

**ACVR1 Antibody**  
**Catalog # ASC10761****Specification**

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**ACVR1 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	ACVR1 antibody can be used for detection of ACVR1 by Western blot at 1 µg/mL.

**ACVR1 Antibody - Additional Information**

Gene ID 90

**Target/Specificity**

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

**Reconstitution & Storage**

ACVR1 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**

ACVR1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

**ACVR1 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

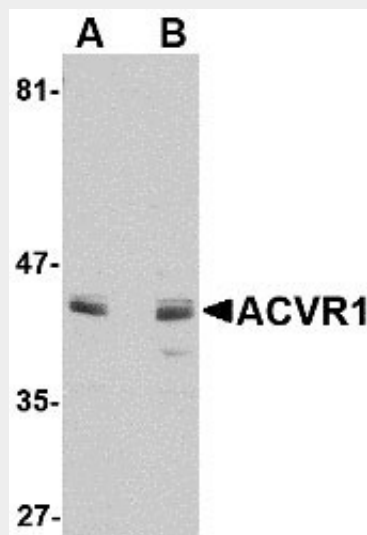
Expressed in normal parenchymal cells, endothelial cells, fibroblasts and tumor-derived epithelial cells

### ACVR1 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](#)

### ACVR1 Antibody - Images



Western blot analysis of ACVR1 in A549 cell lysate with ACVR1 antibody at 1 µg/mL in (A) the absence and (B) the presence of blocking peptide.

### ACVR1 Antibody - Background

ACVR1 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. Unlike ACVR1B and ACVR1C, ACVR1, also known as activin receptor-like kinase 2 (ALK2), can not transduce activin-mediated signaling, but will transduce BMP and Mullerian inhibiting substance (MIS) group signaling. It is thought that ACVR1 also inhibits activin signaling by blocking the binding of activin to its type II receptor. Recent studies indicate that genetic variation in ACVR1 is associated with polycystic ovary syndrome, suggesting that ACVR1 signaling contributes to disturbed folliculogenesis in these patients.

### **ACVR1 Antibody - References**

Tsuchida K, Sawchenko PN, 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; 76:467-78.

ten Dijke P, Yamashita H, Sampath TK, et al. Identification of type I receptors for osteogenic protein-1 and bone morphogenetic protein-4. J. Biol. Chem.1994; 269:16985-8.

Clarke TR, Hoshiya Y, Yi SE, et al. Mullerian inhibiting substance signaling uses a BMP-like pathway mediated by ALK2 and induces Smad6 expression. Mol. Endocrinol.2001; 15:946-59.

Renlund N, O'Neill FH, Zhang L, et al. Activin receptor-like kinase-2 inhibits activin signaling by blocking the binding of activin to its type II receptor. J. Endocrinol.2007; 195:95-103.