

BMP-4 Antibody
Rabbit Polyclonal Antibody
Catalog # ABV11040**Specification**

BMP-4 Antibody - Product Information

Application	WB
Primary Accession	P12644
Other Accession	AAC72278
Reactivity	Human, Mouse, Rat, Rabbit, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	46555

BMP-4 Antibody - Additional Information**Gene ID** 652

Application & Usage	Western blotting (0.5-4 µg/ml). However, the optimal conditions should be determined individually.
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Other Names

BMP4, BMP-4, BMP 4, bone morphogenetic protein 4, BMP2B, BMP2B1

Target/Specificity

BMP-4

Antibody Form

Liquid

Appearance

Colorless liquid

Formulation

100 µg (0.5 mg/ml) affinity purified rabbit anti-BMP-4 polyclonal antibody in phosphate buffered saline (PBS), pH 7.2, containing 30% glycerol, 0.5% BSA, and 0.01% thimerosal.

Handling

The antibody solution should be gently mixed before use.

Reconstitution & Storage

-20 °C

Background Descriptions**Precautions**

BMP-4 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

BMP-4 Antibody - 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](http://www.uniprot.org/citations/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 BMPRI1 and type II receptor BMPRI2 (PubMed: [25868050](http://www.uniprot.org/citations/25868050), PubMed: [8006002](http://www.uniprot.org/citations/8006002)). Once all three components are bound together in a complex at the cell surface, BMPRI2 phosphorylates and activates BMPRI1. In turn, BMPRI1 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](http://www.uniprot.org/citations/25868050), PubMed: [29212066](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/31363885)). For example, induces SRC phosphorylation which, in turn, activates VEGFR2, leading to an angiogenic response (PubMed: [31363885](http://www.uniprot.org/citations/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

BMP-4 Antibody - Protocols

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

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

BMP-4 Antibody - Images

BMP-4 Antibody - Background

BMPs (bone morphogenetic proteins) belong to the TGF-beta superfamily of structurally related signaling proteins. Members of this superfamily are widely represented throughout the animal kingdom and have been implicated in a variety of developmental processes. Proteins of the TGF-beta superfamily are disulfide-linked dimers composed of two 12-15 kDa polypeptide chains. As implied by their name, BMPs initiate, promote and regulate bone development, growth, remodeling and repair. Smad1 translocation to the nucleus is observed after the addition of BMP-4 (also designated BMP-2B), suggesting that BMP-4 may play a role in activation of the Smad pathway.