SANTA CRUZ BIOTECHNOLOGY, INC.

BMP2K (E-8): sc-514681

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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

1. Hanks, S.K., et al. 1988. The protein kinase family: conserved features and deduced phylogeny of the catalytic domains. Science 241: 42-52.
2. Hoffmann, A. and Gross, G. 2001. BMP signaling pathways in cartilage and bone formation. Crit. Rev. Eukaryot. Gene Expr. 11: 23-45.
3. 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.
4. 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.

CHROMOSOMAL LOCATION

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

SOURCE

BMP2K (E-8) is a mouse monoclonal antibody raised against amino acids 969-1161 mapping at the C-terminus of BMP2K of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

BMP2K (E-8) is available conjugated to agarose (sc-514681 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-514681 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514681 PE), fluorescein (sc-514681 FITC), Alexa Fluor® 488 (sc-514681 AF488), Alexa Fluor® 546 (sc-514681 AF546), Alexa Fluor® 594 (sc-514681 AF594) or Alexa Fluor® 647 (sc-514681 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514681 AF680) or Alexa Fluor® 790 (sc-514681 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

BMP2K (E-8) is recommended for detection of BMP2K of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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 BMP2K siRNA (h): sc-89069, BMP2K shRNA Plasmid (h): sc-89069-SH and BMP2K shRNA (h) Lentiviral Particles: sc-89069-V.

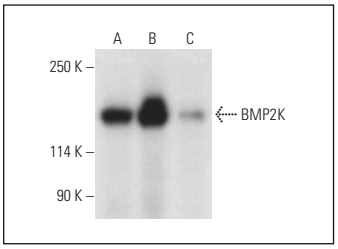
Molecular Weight of BMP2K: 126 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, K-562 whole cell lysate: sc-2203 or HEL 92.1.7 cell lysate: sc-2270.

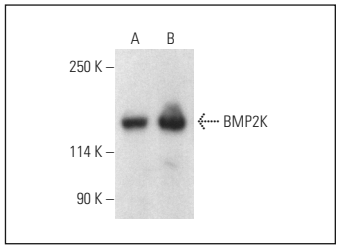
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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



BMP2K (E-8): sc-514681. Western blot analysis of BMP2K expression in HEL 92.1.7 (**A**), K-562 (**B**) and Jurkat (**C**) whole cell lysates. Detection reagent used: m-IgG_{2a} BP-HRP: sc-542731.



BMP2K (E-8): sc-514681. Western blot analysis of BMP2K expression in HEL 92.1.7 (**A**) and K-562 (**B**) whole cell lysates. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.

SELECT PRODUCT CITATIONS

1. Sahlender, B., et al. 2022. Superoxide dismutase and catalase significantly improve the osteogenic differentiation potential of osteogenetically compromised human adipose tissue-derived stromal cells *in vitro*. Stem Cell Res. 60: 102708.

STORAGE

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