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BMPR2 Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP2006a

Product Information

Application	WB, IHC-P, FC, E
Primary Accession	Q13873
Other Accession	O35607
Reactivity	Human, Mouse, Rat
Predicted	Bovine, Canine, Rabbit, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	115201
Antigen Region	28-59

Additional Information

Gene ID	659
Other Names	Bone morphogenetic protein receptor type-2, BMP type-2 receptor, BMPR-2, Bone morphogenetic protein receptor type II, BMP type II receptor, BMPR-II, BMPR2, PPH1
Target/Specificity	This BMPR2 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 28-59 amino acids from the N-terminal region of human BMPR2.
Dilution	WB~~1:1000 IHC-P~~1:100~500 FC~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	BMPR2 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	BMPR2
Synonyms	PPH1

Function	On ligand binding, forms a receptor complex consisting of two type II and two type I transmembrane serine/threonine kinases. Type II receptors phosphorylate and activate type I receptors which autophosphorylate, then bind and activate SMAD transcriptional regulators. Can also mediate signaling through the activation of the p38MAPK cascade (PubMed:12045205). Binds to BMP7, BMP2 and, less efficiently, BMP4. Binding is weak but enhanced by the presence of type I receptors for BMPs. Mediates induction of adipogenesis by GDF6. Promotes signaling also by binding to activin A/INHBA (PubMed:24018044).
Cellular Location	Cell membrane; Single-pass type I membrane protein
Tissue Location	Highly expressed in heart and liver.

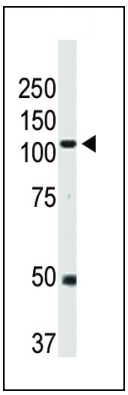
Background

BMPR2 is a member of the bone morphogenetic protein (BMP) receptor family of transmembrane serine/threonine kinases. The ligands of this receptor are BMPs, which are members of the TGF-beta superfamily. BMPs are involved in endochondral bone formation and embryogenesis. These proteins transduce their signals through the formation of heteromeric complexes of 2 different types of serine (threonine) kinase receptors: type I receptors of about 50-55 kD and type II receptors of about 70-80 kD. Type II receptors bind ligands in the absence of type I receptors, but they require their respective type I receptors for signaling, whereas type I receptors require their respective type II receptors for ligand binding. Mutations in BMPR2 have been associated with primary pulmonary hypertension.

References

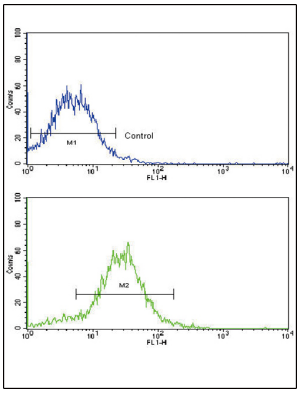
Pouliot, F., et al., Cancer Res. 63(2):277-281 (2003). Nishihara, A., et al., Mol. Biol. Cell 13(9):3055-3063 (2002). Humbert, M., et al., Eur Respir J 20(3):518-523 (2002). Vitt, U.A., et al., Biol. Reprod. 67(2):473-480 (2002). Nohe, A., et al., J. Biol. Chem. 277(7):5330-5338 (2002).

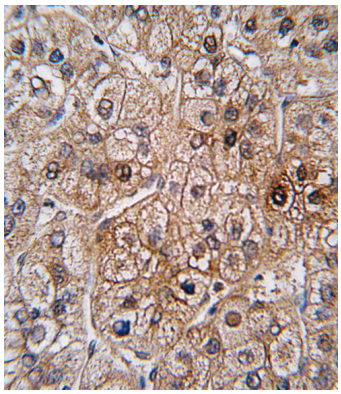
Images



Western blot analysis of anti-BMPR2 Pab (Cat. #ap2006a) in mouse heart tissue lysate. BMPR2 (arrow) was detected using purified Pab. Secondary HRP-anti-rabbit was used for signal visualization with chemiluminescence.

Flow cytometric analysis of HepG2 cells using BMPR2 Antibody (N-term)(bottom histogram) compared to a negative control cell (top histogram). FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.





Formalin-fixed and paraffin-embedded human hepatocarcinoma tissue reacted with BMPR2 antibody (N-term), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.

Citations

- BMP-dependent, injury-induced stem cell niche as a mechanism of heterotopic ossification.
- Expression of gremlin, a bone morphogenetic protein antagonist,is associated with vascular calcification in uraemia.
- Dysfunction of Golgi tethers, SNAREs, and SNAPs in monocrotaline-induced pulmonary hypertension.
- The BMP type II receptor is located in lipid rafts, including caveolae, of pulmonary endothelium in vivo and in vitro.
- Roles of miR-1-1 and miR-181c in ventricular septal defects.
- Binding of carbon nanotube to BMP receptor 2 enhances cell differentiation and inhibits apoptosis via regulating bHLH transcription factors.
- BMP signaling induces astrocytic differentiation of clinically derived oligodendroglioma propagating cells.

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