

**ACVR1B Antibody**  
**Catalog # ASC10762****Specification**

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**ACVR1B Antibody - Product Information**

Application	WB, E
Primary Accession	<a href="#">Q04771</a>
Other Accession	<a href="#">NP_001096</a> , <a href="#">4501895</a>
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Application Notes	ACVR1B antibody can be used for detection of ACVR1B by Western blot at 1 µg/mL.

**ACVR1B Antibody - Additional Information**

Gene ID 90

**Target/Specificity**

ACVR1; At least three isoforms of ACVR1B are known to exist. This antibody is predicted to have no cross-reactivity to ACVR1 or ACVR1C.

**Reconstitution & Storage**

ACVR1B antibody can be stored at 4°C for three months and -20°C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.

**Precautions**

ACVR1B Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

**ACVR1B Antibody - Protein Information****Name** ACVR1**Synonyms** ACVRLK2**Function**

Bone morphogenetic protein (BMP) type I receptor that is involved in a wide variety of biological processes, including bone, heart, cartilage, nervous, and reproductive system development and regulation (PubMed: [20628059](http://www.uniprot.org/citations/20628059), PubMed: [22977237](http://www.uniprot.org/citations/22977237)). As a type I receptor, forms heterotetrameric receptor complexes with the type II receptors AMHR2, ACVR2A or ACVR2B (PubMed: [17911401](http://www.uniprot.org/citations/17911401)). Upon binding of ligands such as BMP7 or GDF2/BMP9 to the heteromeric complexes, type II receptors transphosphorylate ACVR1 intracellular domain (PubMed: [25354296](http://www.uniprot.org/citations/25354296)). In turn, ACVR1 kinase domain is activated and subsequently phosphorylates SMAD1/5/8 proteins that

transduce the signal (PubMed:<a href="http://www.uniprot.org/citations/9748228" target="\_blank">9748228</a>). In addition to its role in mediating BMP pathway-specific signaling, suppresses TGFbeta/activin pathway signaling by interfering with the binding of activin to its type II receptor (PubMed:<a href="http://www.uniprot.org/citations/17911401" target="\_blank">17911401</a>). Besides canonical SMAD signaling, can activate non-canonical pathways such as p38 mitogen-activated protein kinases/MAPKs (By similarity). May promote the expression of HAMP, potentially via its interaction with BMP6 (By similarity).

#### Cellular Location

Membrane; Single-pass type I membrane protein.

#### Tissue Location

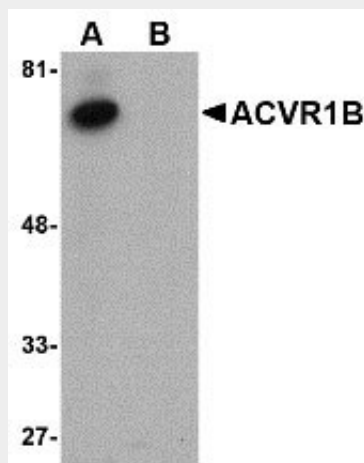
Expressed in normal parenchymal cells, endothelial cells, fibroblasts and tumor-derived epithelial cells

### ACVR1B Antibody - 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](#)

### ACVR1B Antibody - Images



Western blot analysis of ACVR1B in human kidney tissue lysate with ACVR1B antibody at 1 µg/mL in (A) the absence and (B) the presence of blocking peptide.

### ACVR1B Antibody - Background

ACVR1B Antibody: 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 and two type II receptors. ACVR1B, also known as activin receptor-like kinase 4 (ALK4), is a type I receptor for activin and plays major roles in cell differentiation, growth arrest and apoptosis.

Like another type I activin receptor ACVR1C, ACVR1B can mediate signaling by ligands such as Nodal, Xnr1, GDF-1/3, activin B and activin AB. In *Xenopus* embryos, expression of a dominant-negative form of ACVR1B blocked all mesoderm-inducing ligands, while expression of a dominant negative ACVR1C only blocked Nodal and Xnr1 signaling, suggesting that the ACVR1B and ACVR1C possess distinct functions.

#### **ACVR1B Antibody - References**

Tsuchida K, Sawchenko PE, Nishikawa S, et al. Molecular cloning of a novel type I receptor serine/threonine kinase for the TGF beta superfamily from rat brain. *Mol. Cell. Neurosci.*1996; 7:467-78.

Reissmann E, Jornvall H, Blokzijl A, et al. The orphan receptor ALK7 and the activin receptor ALK4 mediate signaling by nodal proteins during vertebrate development. *Genes Dev.*2001; 15:2010-22.

Tsuchida K, Nakatani M, Yamakawa N, et al. Activin isoforms signal through type I receptor serine/threonine kinase ALK7. *Mol. Cell Endocrinol.*2004; 220:59-65.