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# Bmp4 Antibody (N-term)
**Purified Rabbit Polyclonal Antibody (Pab)**
**Catalog # AP1715a**

## Specification

### Bmp4 Antibody (N-term) - Product Information

| | |
|---|---|
| Application | **WB, IHC-P,E** |
| Primary Accession | P12644 |
| Other Accession | O46576, P21275, Q2KJH1, NP_001193 |
| Reactivity | **Human** |
| Predicted | **Bovine, Mouse, Rabbit** |
| Host | **Rabbit** |
| Clonality | **Polyclonal** |
| Isotype | **Rabbit IgG** |
| Antigen Region | **5-34** |

### Bmp4 Antibody (N-term) - Additional Information

**Gene ID** 652

**Other Names**
Bone morphogenetic protein 4, BMP-4, Bone morphogenetic protein 2B, BMP-2B, BMP4, BMP2B, DVR4

**Target/Specificity**
This Bmp4 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 5-34 amino acids from the N-terminal region of human Bmp4.

**Dilution**
WB~~1:1000
IHC-P~~1:10~50

**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**
Bmp4 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

### Bmp4 Antibody (N-term) - 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 BMPR1A and type II receptor BMPR2 (PubMed:25868050, PubMed:8006002). Once all three components are bound together in a complex at the cell surface, BMPR2 phosphorylates and activates BMPR1A. In turn, BMPR1A 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

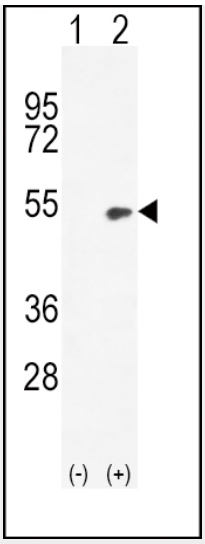
## Bmp4 Antibody (N-term) - Protocols

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

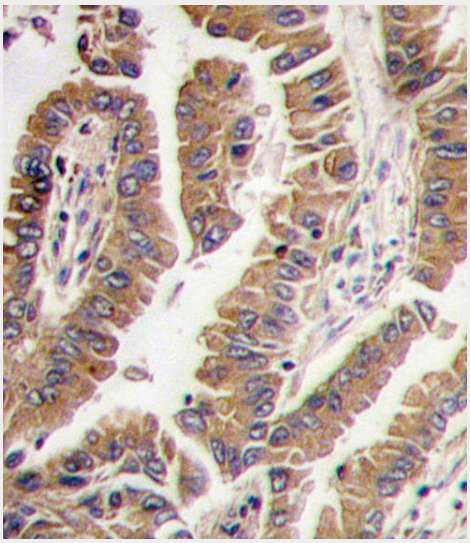
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

## Bmp4 Antibody (N-term) - Images

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Western blot analysis of Bmp4 (arrow) using rabbit polyclonal Bmp4 Antibody (G20) (Cat. #AP1715a). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected (Lane 2) with the Bmp4 gene.



Formalin-fixed and paraffin-embedded human lung carcinoma tissue reacted with Bmp4 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.

**Bmp4 Antibody (N-term) - Background**

Bmp4 is a member of the bone morphogenetic protein family which is part of the transforming growth factor-beta superfamily. The superfamily includes large families of growth and differentiation factors. Bone morphogenetic proteins were originally identified by an ability of demineralized bone extract to induce endochondral osteogenesis in vivo in an extraskeletal site. This particular family member plays an important role in the onset of endochondral bone formation in humans, and a reduction in expression has been associated with a variety of bone diseases, including the heritable disorder Fibrodysplasia Ossificans Progressiva. Alternative splicing in the 5' untranslated region of this gene has been described and three variants are described, all encoding an identical protein.

**Bmp4 Antibody (N-term) - References**

Sorescu, G.P., et al., J. Biol. Chem. 278(33):31128-31135 (2003). Chadwick, K., et al., Blood 102(3):906-915 (2003). Shepherd, T.G., et al., Endocrinology 144(8):3306-3314 (2003). Nemer, G., et al., Dev. Biol. 254(1):131-148 (2003). Maguer-Satta, V., et al., Exp. Cell Res. 282(2):110-120 (2003).