

BMP4 Antibody

Rabbit mAb

Catalog # AP90240

Product Information

Application	WB, IHC, IF, FC, ICC, IP, IHF
Primary Accession	P12644
Reactivity	Human
Clonality	Monoclonal
Other Names	BMP-2B; BMP-4; BMP2B; BMP2B1; bone morphogenetic protein 4; DVR4; ZYME
Isotype	Rabbit IgG
Host	Rabbit
Calculated MW	46555

Additional Information

Dilution	WB 1:500~1:2000 IHC 1:50~1:200 ICC/IF 1:50~1:200 IP 1:50 FC 1:50
Purification	Affinity-chromatography
Immunogen	A synthesized peptide derived from human BMP4
Description	Bone morphogenetic proteins (BMPs) were first identified as molecules that can induce ectopic bone and cartilage formation. BMPs belongs to the TGF- β superfamily, playing many diverse functions during development. BMPs are synthesized as precursor proteins and then processed by cleavage to release the c-terminal mature BMP. BMPs initiate signaling by binding to a receptor complex containing type I and type II serine/threonine receptor kinases that then phosphorylate Smad (mainly Smad1, 5 and 8), resulting the translocation of Smad into the nucleus. BMP was also reported to activate MAPK pathways in some systems.
Storage Condition and Buffer	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle.

Protein Information

Name	BMP4 (HGNC:1071)
Function	Growth factor of the TGF-beta superfamily that plays essential roles in many developmental processes, including neurogenesis, vascular development, angiogenesis and osteogenesis (PubMed: 31363885). Acts in concert with PTHLH/PTHRP to stimulate ductal outgrowth during embryonic mammary development and to inhibit hair follicle induction (By similarity). Initiates the canonical BMP signaling cascade by associating with type I receptor BMPRI1A and type II receptor BMPRI2 (PubMed: 25868050 , PubMed: 8006002). Once all three components are bound together in a complex at the cell surface, BMPRI2 phosphorylates and activates BMPRI1A. In turn, BMPRI1A propagates

signal by phosphorylating SMAD1/5/8 that travel to the nucleus and act as activators and repressors of transcription of target genes (PubMed:[25868050](#), PubMed:[29212066](#)). Positively regulates the expression of odontogenic development regulator MSX1 via inducing the IPO7- mediated import of SMAD1 to the nucleus (By similarity). Required for MSX1-mediated mesenchymal molar tooth bud development beyond the bud stage, via promoting Wnt signaling (By similarity). Acts as a positive regulator of odontoblast differentiation during mesenchymal tooth germ formation, expression is repressed during the bell stage by MSX1- mediated inhibition of CTNNB1 signaling (By similarity). Able to induce its own expression in dental mesenchymal cells and also in the neighboring dental epithelial cells via an MSX1-mediated pathway (By similarity). Can also signal through non-canonical BMP pathways such as ERK/MAP kinase, PI3K/Akt, or SRC cascades (PubMed:[31363885](#)). For example, induces SRC phosphorylation which, in turn, activates VEGFR2, leading to an angiogenic response (PubMed:[31363885](#)).

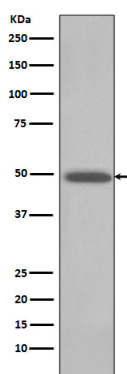
Cellular Location

Secreted, extracellular space, extracellular matrix

Tissue Location

Expressed in the lung and lower levels seen in the kidney. Present also in normal and neoplastic prostate tissues, and prostate cancer cell lines

Images



Western blot analysis of BMP4 expression in HeLa cell lysate.

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Immunohistochemical analysis of paraffin-embedded human breast cancer, using BMP4 Antibody.

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