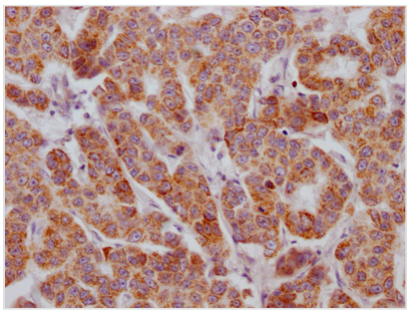
ACVR2B Antibody

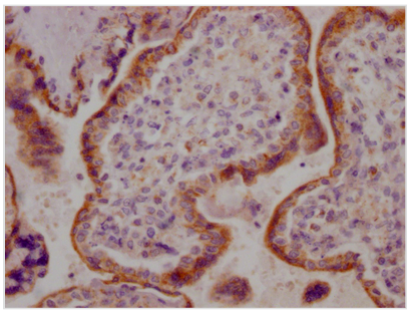
Product Code	CSB-RA260702A0HU
Storage	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.
Uniprot No.	Q13705
Immunogen	A synthesized peptide derived from human Activin Receptor Type IIB
Species Reactivity	Human
Tested Applications	ELISA, IHC; Recommended dilution: IHC:1:50-1:200
Relevance	Transmembrane serine/threonine kinase activin type-2 receptor forming an activin receptor complex with activin type-1 serine/threonine kinase receptors (ACVR1, ACVR1B or ACVR1c). Transduces the activin signal from the cell surface to the cytoplasm and is thus regulating 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, the type-2 receptors act as a primary activin receptors (binds activin-A/INHBA, activin-B/INHBB as well as inhibin-A/INHA-INHBA). 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. 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.
Form	Liquid
Conjugate	Non-conjugated
Storage Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Purification Method	Affinity-chromatography
Isotype	Rabbit IgG
Clonality	Monoclonal
Product Type	Recombinant Antibody
Immunogen Species	Homo sapiens (Human)

Research Area	Signal transduction; Stem cells
Gene Names	ACVR2B
Accession NO.	7B10

Image



IHC image of CSB-RA260702A0HU diluted at 1:100 and staining in paraffin-embedded human breast cancer performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4°C overnight. The primary is detected by a Goat anti-rabbit IgG polymer labeled by HRP and visualized using 0.05% DAB.



IHC image of CSB-RA260702A0HU diluted at 1:100 and staining in paraffin-embedded human placenta tissue performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4°C overnight. The primary is detected by a Goat anti-rabbit IgG polymer labeled by HRP and visualized using 0.05% DAB.

Description

ACVR2B is an activin receptor that binds to GDFs and activins, activating type I receptors such as activin receptor-like kinases (ALK) ALK4 and ALK5, thus stimulating the activation of downstream molecule SMAD2/3. SMADSs regulate a number of myogenic genes, such as myoD, myogenin, and Myf5, that are involved in cellular hypertrophy, proliferation, or differentiation. Noncanonical ACVR2B pathways have also been shown to regulate MAP kinases. ACVR2B-BMP3 interaction plays a key role in BMP-mediated osteoblasts (OBL) differentiation by demonstrating that knockdown of endogenous ACVR2B diminishes the inhibitory effect of BMP3 on osteoprogenitor cells.

The vectors expressing anti-ACVR2B antibody were constructed as follows: immunizing an animal with A synthesized peptide derived from human Activin Receptor Type IIB, isolating the positive splenocyte and extracting RNA, obtaining DNA by reverse transcription, sequencing and screening ACVR2B antibody gene, and amplifying heavy and light chain sequence by PCR and cloning them into plasma vectors. After that, the vector clones were transfected into the mammalian cells for production. The product is the recombinant ACVR2B antibody. Recombinant ACVR2B antibody in the culture medium was purified using Affinity-chromatography. It can react with ACVR2B protein from Human and is used in the ELISA, IHC.