

# BMP-4 (D-6): sc-393329

## BACKGROUND

Bone morphogenic proteins (BMPs) are members of the TGF $\beta$  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 $\beta$  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- $\beta$  family. *Annu. Rev. Cell Biol.* 6: 597-641.
3. Celeste, A.J., et al. 1990. Identification of transforming growth factor  $\beta$  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- $\beta$  superfamily expressed early in embryogenesis. *J. Biol. Chem.* 267: 25220-25227.

## CHROMOSOMAL LOCATION

Genetic locus: BMP4 (human) mapping to 14q22.2; Bmp4 (mouse) mapping to 14 C1.

## SOURCE

BMP-4 (D-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 293-328 at the N-terminus of BMP-4 of human origin.

## PRODUCT

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

BMP-4 (D-6) is available conjugated to agarose (sc-393329 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393329 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393329 PE), fluorescein (sc-393329 FITC), Alexa Fluor® 488 (sc-393329 AF488), Alexa Fluor® 546 (sc-393329 AF546), Alexa Fluor® 594 (sc-393329 AF594) or Alexa Fluor® 647 (sc-393329 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393329 AF680) or Alexa Fluor® 790 (sc-393329 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-393329 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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## APPLICATIONS

BMP-4 (D-6) is recommended for detection of precursor and mature BMP-4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

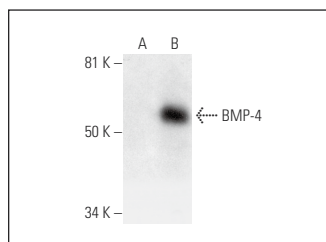
Suitable for use as control antibody for BMP-4 siRNA (h): sc-39744, BMP-4 siRNA (m): sc-39745, BMP-4 siRNA (r): sc-72218, BMP-4 shRNA Plasmid (h): sc-39744-SH, BMP-4 shRNA Plasmid (m): sc-39745-SH, BMP-4 shRNA Plasmid (r): sc-72218-SH, BMP-4 shRNA (h) Lentiviral Particles: sc-39744-V, BMP-4 shRNA (m) Lentiviral Particles: sc-39745-V and BMP-4 shRNA (r) Lentiviral Particles: sc-72218-V.

Molecular Weight of BMP-4 precursor: 50 kDa.

Molecular Weight of mature BMP-4: 23 kDa.

Positive Controls: BMP-4 (h): 293T Lysate: sc-113395.

## DATA



BMP-4 (D-6): sc-393329. Western blot analysis of BMP-4 expression in non-transfected: sc-117752 (A) and human BMP-4 transfected: sc-113395 (B) 293T whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Voorneveld, P.W., et al. 2015. The BMP pathway either enhances or inhibits the Wnt pathway depending on the Smad4 and p53 status in CRC. *Br. J. Cancer* 112: 122-130.
2. Golberg, A., et al. 2018. Skin regeneration with all accessory organs following ablation with irreversible electroporation. *J. Tissue Eng. Regen. Med.* 12: 98-113.
3. Molagoda, I.M.N., et al. 2021. Fisetin promotes osteoblast differentiation and osteogenesis through GSK-3 $\beta$  phosphorylation at Ser9 and consequent  $\beta$ -catenin activation, inhibiting osteoporosis. *Biochem. Pharmacol.* 192: 114676.

## 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.