

# Nkx-3.1 (M-96): sc-25406

## 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, 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

1. Azpiroz, 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. Scialolino, 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.

## CHROMOSOMAL LOCATION

Genetic locus: Nkx3-1 (mouse) mapping to 14 D2.

## SOURCE

Nkx-3.1 (M-96) is a rabbit polyclonal antibody raised against amino acids 1-96 mapping at the N-terminus of Nkx-3.1 of mouse origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-25406 X, 200 µg/0.1 ml.

## RESEARCH USE

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

## APPLICATIONS

Nkx-3.1 (M-96) is recommended for detection of Nkx-3.1 of mouse and rat 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 (m): sc-36078, Nkx-3.1 shRNA Plasmid (m): sc-36078-SH and Nkx-3.1 shRNA (m) Lentiviral Particles: sc-36078-V.

Nkx-3.1 (M-96) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

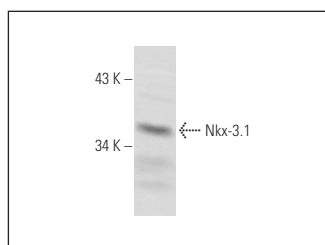
Molecular Weight of Nkx-3.1: 35 kDa.

Positive Controls: AT-3 whole cell lysate.

## 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). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



Nkx-3.1 (M-96): sc-25406. Western blot analysis of Nkx-3.1 expression in AT-3 whole cell lysate.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.