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Mouse Monoclonal Antibody to ACVR1

Purified Mouse Monoclonal Antibody
Catalog # AO2473a

Specification

Mouse Monoclonal Antibody to ACVR1 - Product Information

Application	**E, WB, FC**
Primary Accession	Q04771
Reactivity	**Human**
Host	**Mouse**
Clonality	**Monoclonal**
Isotype	**Mouse IgG1**
Calculated MW	**57.2kDa KDa**

Description
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 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. This gene encodes activin A type I receptor which signals a particular transcriptional response in concert with activin type II receptors. Mutations in this gene are associated with fibrodysplasia ossificans progressive.;

Immunogen
Purified recombinant fragment of human ACVR1 (AA: 21-120) expressed in E. Coli.

Formulation
Purified antibody in PBS with 0.05% sodium azide

Application Note
ELISA: 1/10000; WB: 1/500 - 1/2000; FCM: 1/200 - 1/400

Mouse Monoclonal Antibody to ACVR1 - Additional Information

Gene ID 90

Other Names
FOP; ALK2; SKR1; TSRI; ACTRI; ACVR1A; ACVRLK2

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
Mouse Monoclonal Antibody to ACVR1 is for research use only and not for use in diagnostic or therapeutic procedures.

Mouse Monoclonal Antibody to ACVR1 - 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, PubMed:22977237). As a type I receptor, forms heterotetrameric receptor complexes with the type II receptors AMHR2, ACVR2A or ACVR2B (PubMed:17911401). Upon binding of ligands such as BMP7 or GDF2/BMP9 to the heteromeric complexes, type II receptors transphosphorylate ACVR1 intracellular domain (PubMed:25354296). In turn, ACVR1 kinase domain is activated and subsequently phosphorylates SMAD1/5/8 proteins that transduce the signal (PubMed:9748228). 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:17911401). 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

Mouse Monoclonal Antibody to ACVR1 - Protocols

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

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Mouse Monoclonal Antibody to ACVR1 - Images

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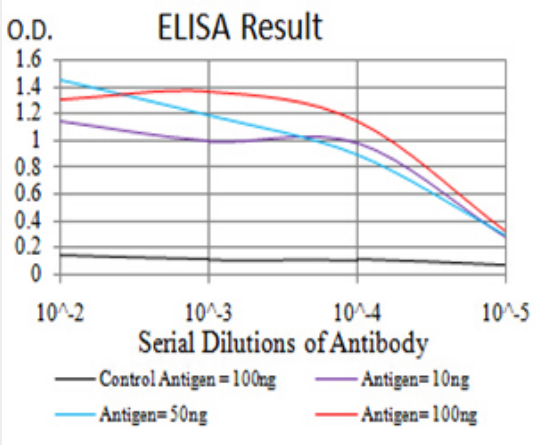
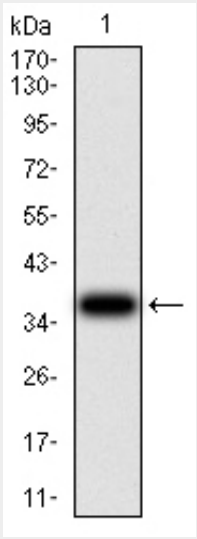
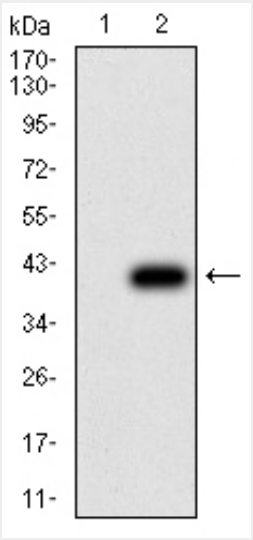


Black line: Control Antigen (100 ng);Purple line: Antigen (10ng); Blue line: Antigen (50 ng); Red line:Antigen (100 ng)



Western blot analysis using ACVR1 mAb against human ACVR1 (AA: 21-120) recombinant protein. (Expected MW is 37.1 kDa)



Western blot analysis using ACVR1 mAb against HEK293 (1) and ACVR1 (AA: 21-120)-hIgGFc transfected HEK293 (2) cell lysate.

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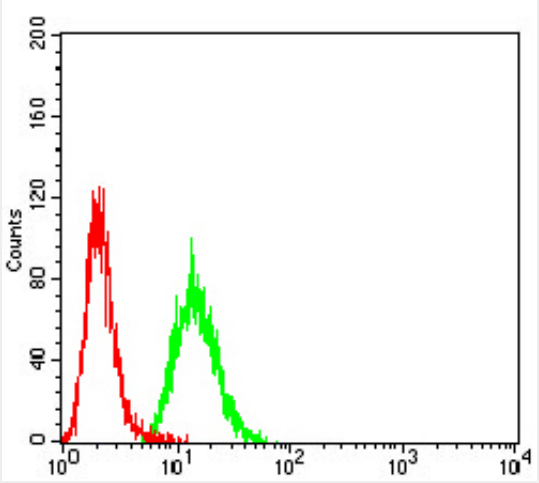

Flow cytometric analysis of Hela cells using ACVR1 mouse mAb (green) and negative control (red).

Mouse Monoclonal Antibody to ACVR1 - References

1.Proc Natl Acad Sci U S A. 2015 Dec 15;112(50):15438-43. ; 2.Br J Cancer. 2012 Dec 4;107(12):1978-86. ;