

### **BMP2 Antibody (Center)**

Affinity Purified Rabbit Polyclonal Antibody (Pab) Catalog # AP13858c

### Specification

# **BMP2** Antibody (Center) - Product Information

Application Primary Accession Other Accession Reactivity Predicted Host Clonality Isotype Calculated MW Antigen Region FC, WB,E <u>P12643</u> <u>P49001, P21274, Q90751, NP\_001191.1</u> Human Chicken, Mouse, Rat Rabbit Polyclonal Rabbit IgG 44702 260-289

## **BMP2** Antibody (Center) - Additional Information

Gene ID 650

**Other Names** Bone morphogenetic protein 2, BMP-2, Bone morphogenetic protein 2A, BMP-2A, BMP2, BMP2A

#### Target/Specificity

This BMP2 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 260-289 amino acids from the Central region of human BMP2.

**Dilution** FC~~1:10~50 WB~~1:1000 E~~Use at an assay dependent concentration.

Format

Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.

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

BMP2 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

# **BMP2** Antibody (Center) - Protein Information

Name BMP2



# Synonyms BMP2A

**Function** Growth factor of the TGF-beta superfamily that plays essential roles in many developmental processes, including cardiogenesis, neurogenesis, and osteogenesis (PubMed:<u>18436533</u>, PubMed:<u>24362451</u>, PubMed:<u>31019025</u>). Induces cartilage and bone formation (PubMed:<u>3201241</u>). Initiates the canonical BMP signaling cascade by associating with type I receptor BMPR1A and type II receptor BMPR2 (PubMed: 15064755, PubMed: 17295905, PubMed:<u>18436533</u>). Once all three components are bound together in a complex at the cell surface, BMPR2 phosphorylates and activates BMPR1A (PubMed: 7791754). 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. Also acts to promote expression of HAMP, via the interaction with its receptor BMPR1A/ALK3 (PubMed:<u>31800957</u>). Can also signal through non-canonical pathways such as ERK/MAP kinase signaling cascade that regulates osteoblast differentiation (PubMed:16771708, PubMed:20851880), Also stimulates the differentiation of myoblasts into osteoblasts via the EIF2AK3-EIF2A-ATF4 pathway by stimulating EIF2A phosphorylation which leads to increased expression of ATF4 which plays a central role in osteoblast differentiation (PubMed:24362451). 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).

**Cellular Location** Secreted.

#### **Tissue Location**

Particularly abundant in lung, spleen and colon and in low but significant levels in heart, brain, placenta, liver, skeletal muscle, kidney, pancreas, prostate, ovary and small intestine

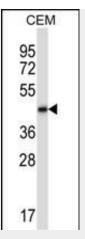
## **BMP2 Antibody (Center) - Protocols**

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

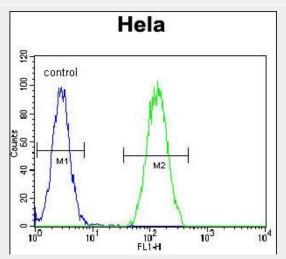
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- <u>Cell Culture</u>

BMP2 Antibody (Center) - Images





BMP2 Antibody (Center) (Cat. #AP13858c) western blot analysis in CEM cell line lysates (35ug/lane).This demonstrates the BMP2 antibody detected the BMP2 protein (arrow).



BMP2 Antibody (Center) (Cat. #AP13858c) flow cytometric analysis of Hela cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

### BMP2 Antibody (Center) - Background

The protein encoded by this gene belongs to the transforming growth factor-beta (TGFB) superfamily. The encoded protein acts as a disulfide-linked homodimer and induces bone and cartilage formation.

# **BMP2 Antibody (Center) - References**

Liu, Y., et al. Clin. Orthop. Relat. Res. 468(12):3333-3341(2010) Kupfer, S.S., et al. Gastroenterology 139(5):1677-1685(2010) Shimada, M., et al. Hum. Genet. 128(4):433-441(2010) Nikopensius, T., et al. Birth Defects Res. Part A Clin. Mol. Teratol. 88(9):748-756(2010) Szczesny, G., et al. Arch Orthop Trauma Surg (2010) In press : BMP2 Antibody (Center) - Citations

- AGEs-Induced Calcification and Apoptosis in Human Vascular Smooth Muscle Cells Is Reversed by Inhibition of Autophagy
- <u>Dose-dependent inhibitory effects of zoledronic acid on osteoblast viability and function</u> in vitro.

