

# BMP-3 (C-9): sc-390046

## 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: BMP3 (human) mapping to 4q21.21, GDF10 (human) mapping to 10q11.22; Bmp3 (mouse) mapping to 5 E3, Gdf10 (mouse) mapping to 14 B.

## SOURCE

BMP-3 (C-9) is a mouse monoclonal antibody raised against amino acids 363-435 of BMP-3 of human origin.

## PRODUCT

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

BMP-3 (C-9) is available conjugated to agarose (sc-390046 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390046 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390046 PE), fluorescein (sc-390046 FITC), Alexa Fluor® 488 (sc-390046 AF488), Alexa Fluor® 546 (sc-390046 AF546), Alexa Fluor® 594 (sc-390046 AF594) or Alexa Fluor® 647 (sc-390046 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390046 AF680) or Alexa Fluor® 790 (sc-390046 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## STORAGE

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

## APPLICATIONS

BMP-3 (C-9) is recommended for detection of precursor and mature BMP-3 and BMP-3b 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).

BMP-3 (C-9) is also recommended for detection of precursor and mature BMP-3 and BMP-3b in additional species, including bovine and porcine.

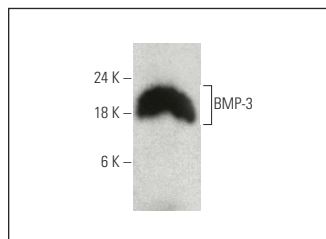
Molecular Weight of BMP-3: 53/12 kDa.

Positive Controls: human cartilage extract: sc-363755.

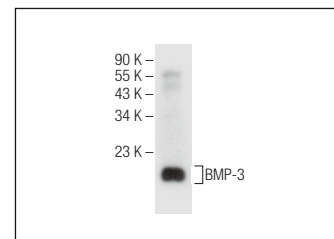
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



BMP-3 (C-9) HRP: sc-390046 HRP. Direct western blot analysis of BMP-3 expression in human cartilage tissue extract.



BMP-3 (C-9): sc-390046. Western blot analysis of BMP-3 expression in human cartilage tissue extract.

## SELECT PRODUCT CITATIONS

1. Kokabu, S. and Rosen, V. 2017. BMP3 expression by osteoblast lineage cells is regulated by canonical Wnt signaling. *FEBS Open Bio* 8: 168-176.
2. Fan, L., et al. 2018. MiR-450b promotes osteogenic differentiation *in vitro* and enhances bone formation *in vivo* by targeting BMP3. *Stem Cells Dev.* 27: 600-611.
3. Wang, F., et al. 2021. The long noncoding RNA Synage regulates synapse stability and neuronal function in the cerebellum. *Cell Death Differ.* 28: 2634-2650.

## RESEARCH USE

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