SANTA CRUZ BIOTECHNOLOGY, INC.

Nkx-3.2 (O-24): sc-133829

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 4p16.1, 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.
5. Murtaugh, L.C., et al. 2001. The chick transcriptional repressor Nkx-3.2 acts downstream of Shh to promote BMP-dependent axial chondrogenesis. Dev. Cell 1: 411-422.
6. Nishida, W., et al. 2002. A triad of serum response factor and the GATA and NK families governs the transcription of smooth and cardiac muscle genes. J. Biol. Chem. 277: 7308-7317.

CHROMOSOMAL LOCATION

Genetic locus: BAPX1 (human) mapping to 4p15.33; Nkx3-2 (mouse) mapping to 5 B3.

SOURCE

Nkx-3.2 (O-24) is an affinity purified rabbit polyclonal antibody raised against synthetic Nkx-3.2 peptide of mouse origin.

PRODUCT

Each vial contains 50 µg IgG in 0.5 ml of PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

STORAGE

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

APPLICATIONS

Nkx-3.2 (O-24) is recommended for detection of Nkx-3.2 of mouse, human and canine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] 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.

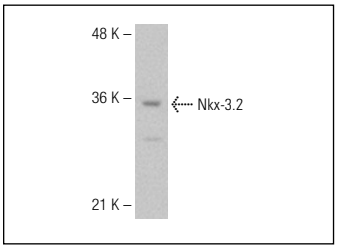
Molecular Weight of Nkx-3.2: 35 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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



Nkx-3.2 (O-24): sc-133829. Western blot analysis of Nkx-3.2 expression in Jurkat whole cell lysate.

RESEARCH USE

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

PROTOCOLS

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