10320 Camino Santa Fe, Suite G
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Tel: 858.875.1900 Fax: 858.875.1999

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.**

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.

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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). 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

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 Cytomety
- Cell Culture

BMP-4 Antibody - Images

BMP-4 Antibody - Background

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BMPs (bone morphogenetic proteins) belong to the TGF-beta superfamily of structurally related signaling proteins. Members of this superfamily are widely represented thro µghout the animal kingdom and have been implicated in a variety of developmental processes. Proteins of the TGF-beta superfamily are disulfide-linked dimmers 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), s µggesting that BMP-4 may play a role in activation of the Smad pathway.