

# BMP-4 (3H2.3): sc-12721

## 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

BMP-4 (3H2.3) is a mouse monoclonal antibody raised against recombinant BMP-4 of mouse origin.

## PRODUCT

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

BMP-4 (3H2.3) is available conjugated to agarose (sc-12721 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-12721 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-12721 PE), fluorescein (sc-12721 FITC), Alexa Fluor<sup>®</sup> 488 (sc-12721 AF488), Alexa Fluor<sup>®</sup> 546 (sc-12721 AF546), Alexa Fluor<sup>®</sup> 594 (sc-12721 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-12721 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-12721 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-12721 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

BMP-4 (3H2.3) is recommended for detection of precursor and mature BMP-4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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.

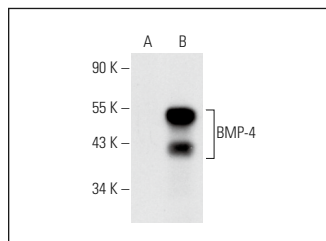
Molecular Weight of mature BMP-4: 23 kDa.

Positive Controls: BMP-4 (m): 293T Lysate: sc-118825 or BMP-4 (h): 293T Lysate: sc-113395.

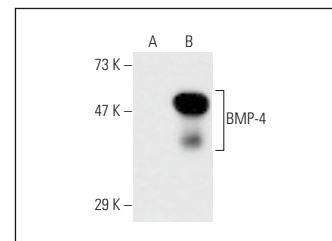
## STORAGE

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

## DATA



BMP-4 (3H2.3): sc-12721. 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.



BMP-4 (3H2.3): sc-12721. Western blot analysis of BMP-4 expression in non-transfected: sc-117752 (A) and mouse BMP-4 transfected: sc-118825 (B) 293T whole cell lysates.

## SELECT PRODUCT CITATIONS

- Sorescu, G.P., et al. 2003. Bone morphogenic protein 4 produced in endothelial cells by oscillatory shear stress stimulates an inflammatory response. *J. Biol. Chem.* 278: 31128-31135.
- Frank, D.B., et al. 2005. Bone morphogenetic protein 4 promotes pulmonary vascular remodeling in hypoxic pulmonary hypertension. *Circ. Res.* 97: 496-504.
- Deng, H., et al. 2007. Bone morphogenetic protein-4 is overexpressed in colonic adenocarcinomas and promotes migration and invasion of HCT116 cells. *Exp. Cell Res.* 313: 1033-1044.
- Lau, A.W., et al. 2010. TRE17/ubiquitin-specific protease 6 (USP6) oncogene translocated in aneurysmal bone cyst blocks osteoblastic maturation via an autocrine mechanism involving bone morphogenetic protein dysregulation. *J. Biol. Chem.* 285: 37111-37120.
- Xu, T., et al. 2011. Bone morphogenetic protein-4-induced epithelial-mesenchymal transition and invasiveness through Smad1-mediated signal pathway in squamous cell carcinoma of the head and neck. *Arch. Med. Res.* 42: 128-137.
- Shi, J., et al. 2013. Nanoparticle delivery of the bone morphogenetic protein 4 gene to adipose-derived stem cells promotes articular cartilage repair *in vitro* and *in vivo*. *Arthroscopy* 29: 2001-2011.
- Wu, X., et al. 2014. Expression of bone morphogenetic protein 4 and its receptors in the remodeling heart. *Life Sci.* 97: 145-154.
- Senger, S., et al. 2015. Celiac disease histopathology recapitulates hedgehog downregulation, consistent with wound healing processes activation. *PLoS ONE* 10: e0144634.

## RESEARCH USE

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

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