SANTA CRUZ BIOTECHNOLOGY, INC.

Endoglin (P4A4): sc-20072

The Power to Question

BACKGROUND

Hereditary hemorrhagic telangiectasia (HHT) is an autosomal dominant disorder characterized by vascular abnormalities such as dilated vessels, hemorrhages, liver and lung congestion, and brain or heart ischemia. Mutations in two genes, Endoglin (also designated CD105) and ALK-1 (activin receptor-like kinase 1, also designated TGFβ superfamily RI), are responsible for HHT. Endoglin is mutated in HHT1, and ALK-1 is mutated in HHT2, both of which are thought to be caused by haploinsufficiency. Endoglin and ALK-1 are type III and type I members of the TGFβ receptor superfamily, respectively, that are expressed on vascular endothelial cells. Endoglin can only bind ligands of the TGFβ superfamily via association with the respective ligand binding receptors for TGFβ1, TGFβ3, Activin-A, BMP-2 and BMP-7. The human ALK-1 gene encodes two protein species which exist as a result of either glycosylation or alternative splicing events. ALK-1 preferentially binds TGFβ1 and is expressed in bone marrow stromal cells, lung, brain, kidney and spleen.

CHROMOSOMAL LOCATION

Genetic locus: ENG (human) mapping to 9q34.11; Eng (mouse) mapping to 2 B.

SOURCE

Endoglin (P4A4) is a mouse monoclonal antibody raised against Endoglin of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available azide-free for activation of T cell binding to endothelium, sc-20072 L, 200 µg/0.1 ml.

Endoglin (P4A4) is available conjugated to agarose (sc-20072 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-20072 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-20072 PE), fluorescein (sc-20072 FITC), Alexa Fluor® 488 (sc-20072 AF488), Alexa Fluor® 546 (sc-20072 AF546), Alexa Fluor® 594 (sc-20072 AF594) or Alexa Fluor® 647 (sc-20072 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-20072 AF680) or Alexa Fluor® 790 (sc-20072 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Endoglin (P4A4) is recommended for detection of Endoglin dimer under non-reducing conditions, and Endoglin monomer under reducing conditions of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Endoglin siRNA (h): sc-35302, Endoglin siRNA (m): sc-35303, Endoglin shRNA Plasmid (h): sc-35302-SH, Endoglin shRNA Plasmid (m): sc-35303-SH, Endoglin shRNA (h) Lentiviral Particles: sc-35302-V and Endoglin shRNA (m) Lentiviral Particles: sc-35303-V.

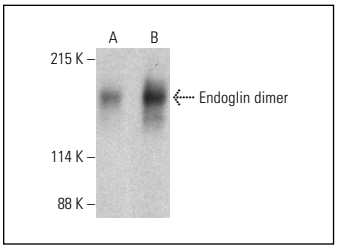
Molecular Weight of reduced Endoglin: 84 kDa.

Molecular Weight of non-reduced Endoglin: 130 kDa.

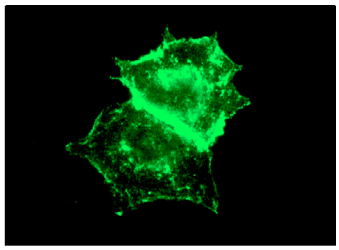
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



Endoglin (P4A4): sc-20072. Western blot analysis of Endoglin expression in human spleen (**A**) and human kidney (**B**) tissue extracts under non-reducing conditions.



Endoglin (P4A4): sc-20072. Immunofluorescence staining of methanol-fixed HUV-EC-C cells showing membrane localization.

SELECT PRODUCT CITATIONS

1. Meurer, S.K., et al. 2004. Identification of Endoglin in rat hepatic stellate cells: new insights into TGFβ receptor signaling. J. Biol. Chem. 280: 3078-3087.
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3. Fang, M., et al. 2013. Quantum dots-based *in situ* molecular imaging of dynamic changes of collagen IV during cancer invasion. Biomaterials 34: 8708-8717.
4. Hu, W.Q., et al. 2014. Tumor invasion unit in gastric cancer revealed by QDs-based *in situ* molecular imaging and multispectral analysis. Biomaterials 35: 4125-4132.
5. Latham, S.L., et al. 2015. Immuno-analysis of microparticles: probing at the limits of detection. Sci. Rep. 5: 16314.
6. Gallardo-Vara, E., et al. 2019. Endoglin protein interactome profiling identifies TRIM21 and galectin-3 as new binding partners. Cells 8: 1082.
7. Qin, S.H., et al. 2020. Resveratrol promotes tumor microvessel growth via endoglin and extracellular signal-regulated kinase signaling pathway and enhances the anticancer efficacy of gemcitabine against lung cancer. Cancers 12: 974.
8. Harper, S., et al. 2020. Portal venous repopulation of decellularised rat liver scaffolds with syngeneic bone marrow stem cells. J. Tissue Eng. Regen. Med. 14: 1502-1512.
9. Meligy, F.Y., et al. 2022. Therapeutic potential of mesenchymal stem cells versus ω n - 3 polyunsaturated fatty acids on gentamicin-induced cardiac degeneration. Pharmaceutics 14: 1322.

RESEARCH USE

For research use only, not for use in diagnostic procedures.