SANTA CRUZ BIOTECHNOLOGY, INC.

Nkx-3.2 (H-4): sc-514166

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The homeobox gene Nkx-3.2, also designated Bapx1, is the human homolog of *Drosophila* bagpipe, which, in conjunction with tinman, determines cell fate in the dorsal mesoderm. In mammalian species, Nkx-3.2 is a key transcription factor that regulates the development of smooth muscle tissues and skeletal structures. Specifically, Nkx-3.2 regulates spleen development and the development of the axial skeleton. It is also considered as an early marker for prechondrogenic cells. The human Nkx-3.2 gene maps to chromosome 4p15.33, a region containing loci for several skeletal diseases. Nkx-3.2 null mice exhibit skeletal dysplasia, asplenia, and gastroduodenal malformation, with abnormal development of the vertebral column and cranial bones of mesodermal origin. During axial cartilage formation, Nkx-3.2 inhibits the actions of Shh, a factor that interferes with the prochondrogenic effects of the BMPs.

REFERENCES

1. Azpiazu, N., et al. 1993. tinman and bagpipe: two homeo box genes that determine cell fates in the dorsal mesoderm of *Drosophila*. Genes Dev. 7: 1325-1340.
2. Lettice, L.A., et al. 1999. The mouse bagpipe gene controls development of axial skeleton, skull, and spleen. Proc. Natl. Acad. Sci. USA 96: 9695-9700.
3. Tribioli, C., et al. 1999. The murine Bapx1 homeobox gene plays a critical role in embryonic development of the axial skeleton and spleen. Development 126: 5699-5711.
4. Akazawa, H., et al. 2000. Targeted disruption of the homeobox transcription factor Bapx1 results in lethal skeletal dysplasia with asplenia and gastroduodenal malformation. Genes Cells 5: 499-513.

CHROMOSOMAL LOCATION

Genetic locus: NKX3-2 (human) mapping to 4p15.33; Nkx3-2 (mouse) mapping to 5 B3.

SOURCE

Nkx-3.2 (H-4) is a mouse monoclonal antibody raised against amino acids 265-309 mapping near the C-terminus of Nkx-3.2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Nkx-3.2 (H-4) is available conjugated to agarose (sc-514166 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-514166 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514166 PE), fluorescein (sc-514166 FITC), Alexa Fluor® 488 (sc-514166 AF488), Alexa Fluor® 546 (sc-514166 AF546), Alexa Fluor® 594 (sc-514166 AF594) or Alexa Fluor® 647 (sc-514166 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514166 AF680) or Alexa Fluor® 790 (sc-514166 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

Nkx-3.2 (H-4) is recommended for detection of Nkx-3.2 of mouse, rat and 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 Nkx-3.2 siRNA (h): sc-38729, Nkx-3.2 siRNA (m): sc-38730, Nkx-3.2 shRNA Plasmid (h): sc-38729-SH, Nkx-3.2 shRNA Plasmid (m): sc-38730-SH, Nkx-3.2 shRNA (h) Lentiviral Particles: sc-38729-V and Nkx-3.2 shRNA (m) Lentiviral Particles: sc-38730-V.

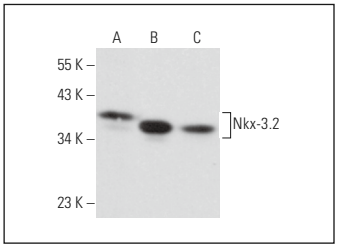
Molecular Weight of Nkx-3.2: 35 kDa.

Positive Controls: HEK293 whole cell lysate: sc-45136, Jurkat whole cell lysate: sc-2204 or 3T3-L1 cell lysate: sc-2243.

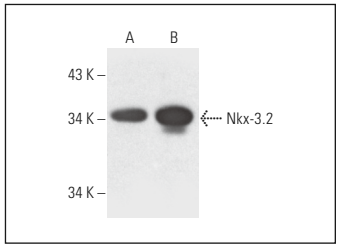
RECOMMENDED SUPPORT REAGENTS

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



Nkx-3.2 (H-4): sc-514166. Western blot analysis of Nkx-3.2 expression in Jurkat (**A**), 3T3-L1 (**B**) and BYDP (**C**) whole cell lysates.



Nkx-3.2 (H-4): sc-514166. Western blot analysis of Nkx-3.2 expression in HEK293 (**A**) and Jurkat (**B**) whole cell lysates.

STORAGE

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

PROTOCOLS

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