10320 Camino Santa Fe, Suite G
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BMP4 Antibody
Purified Mouse Monoclonal Antibody
Catalog # AO2170a

Specification

BMP4 Antibody - Product Information

Application	**E, WB, IF**
Primary Accession	P12644
Reactivity	**Human, Rat**
Host	**Mouse**
Clonality	**Monoclonal**
Isotype	**IgG1**
Calculated MW	**46.5kDa KDa**

Description
The protein encoded by this gene 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.

Immunogen
Purified recombinant fragment of human BMP4 (AA: 277-408) expressed in E. Coli.

Formulation
Purified antibody in PBS with 0.05% sodium azide

BMP4 Antibody - Additional Information

Gene ID 652

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

Dilution
E~~1/10000
WB~~1/500 - 1/2000
IF~~1/100 - 1/500

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
BMP4 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

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BMP4 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

BMP4 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