

BMP2K (NQ-C10): sc-134284

BACKGROUND

The phosphorylation and dephosphorylation of proteins on serine and threonine residues is an essential means of regulating a broad range of cellular functions in eukaryotes, including cell division, homeostasis and apoptosis. A group of proteins that are intimately involved in this process are the serine/threonine (Ser/Thr) protein kinases. BMP2K (BMP2 inducible kinase), also known as BIKE, is a 1,161 amino acid nuclear protein that contains one protein kinase domain and belongs to the Ser/Thr protein kinase family. Thought to be involved in osteoblast differentiation, BMP2K catalyzes the ATP-dependent phosphorylation of bone morphogenic proteins (BMPs); proteins that are essential for proper cartilage and bone formation. Via its catalytic activity, BMP2K may play a role in signaling pathways that mediate bone growth and cellular differentiation. Three isoforms of BMP2K exist due to alternative splicing events.

REFERENCES

- Hanks, S.K., et al. 1988. The protein kinase family: conserved features and deduced phylogeny of the catalytic domains. *Science* 241: 42-52.
- Hoffmann, A. and Gross, G. 2001. BMP signaling pathways in cartilage and bone formation. *Crit. Rev. Eukaryot. Gene Expr.* 11: 23-45.
- Kearns, A.E., et al. 2001. Cloning and characterization of a novel protein kinase that impairs osteoblast differentiation *in vitro*. *J. Biol. Chem.* 276: 42213-42218.
- Arikawa, T., et al. 2004. Regulation of bone morphogenetic protein-2 expression by endogenous prostaglandin E2 in human mesenchymal stem cells. *J. Cell. Physiol.* 200: 400-406.
- Medici, M., et al. 2006. BMP2 gene polymorphisms and osteoporosis: the Rotterdam Study. *J. Bone Miner. Res.* 21: 845-854.
- Mukhopadhyay, P., et al. 2008. BMP signaling dynamics in embryonic orofacial tissue. *J. Cell. Physiol.* 216: 771-779.
- Chen, M., et al. 2008. Inhibition of β -catenin signaling causes defects in postnatal cartilage development. *J. Cell Sci.* 121: 1455-1465.

CHROMOSOMAL LOCATION

Genetic locus: BMP2K (human) mapping to 4q21.21.

SOURCE

BMP2K (NQ-C10) is a mouse monoclonal antibody raised against recombinant BMP2K protein of human origin.

PRODUCT

Each vial contains 200 μ l ascites containing IgG with < 0.1% sodium azide.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

APPLICATIONS

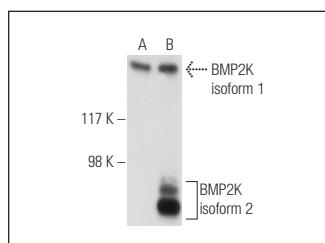
BMP2K (NQ-C10) is recommended for detection of BMP2K of human origin by Western Blotting (starting dilution: to be determined by researcher, dilution range 1:100-1:5000), immunoprecipitation [1-2 μ l per 100-500 μ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution to be determined by researcher, dilution range 1:30-1:5000).

Suitable for use as control antibody for BMP2K siRNA (h): sc-89069, BMP2K shRNA Plasmid (h): sc-89069-SH and BMP2K shRNA (h) Lentiviral Particles: sc-89069-V.

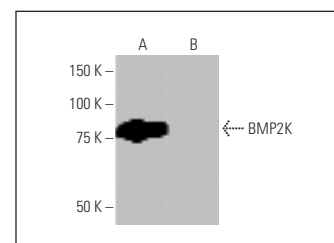
Molecular Weight of BMP2K: 126 kDa.

Positive Controls: BMP2K (h): 293T Lysate: sc-172560 or Hep G2 cell lysate: sc-2227.

DATA



BMP2K (NQ-C10): sc-134284. Western blot analysis of BMP2K expression in non-transfected: sc-117752 (A) and human BMP2K transfected: sc-172560 (B) 293T whole cell lysates.



BMP2K (NQ-C10): sc-134284. Western blot analysis of BMP2K expression in human BMP2K transfected (A) and non-transfected (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

- Mercado-Matos, J., et al. 2018. Identification of a novel invasion-promoting region in Insulin receptor substrate 2. *Mol. Cell. Biol.* 38: e00590-17.
- Cendrowski, J., et al. 2020. Splicing variation of BMP2K balances abundance of COPII assemblies and autophagic degradation in erythroid cells. *Elife* 9: e58504.
- Pu, S., et al. 2020. BIKE regulates dengue virus infection and is a cellular target for broad-spectrum antivirals. *Antiviral Res.* E-published.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.