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ACVRL1 Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7807a

Product Information

Application	WB, FC, IHC-P, E
Primary Accession	P37023
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	56124
Antigen Region	38-68

Additional Information

Gene ID	94
Other Names	Serine/threonine-protein kinase receptor R3, SKR3, Activin receptor-like kinase 1, ALK-1, TGF-B superfamily receptor type I, TSR-I, ACVRL1, ACVRLK1, ALK1
Target/Specificity	This ACVRL1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 38-68 amino acids from the N-terminal region of human ACVRL1.
Dilution	WB~~1:1000 FC~~1:10~50 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	ACVRL1 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	ACVRL1
Synonyms	ACVRLK1, ALK1
Function	Type I receptor for TGF-beta family ligands BMP9/GDF2 and BMP10 and

important regulator of normal blood vessel development. On ligand binding, forms a receptor complex consisting of two type II and two type I transmembrane serine/threonine kinases. Type II receptors phosphorylate and activate type I receptors which autophosphorylate, then bind and activate SMAD transcriptional regulators. May bind activin as well.

Cellular Location Cell membrane; Single-pass type I membrane protein

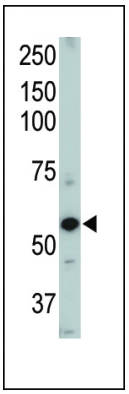
Background

ACVRL1 is a type I cell-surface receptor for the TGF-beta superfamily of ligands. It shares with other type I receptors a high degree of similarity in serine-threonine kinase subdomains, a glycine- and serine-rich region (called the GS domain) preceding the kinase domain, and a short C-terminal tail. This protein, sometimes termed ALK1, shares similar domain structures with other closely related ALK or activin receptor-like kinase proteins that form a subfamily of receptor serine/threonine kinases. Mutations in this gene are associated with hemorrhagic telangiectasia type 2, also known as Rendu-Osler-Weber syndrome 2.

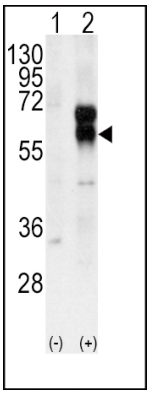
References

Strausberg, R.L., et al., Proc. Natl. Acad. Sci. U.S.A. 99(26):16899-16903 (2002).
Berg, J.N., et al., Am. J. Hum. Genet. 61(1):60-67 (1997).
Johnson, D.W., et al., Nat. Genet. 13(2):189-195 (1996).
ten Dijke, P., et al., Oncogene 8(10):2879-2887 (1993).
Attisano, L., et al., Cell 75(4):671-680 (1993).

Images

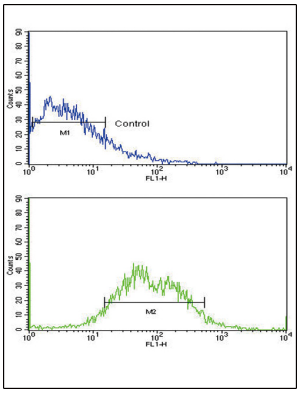


Western blot of ACVRL1 Pab (Cat. #AP7807a). TOP LEFT: Mouse heart tissue lysate.

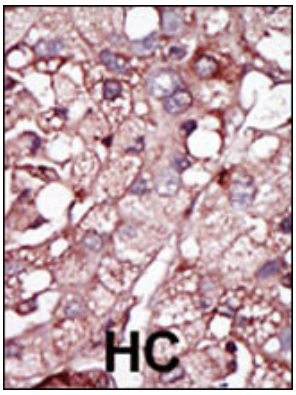


Western blot analysis of ACVRL1 (arrow) using rabbit polyclonal ACVRL1 Antibody (N-term) (Cat. #AP7807a). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected with the ACVRL1 gene (Lane 2) (Origene Technologies).

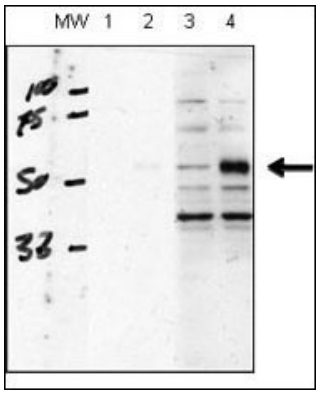
Flow cytometric analysis of HepG2 cells using ACVRL1 Antibody (N-term) (bottom histogram) compared to a negative control cell (top histogram). FITC-conjugated



goat-anti-rabbit secondary antibodies were used for the analysis.



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.



human chondrocytes (C28/I2 cells), transfected with empty vector (lane 1, 3) or ACVRL1(lane 2, 4). RIPA lysis buffer, 20 ug/lane of protein, primary antibody dilution 1:1000, blocking solution is 5% milk in TBST (lane 1 and 2), 5% BSA in TBST (lane 3 and 4). Data courtesy of Kenneth Finnson, Montreal General Hospital.

Citations

- MiR-199b-5p Suppresses Tumor Angiogenesis Mediated by Vascular Endothelial Cells in Breast Cancer by Targeting ALK1
- Identification of bone morphogenetic protein 9 (BMP9) as a novel profibrotic factor in vitro.
- Regulation of endothelial barrier function by TGF- type I receptor ALK5: potential role of contractile mechanisms and heat shock protein 90.
- ALK1 opposes ALK5/Smad3 signaling and expression of extracellular matrix components in human chondrocytes.
- LC-MS/MS analysis of apical and basolateral plasma membranes of rat renal collecting duct cells.
- ALK5 and Smad4 are involved in TGF-beta1-induced pulmonary endothelial permeability.