

BMP-4 (9H4): sc-81000

BACKGROUND

Bone morphogenetic 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. Ozkaynak, 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.

CHROMOSOMAL LOCATION

Genetic locus: BMP4 (human) mapping to 14q22.2.

SOURCE

BMP-4 (9H4) is a mouse monoclonal antibody raised against recombinant BMP-4 of human origin.

PRODUCT

Each vial contains 200 μ g IgG $_{2b}$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

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

APPLICATIONS

BMP-4 (9H4) is recommended for detection of BMP-4 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for BMP-4 siRNA (h): sc-39744, BMP-4 shRNA Plasmid (h): sc-39744-SH and BMP-4 shRNA (h) Lentiviral Particles: sc-39744-V.

Molecular Weight of BMP-4 precursor: 50 kDa.

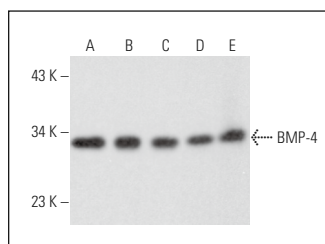
Molecular Weight of mature BMP-4: 23 kDa.

Positive Controls: A549 cell lysate: sc-2413, A-431 whole cell lysate: sc-2201 or HeLa whole cell lysate: sc-2200.

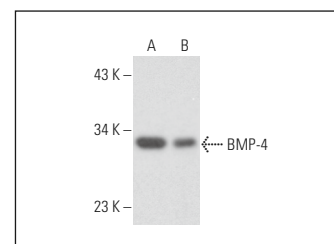
RECOMMENDED SECONDARY REAGENTS

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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



BMP-4 (9H4): sc-81000. Western blot analysis of BMP-4 expression in A549 (A), HeLa (B), A-431 (C), U-937 (D) and MDA-MB-435S (E) whole cell lysates.



BMP-4 (9H4): sc-81000. Western blot analysis of BMP-4 expression in SW480 (A) and ZR-75-1 (B) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Guo, X., et al. 2012. Upregulation of bone morphogenetic protein 4 is associated with poor prognosis in patients with hepatocellular carcinoma. *Pathol. Oncol. Res.* 18: 635-640.
2. Wu, X., et al. 2014. Expression of bone morphogenetic protein 4 and its receptors in the remodeling heart. *Life Sci.* 97: 145-154.
3. Dong, F., et al. 2019. Chrysin alleviates chronic hypoxia-induced pulmonary hypertension by reducing intracellular calcium concentration in pulmonary arterial smooth muscle cells. *J. Cardiovasc. Pharmacol.* 74: 426-435.



See **BMP-4 (3H2.3): sc-12721** for BMP-4 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.