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Bmp7 Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1718a

Product Information

Application	WB, IHC-P, IF, E
Primary Accession	P18075
Other Accession	P23359, NP_001710
Reactivity	Human
Predicted	Mouse, Rat, Bovine, Canine, Rabbit, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB1863-1864
Calculated MW	49313
Antigen Region	15-44

Additional Information

Gene ID	655
Other Names	Bone morphogenetic protein 7, BMP-7, Osteogenic protein 1, OP-1, Eptotermin alfa, BMP7, OP1
Target/Specificity	This Bmp7 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 15-44 amino acids from the N-terminal region of human Bmp7.
Dilution	WB~~1:1000 IHC-P~~1:100~500 IF~~1:50~100 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	Bmp7 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	BMP7
Synonyms	OP1

Function	Growth factor of the TGF-beta superfamily that plays important role in various biological processes, including embryogenesis, hematopoiesis, neurogenesis and skeletal morphogenesis (PubMed:31208997). Initiates the canonical BMP signaling cascade by associating with type I receptor ACVR1 and type II receptor ACVR2A (PubMed:12667445, PubMed:9748228). Once all three components are bound together in a complex at the cell surface, ACVR2A phosphorylates and activates ACVR1. In turn, ACVR1 propagates signal by phosphorylating SMAD1/5/8 that travel to the nucleus and act as activators and repressors of transcription of target genes (PubMed:12478285). For specific functions such as growth cone collapse in developing spinal neurons and chemotaxis of monocytes, also uses BMPR2 as type II receptor (PubMed:31208997). Can also signal through non-canonical pathways such as P38 MAP kinase signaling cascade that promotes brown adipocyte differentiation through activation of target genes, including members of the SOX family of transcription factors (PubMed:27923061). Promotes the expression of HAMP, this is repressed by its interaction with ERFE (PubMed:30097509).
Cellular Location	Secreted.
Tissue Location	Expressed in the kidney and bladder. Lower levels seen in the brain

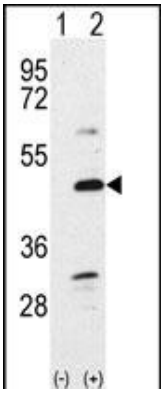
Background

The bone morphogenetic proteins (BMPs) are a family of secreted signaling molecules that can induce ectopic bone growth. Many BMPs are part of the transforming growth factor-beta (TGFB) superfamily. BMPs were originally identified by an ability of demineralized bone extract to induce endochondral osteogenesis in vivo in an extraskeletal site. Based on its expression early in embryogenesis, BMP7 has a proposed role in early development. In addition, the fact that BMP7 is closely related to BMP5 and BMP6 has lead to speculation of possible bone inductive activity.

References

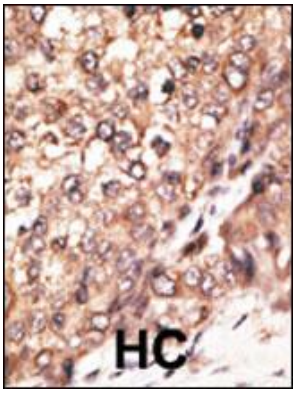
Merrihew, C., et al., J. Orthop. Res. 21(5):899-907 (2003).
Greenwald, J., et al., Mol. Cell 11(3):605-617 (2003).
Maric, I., et al., J. Cell. Physiol. 196(2):258-264 (2003).
Im, H.J., et al., J. Biol. Chem. 278(28):25386-25394 (2003).
Lee, M.J., et al., J. Immunol. 170(5):2557-2563 (2003).

Images

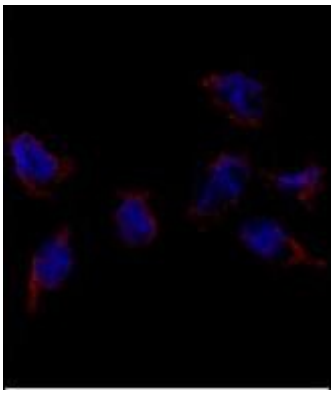


Western blot analysis of Bmp7 (arrow) using rabbit polyclonal Bmp7 Antibody (N-term) (Cat.#AP1718a). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected with the Bmp7 gene (Lane 2) (Origene Technologies).

Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, 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. BC = breast carcinoma; HC = hepatocarcinoma.



Immunofluorescence analysis of Bmp7 Antibody (N-term) (Cat.#AP1718a) in HeLa cells. 0.025 mg/ml primary antibody was followed by Alexa-Fluor-546-conjugated donkey anti-rabbit IgG (H+L). Alexa-Fluor-546 emits orange fluorescence. Blue counterstaining is DAPI.

Citations

- Angiopoietin-like 4 enhances metastasis and inhibits apoptosis via inducing bone morphogenetic protein 7 in colorectal cancer cells.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.