SunLong Biotech Co.,LTD
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[Marker Primary Antibody]

Rabbit Anti-Activin A Receptor Type IB/HRP Conjugated antibody

Catalog Number: SL3763R-HRP

FOR RESEARCH USE ONLY

[DATASHEET]

Host:	Rabbit
Isotype:	IgG
Clonality:	Polyclonal
Target:	Anti-Activin A Receptor Type IB/HRP
Immunogen:	KLH conjugated synthetic peptide derived from human Activin A Receptor Type IB (321-370aa)
Concentration:	1mg/ml
Applications:	IHC-P=1:100-500 IHC-F=1:100-500 ELISA=1:500-5000 not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Reactivity:	(predicted:Human,Mouse,Rat,Dog,Pig,Cow,Horse)
Background:	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. **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

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	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. **Subunit:** Forms an activin receptor complex with activin receptor type-2 (ACVR2A or ACVR2B). Interacts with TDP2. Interacts with AIP1, FKBP1A, IGSF1, TDGF1, SMAD2, SMAD3 and SMAD7. **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. 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. Contains 1 GS domain. Contains 1 protein kinase domain. **Database links:** **Entrez Gene:** 91 Human

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	Entrez Gene: 11479 Mouse **Entrez Gene:** 29381 Rat Omim: 601300 Human **SwissProt:** P36896 Human **SwissProt:** Q61271 Mouse **SwissProt:** P80202 Rat **Unigene:** 438918 Human **Unigene:** 308467 Mouse **Unigene:** 214018 Rat Activin receptor 1 belongs to the transforming growth factor beta family; all are transmembrane receptor proteins involved in transcriptional regulation and signal transduction.

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