SANTA CRUZ BIOTECHNOLOGY, INC.

# BMP-4 (500-M121): sc-57041

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

Bone morphogenic proteins (BMPs) are members of the TGFβ 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 TGFβ 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., Rosen, V., Celeste, A.J., Mitsock, L.M., Whitters, M.J., Kriz, R.W., Hewick, R.M. and Wang, E.A. 1988. Novel regulators of bone formation: molecular clones and activities. Science 242: 1528-1534.
2. Massague, J. 1990. The transforming growth factor-β family. Ann. Rev. Cell Biol. 6: 597-641.
3. Celeste, A.J., Iannazzi, J.A., Taylor, R.C., Hewick, R.M., Rosen, V., Wang, E.A. and Wozney, J.M. 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., Schnegelsberg, P.N., Jin, D.F., Clifford, G.M., Warren, F.D., Drier, E.A. and Oppermann, H. 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., Kobrin, M.S., Ye, J.Q., Lopez, A.R., Lee, A. and Derynck, R. 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., Hata, A., Baker, J.C., Doody, J., Carcamo, J., Harland, R.M. and Massague, J. 1996. A human Mad protein acting as a BMP-regulated transcriptional activator. Nature 381: 620-623.
7. Zhang, Y., Feng, X., We, R. and Derynck, R. 1996. Receptor-associated Mad homologues synergize as effectors of the TGFβ response. Nature 383: 168-172.
8. McPherron, A.C., Lawler, A.M. and Lee, S.J. 1997. Regulation of skeletal muscle mass in mice by a new TGFβ superfamily member. Nature 387: 83-90.


## CHROMOSOMAL LOCATION

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

## STORAGE

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

## SOURCE

BMP-4 (500-M121) is a mouse monoclonal antibody raised against BMP-4 of human origin.

## PRODUCT

Each vial contains 100 µg $IgG_{2b}$ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

BMP-4 (500-M121) is recommended for detection of BMP-4 of mouse and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

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

Molecular Weight of BMP-4 precursor: 50 kDa.

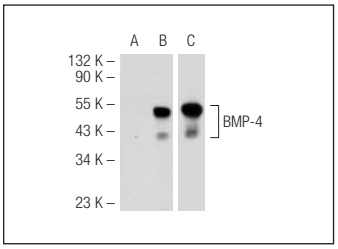
Molecular Weight of mature BMP-4: 23 kDa.

Positive Controls: BMP-4 (h2): 293T Lysate: sc-176203 or BMP-4 (m): 293T Lysate: sc-118825.

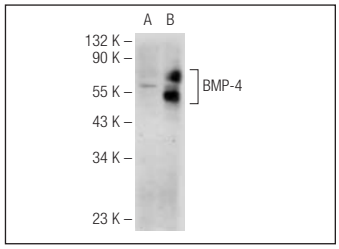
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 (500-M121): sc-57041. Western blot analysis of BMP-4 expression in non-transfected: sc-117752 (**A**), human BMP-4 transfected: sc-113395 (**B**) and mouse BMP-4 transfected: sc-118825 (**C**) 293T whole cell lysates.




BMP-4 (500-M121): sc-57041. Western blot analysis of BMP-4 expression in non-transfected: sc-117752 (**A**) and human BMP-4 transfected: sc-176203 (**B**) 293T whole cell lysates.

## RESEARCH USE

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