

Nkx-3.1 (T-19): sc-15022

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.

CHROMOSOMAL LOCATION

Genetic locus: NKX3-1 (human) mapping to 8p21.2; Nkx3-1 (mouse) mapping to 14 D2.

SOURCE

Nkx-3.1 (T-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Nkx-3.1 of human origin.

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-15022 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-15022 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Nkx-3.1 (T-19) is recommended for detection of Nkx-3.1 of mouse, rat and 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).

Nkx-3.1 (T-19) is also recommended for detection of Nkx-3.1 in additional species, including bovine.

Suitable for use as control antibody for Nkx-3.1 siRNA (h): sc-36077, Nkx-3.1 siRNA (m): sc-36078, Nkx-3.1 shRNA Plasmid (h): sc-36077-SH, Nkx-3.1 shRNA Plasmid (m): sc-36078-SH, Nkx-3.1 shRNA (h) Lentiviral Particles: sc-36077-V and Nkx-3.1 shRNA (m) Lentiviral Particles: sc-36078-V.

Nkx-3.1 (T-19) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

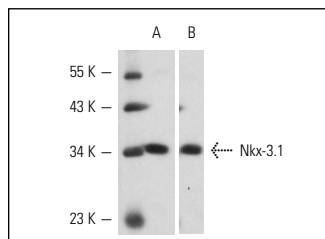
Molecular Weight of Nkx-3.1: 35 kDa.

Positive Controls: LNCaP cell lysate: sc-2231.

STORAGE

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

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. Lei, Q., et al. 2006. Nkx-3.1 stabilizes p53, inhibits AKT activation, and blocks prostate cancer initiation caused by PTEN loss. *Cancer Cell* 9: 367-378.
2. Simmons, S.O., et al. 2006. Nkx-3.1 binds and negatively regulates the transcriptional activity of Sp-family members in prostate-derived cells. *Biochem. J.* 393: 397-409.
3. Jiao, J., et al. 2007. Murine cell lines derived from Pten null prostate cancer show the critical role of PTEN in hormone refractory prostate cancer development. *Cancer Res.* 67: 6083-6091.
4. Chang, C.J., et al. 2008. PTEN nuclear localization is regulated by oxidative stress and mediates p53-dependent tumor suppression. *Mol. Cell. Biol.* 28: 3281-3289.
5. Shyr, C.R., et al. 2009. Tumor suppressor PAX6 functions as androgen receptor co-repressor to inhibit prostate cancer growth. *Prostate* 70: 190-199.
6. Kunderfranco, P., et al. 2010. ETS transcription factors control transcription of EZH2 and epigenetic silencing of the tumor suppressor gene Nkx3.1 in prostate cancer. *PLoS ONE* 5: e10547.

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.



Try **Nkx-3.1 (A-3): sc-393190** or **Nkx-3.1 (820C3a): sc-81340**, our highly recommended monoclonal alternatives to Nkx-3.1 (T-19).