti-CD105 reacts specifically with CD105 of human, mouse & rat origin in immunostaining and western blotting, no cross-reactivity with other members of the family.

Storage Buffer: PBS and 50% glycerol.

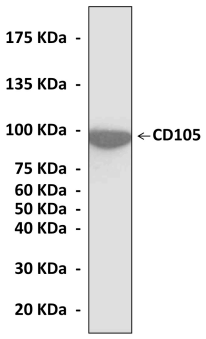
Storage: Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

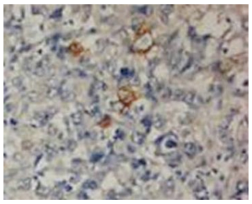
APPLICATIONS

Application:	*Dilution:
WB	1:50 - 1000
IP	n/d
IHC	1:50 - 200
ICC	n/d
FACS	n/d

**Optimal dilutions must be determined by end user.*

QUALITY CONTROL DATA





Top: Detection of CD105 from rat spleen tissue lysate in Western blot assay, using Anti-CD105. **Bottom:** Immunohistochemical staining of paraffin-embedded human kidney cancer tissue, using Anti-CD105.