

Nkx-3.1 (820C3a): sc-81340

BACKGROUND

The homeobox gene NKX3-1 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 NKX3-1 gene is located on chromosome 8q21.2, which frequently undergoes a loss of heterozygosity, and although NKX3-1 is not a tumor suppressor gene, it may be a useful marker for benign and malignant prostate epithelium.

REFERENCES

1. Azpiazu, N., et al. 1993. Tinman and bagpipe: two homeobox genes that determine cell fates in the dorsal mesoderm of *Drosophila*. *Genes Dev.* 7: 1325-1340.
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 Nkx3-1 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 (human) mapping to 8p21.2.

SOURCE

Nkx-3.1 (820C3a) is a mouse monoclonal antibody raised against a recombinant protein corresponding to an internal region of Nkx-3.1 of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 1.0% stabilizer protein.

PROTOCOLS

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

APPLICATIONS

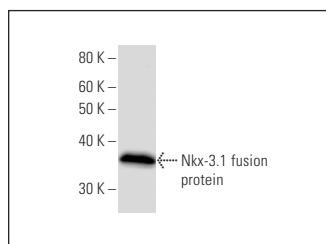
Nkx-3.1 (820C3a) is recommended for detection of Nkx-3.1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

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.

Molecular Weight of Nkx-3.1: 35 kDa.

Positive Controls: LNCaP cell lysate: sc-2231.

DATA



Nkx-3.1 (820C3a): sc-81340. Western Blot analysis of human recombinant Nkx-3.1 fusion protein.

SELECT PRODUCT CITATIONS

1. Damaschke, N.A., et al. 2017. Loss of Igf2 gene imprinting in murine prostate promotes widespread neoplastic growth. *Cancer Res.* 77: 5236-5247.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

RESEARCH USE

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