

**Activin A Receptor Type IB (ACVR1B) Antibody (N-term)
Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7801a**

Specification

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

Application	WB, FC,E
Primary Accession	P36896
Other Accession	P80202
Reactivity	Human, Mouse, Rat
Predicted	Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit Ig
Antigen Region	39-68

Activin A Receptor Type IB (ACVR1B) Antibody (N-term) - 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 39-68 amino acids from the N-terminal region of human Activin A Receptor Type IB (ACVR1B).

Dilution

WB~~1:1000
FC~~1:25

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 (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Activin A Receptor Type IB (ACVR1B) Antibody (N-term) - 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

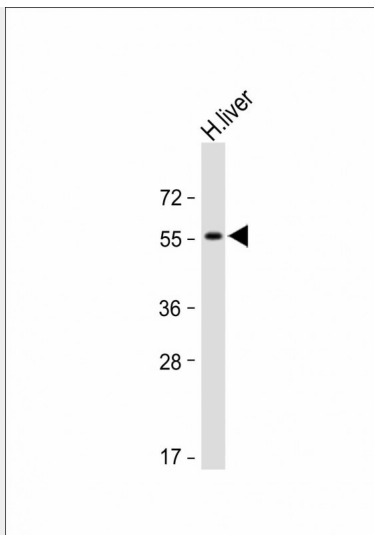
Activin A Receptor Type IB (ACVR1B) Antibody (N-term) - Protocols

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

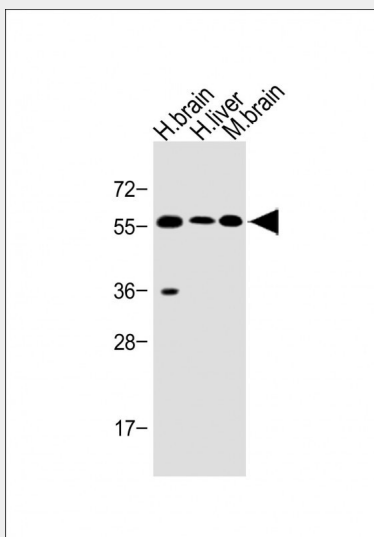
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

Activin A Receptor Type IB (ACVR1B) Antibody (N-term) - Images

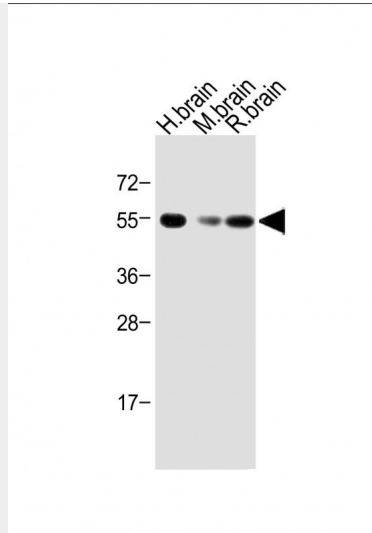




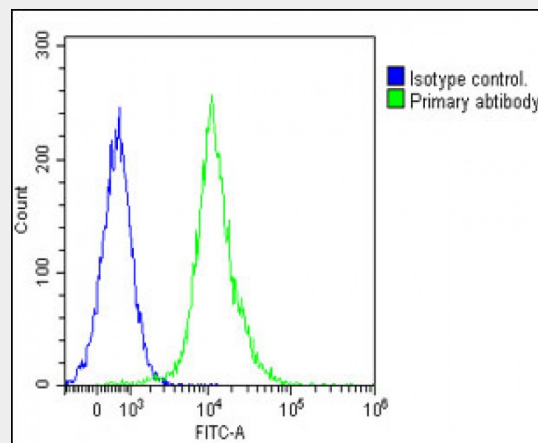
Anti-Activin A Receptor Type IB (ACVR1B) Antibody (N-term) at 1:1000 dilution + Human liver lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 55 kDa Blocking/Dilution buffer: 5% NFDm/TBST.



All lanes : Anti-Activin A Receptor Type IB (ACVR1B) Antibody (N-term) at 1:1000 dilution Lane 1: Human brain lysate Lane 2: Human liver lysate Lane 3: Mouse brain lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 55 kDa Blocking/Dilution buffer: 5% NFDm/TBST.



All lanes : Anti-Activin A Receptor Type IB (ACVR1B) Antibody (N-term) at 1:1000 dilution Lane 1: Human brain lysate Lane 2: Mouse brain lysate Lane 3: Rat brain lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 55 kDa Blocking/Dilution buffer: 5% NFDN/TBST.



Overlay histogram showing Jurkat cells stained with AP7801a(green line). The cells were fixed with 2% paraformaldehyde and then permeabilized with 90% methanol for 10 min. The cells were then incubated in 2% bovine serum albumin to block non-specific protein-protein interactions followed by the antibody (1:25 dilution) for 60 min at 37°C. The secondary antibody used was Goat-Anti-Rabbit IgG, DyLight® 488 Conjugated Highly Cross-Adsorbed at 1/200 dilution for 40 min at Room temperature. Isotype control antibody (blue line) was rabbit IgG1 (1µg/1x10⁶ cells) used under the same conditions. Acquisition of >10, 000 events was performed.

Activin A Receptor Type IB (ACVR1B) Antibody (N-term) - 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 (N-term) - 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).