



BMP-6 (74219.11): sc-57042

BACKGROUND

Bone morphogenic proteins (BMPs) are members of the TGF β superfamily. BMPs are involved in the induction of cartilage and bone formation. *In vivo* studies have shown that BMP-2 (also designated BMP-2A) and BMP-3 can independently induce cartilage formation. Smad3 association with the TGF β receptor complex and Smad1 translocation to the nucleus are 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. BMP-5, BMP-6 and BMP-7 all share high sequence homology with BMP-2, indicating that they each may be able to induce cartilage formation. BMP-8 (also designated OP-2) is thought to be involved in early development, as detectable expression has not been found in adult organs.

REFERENCES

1. Wozney, J.M., et al. 1988. Novel regulators of bone formation: molecular clones and activities. *Science* 242: 1528-1534.
2. Massague, J. 1990. The transforming growth factor- β family. *Annu. Rev. Cell Biol.* 6: 597-641.
3. Celeste, A.J., et al. 1990. Identification of transforming growth factor β family members present in bone-inductive protein purified from bovine bone. *Proc. Natl. Acad. Sci. USA* 87: 9843-9847.
4. Oskaynak, E., et al. 1992. Osteogenic protein-2. A new member of the transforming growth factor- β superfamily expressed early in embryogenesis. *J. Biol. Chem.* 267: 25220-25227.
5. Gitelman, S.E., et al. 1994. Recombinant Vgr-1/BMP-6-expressing tumors induce fibrosis and endochondral bone formation *in vivo*. *J. Cell Biol.* 126: 1595-1609.
6. Liu, F., et al. 1996. A human Mad protein acting as a BMP-regulated transcriptional activator. *Nature* 381: 620-623.
7. Zhang, Y., et al. 1996. Receptor-associated Mad homologues synergize as effectors of the TGF- β response. *Nature* 383: 168-172.
8. McPherron, A.C., et al. 1997. Regulation of skeletal muscle mass in mice by a new TGF- β superfamily member. *Nature* 387: 83-90.

CHROMOSOMAL LOCATION

Genetic locus: BMP6 (human) mapping to 6p24.3.

SOURCE

BMP-6 (74219.11) is a mouse monoclonal antibody raised against a recombinant protein fragment corresponding to amino acids 296-428 of BMP-6 of human origin.

PRODUCT

Each vial contains 50 μ g IgG_{2b} kappa light chain in 0.5 ml of PBS with < 0.1% sodium azide and protein stabilizer.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

BMP-6 (74219.11) is recommended for detection of BMP-6 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with recombinant human BMP-2, BMP-4, BMP-5 and BMP-7 under reducing conditions.

Suitable for use as control antibody for BMP-6 siRNA (h): sc-37066, BMP-6 shRNA Plasmid (h): sc-37066-SH and BMP-6 shRNA (h) Lentiviral Particles: sc-37066-V.

Molecular Weight of BMP-6 precursor: 90 kDa.

Molecular Weight of mature BMP-6: 23 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™
 Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

SELECT PRODUCT CITATIONS

1. Mi, D., et al. 2011. PTHrP inhibits BMP-6 expression through the PKA signaling pathway in breast cancer cells. *J. Cancer Res. Clin. Oncol.* 137: 295-303.
2. Chiu, C.C., et al. 2019. PARK14 (D331Y) PLA2G6 causes early-onset degeneration of *Substantia nigra* dopaminergic neurons by inducing mitochondrial dysfunction, ER stress, mitophagy impairment and transcriptional dysregulation in a knockin mouse model. *Mol. Neurobiol.* 56: 3835-3853.
3. Luo, W., et al. 2021. BMP9-initiated osteogenic/odontogenic differentiation of mouse tooth germ mesenchymal cells (TGMCS) requires Wnt/ β -catenin signalling activity. *J. Cell. Mol. Med.* 25: 2666-2678.
4. Yuan, Z., et al. 2023. Knockdown of Bach1 protects periodontal bone regeneration from inflammatory damage. *J. Cell. Mol. Med.* 27: 3465-3477.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.