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Activin A Receptor Type IB (ACVR1B) Antibody (Center)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7801C

Specification

Activin A Receptor Type IB (ACVR1B) Antibody (Center) - Product Information

Application	**WB, FC,E**
Primary Accession	P36896
Other Accession	P80202, Q61271
Reactivity	**Human, Mouse**
Predicted	**Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Antigen Region	**134-164**

Activin A Receptor Type IB (ACVR1B) Antibody (Center) - Additional Information

Gene ID 91

Other Names
Activin receptor type-1B, Activin receptor type IB, ACTR-IB, Activin receptor-like kinase 4, ALK-4, Serine/threonine-protein kinase receptor R2, SKR2, ACVR1B, ACVRLK4, ALK4

Target/Specificity
This Activin A Receptor Type IB (ACVR1B) antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 134-164 amino acids from the Central region of human Activin A Receptor Type IB (ACVR1B).

Dilution
WB~~1:1000
FC~~1:10~50

Format
Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.

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
Activin A Receptor Type IB (ACVR1B) Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Activin A Receptor Type IB (ACVR1B) Antibody (Center) - Protein Information

Name ACVR1B

Synonyms ACVRLK4, ALK4

Function Transmembrane serine/threonine kinase activin type-1 receptor forming an activin receptor complex with activin receptor type-2 (ACVR2A or ACVR2B). Transduces the activin signal from the cell surface to the cytoplasm and is thus regulating a many physiological and pathological processes including neuronal differentiation and neuronal survival, hair follicle development and cycling, FSH production by the pituitary gland, wound healing, extracellular matrix production, immunosuppression and carcinogenesis. Activin is also thought to have a paracrine or autocrine role in follicular development in the ovary. Within the receptor complex, type-2 receptors (ACVR2A and/or ACVR2B) act as a primary activin receptors whereas the type-1 receptors like ACVR1B act as downstream transducers of activin signals. Activin binds to type-2 receptor at the plasma membrane and activates its serine- threonine kinase. The activated receptor type-2 then phosphorylates and activates the type-1 receptor such as ACVR1B. Once activated, the type- 1 receptor binds and phosphorylates the SMAD proteins SMAD2 and SMAD3, on serine residues of the C-terminal tail. Soon after their association with the activin receptor and subsequent phosphorylation, SMAD2 and SMAD3 are released into the cytoplasm where they interact with the common partner SMAD4. This SMAD complex translocates into the nucleus where it mediates activin-induced transcription. Inhibitory SMAD7, which is recruited to ACVR1B through FKBP1A, can prevent the association of SMAD2 and SMAD3 with the activin receptor complex, thereby blocking the activin signal. Activin signal transduction is also antagonized by the binding to the receptor of inhibin-B via the IGSF1 inhibin coreceptor. ACVR1B also phosphorylates TDP2.

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

Tissue Location
Expressed in many tissues, most strongly in kidney, pancreas, brain, lung, and liver

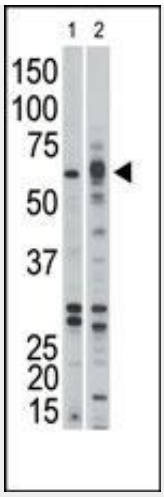
Activin A Receptor Type IB (ACVR1B) Antibody (Center) - Protocols

Provided below are standard protocols that you may find useful for product applications.

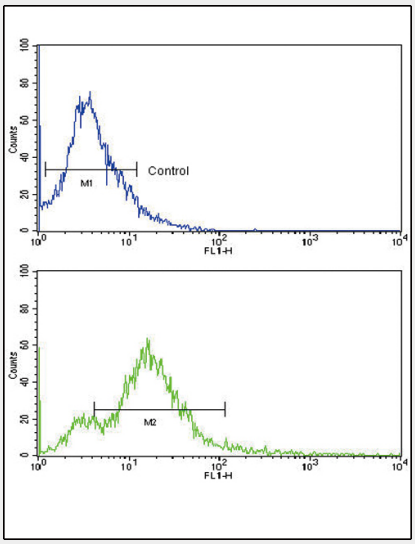
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Activin A Receptor Type IB (ACVR1B) Antibody (Center) - Images

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The anti-ACVR1B Pab (Cat. #AP7801c) is used in Western blot to detect ACVR1B in Jurkat (1) and mouse kidney (2) tissue lysates.



Flow cytometric analysis of 293 cells using Activin A Receptor Type IB (ACVR1B) Antibody (Center) (bottom histogram) compared to a negative control (top histogram). FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

Activin A Receptor Type IB (ACVR1B) Antibody (Center) - Background

Activins are dimeric growth and differentiation factors which belong to the transforming growth factor-beta (TGF-beta) superfamily of structurally related signaling proteins. Activins signal through a heteromeric complex of receptor serine kinases which include at least two type I (I and IB) and two type II (II and IIB) receptors. These receptors are all transmembrane proteins, composed of a ligand-binding extracellular domain with a cysteine-rich region, a transmembrane domain, and a cytoplasmic domain with predicted serine/threonine specificity. Type I receptors are essential for signaling, and type II receptors are required for binding ligands and for expression of type I receptors. Type I and II receptors form a stable complex after ligand binding, resulting in phosphorylation of type I receptors by type II receptors. The gene for ACVR1B (activin A type IB receptor) is composed of 11 exons. Alternative splicing and alternative polyadenylation result in 3 fully described transcript variants. The mRNA expression of variants 1, 2, and 3 is confirmed, and a potential fourth variant contains an alternative exon 8 and lacks exons 9 through 11, but its mRNA expression has not been confirmed.

Activin A Receptor Type IB (ACVR1B) Antibody (Center) - References

Harrison, C.A., et al., J. Biol. Chem. 278(23):21129-21135 (2003).
Mukasa, C., et al., Endocrinology 144(4):1603-1611 (2003).
Danila, D.C., et al., J. Clin. Endocrinol. Metab. 87(10):4741-4746 (2002).
Schneider-Kolsky, M.E., et al., Placenta 23(4):294-302 (2002).
Roijer, E., et al., Mamm. Genome 9(3):266-268 (1998).