

Rabbit Anti-ACVR1B antibody

SL6018R

Product Name	ACVR1B
Chinese Name	激活素 A 受体 1B 抗体
Alias	Activin A receptor type 1B; Activin A receptor type II like kinase 4; Activin A type 1B receptor; Activin A type IB receptor; Activin receptor like kinase 4; Activin receptor type 1B; Activin receptor type IB; Activin receptor type-1B; Activin receptor-like kinase 4; ACTR IB; ACTR-IB; ACTRIB; ACV1B_HUMAN; ACVR 1B; ACVRLK 4; ACVRLK4; ALK 4; ALK-4; ALK4; Serine(threonine) protein kinase receptor R2; Serine/threonine-protein kinase receptor R2; SKR 2; SKR2.
Research Area	Cell biology immunology Signal transduction Stem cells Kinases and Phosphatases Binding protein
Immunogen Species	Rabbit
Clonality	Polyclonal
React Species	(predicted: Human, Mouse, Rat, Dog, Pig, Cow, Horse, Rabbit,) IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500,ELISA=1:5000-10000 (Paraffin sections need antigen repair)
Applications	not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Theoretical molecular weight	55kDa
Cellular localization	The cell membrane
Form	Liquid
Concentration	1mg/ml
immunogen	KLH conjugated synthetic peptide derived from human ACVR1B: 51-150/505 <Extracellular>
Lsotype	IgG
Purification	affinity purified by Protein A
Buffer Solution	1M TBS(pH7.4) with 1% BSA, 3% Proclin300 and 50% Glycerol.
Storage	Shipped at 4°C. Store at -20 °C for one year. Avoid repeated freeze/thaw cycles.

Attention

This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.

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[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.

Product Detail

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

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Subunit:

Forms an activin receptor complex with activin receptor type-2 (ACVR2A or ACVR2B). Interacts with TDP2 (By similarity).

Subcellular Location:

Cell membrane; Single-pass type I membrane protein.

Tissue Specificity:

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

Post-translational modifications:

Autophosphorylated. Phosphorylated by activin receptor type-2 (ACVR2A or ACVR2B) in response to activin-binding at serine and threonine residues in the GS domain. Phosphorylation of ACVR1B by activin receptor type-2 regulates association with SMAD7. [PTM] Ubiquitinated. Level of ubiquitination is regulated by the SMAD7-SMURF1 complex.

DISEASE:

Note=ACVRIB is abundantly expressed in systemic sclerosis patient fibroblasts and production of collagen is also induced by activin-A/INHBA. This suggests that the activin/ACRV1B signaling mechanism is involved in systemic sclerosis.

Similarity:

Belongs to the protein kinase superfamily. TKL Ser/Thr protein kinase family. TGFB receptor subfamily.

SWISS:

P36896

Gene ID:
91

Database links:

[Entrez Gene: 91](#) Human

[Entrez Gene: 11479](#) Mouse

[Entrez Gene: 29381](#) Rat

[Omid: 601300](#) Human

[SwissProt: P36896](#) Human

[SwissProt: Q61271](#) Mouse

[SwissProt: P80202](#) Rat

[Unigene: 438918](#) Human

[Unigene: 308467](#) Mouse

[Unigene: 214018](#) Rat