

Nkx-3.1 (N-15): sc-15021

BACKGROUND

The homeobox gene Nkx-3.1 is the human homolog of *Drosophila* bagpipe, which, in conjunction with tinman, determines cell fate in the dorsal mesoderm. In mammalian species, Nkx-3.1 is predominantly expressed in prostate, and it regulates prostate development in response to sonic hedgehog (Shh) signaling by exerting growth-suppressive and differentiating effects on prostatic epithelium. Nkx-3.1 is also expressed at lower levels in other tissues, including the heart and gut, in a Shh independent manner, where it plays a role in regulating proliferation of glandular epithelium and in the formation of ducts in prostate and minor salivary glands. Nkx-3.1 preferentially binds the TAAGTA sequence, which has not been reported for any other NK class homeoprotein. The human Nkx-3.1 gene is located on chromosome 8q21.2, which frequently undergoes a loss of heterozygosity, and although Nkx-3.1 is not a tumor suppressor gene, it may be a useful marker for benign and malignant prostate epithelium.

REFERENCES

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2. Scivolino, P.J., et al. 1997. Tissue-specific expression of murine Nkx-3.1 in the male urogenital system. *Dev. Dyn.* 209: 127-138.
3. Bowen, C., et al. 2000. Loss of Nkx-3.1 expression in human prostate cancers correlates with tumor progression. *Cancer Res.* 60: 6111-6115.
4. Schneider, A., et al. 2000. Targeted disruption of the Nkx-3.1 gene in mice results in morphogenetic defects of minor salivary glands: parallels to glandular duct morphogenesis in prostate. *Mech. Dev.* 95: 163-174.
5. Steadman, D.J., et al. 2000. DNA-binding sequence of the human prostate-specific homeodomain protein Nkx-3.1. *Nucleic Acids Res.* 28: 2389-2395.
6. Tanaka, M., et al. 2000. Nkx-3.1, a murine homolog of *Drosophila* bagpipe, regulates epithelial ductal branching and proliferation of the prostate and palatine glands. *Dev. Dyn.* 219: 248-260.
7. Ornstein, D.K., et al. 2001. Expression studies and mutational analysis of the androgen regulated homeobox gene Nkx-3.1 in benign and malignant prostate epithelium. *J. Urol.* 165: 1329-1334.

CHROMOSOMAL LOCATION

Genetic locus: NKX3-1 (human) mapping to 8p21.2.

SOURCE

Nkx-3.1 (N-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Nkx-3.1 of human origin.

STORAGE

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

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-15021 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-15021 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Nkx-3.1 (N-15) is recommended for detection of Nkx-3.1 of human 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)], 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).

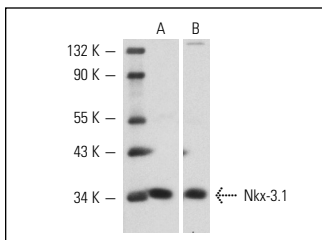
Suitable for use as control antibody for Nkx-3.1 siRNA (h): sc-36077, Nkx-3.1 shRNA Plasmid (h): sc-36077-SH and Nkx-3.1 shRNA (h) Lentiviral Particles: sc-36077-V.

Nkx-3.1 (N-15) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of Nkx-3.1: 35 kDa.

Positive Controls: LNCaP cell lysate: sc-2231.

DATA



Western blot analysis of Nkx-3.1 expression in LNCaP whole cell lysate. Antibodies used: Nkx-3.1 (N-15): sc-15021 (A) and Nkx-3.1 (T-19): sc-15022 (B).

SELECT PRODUCT CITATIONS

1. Simmons, S.O., et al. 2006. Nkx3.1 binds and negatively regulates the transcriptional activity of Sp-family members in prostate-derived cells. *Biochem. J.* 393: 397-409.

RESEARCH USE

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


 MONOS
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Try **Nkx-3.1 (A-3): sc-393190** or **Nkx-3.1 (820C3a): sc-81340**, our highly recommended monoclonal alternatives to Nkx-3.1 (N-15).