



Qty: 100 µg/200 µl

Mouse anti-Nkx3.1

Catalog No. 35-9700

Lot No.

Mouse anti-Nkx3.1

FORM

This monoclonal antibody is supplied as a 200 µl aliquot at a concentration of 0.5 mg/ml in PBS, pH 7.4, containing 0.1% sodium azide. This antibody is highly purified from mouse ascites by protein A chromatography.

CLONE: 3-9

ISOTYPE: Mouse IgG₁

IMMUNOGEN

Fusion protein containing the N-terminal domain of the human Nkx3.1 protein.

SPECIFICITY

This antibody reacts with human Nkx3.1 protein, and does not cross-react with mouse. On Western blots, this antibody detects a band at ~34 kDa.

REACTIVITY

Reactivity has been confirmed with human LN Cap-FGC prostate carcinoma cell lysates.

Sample	Immuno-histochemistry (paraffin)	Immuno-histochemistry (frozen)	Western Blotting	ELISA
Human	+++	+++	+++	ND
Mouse	0	0	0	0
Immunogen	N/A	N/A	N/A	+++

(Excellent +++, Good++, Poor +, No reactivity 0, Not applicable N/A, Not Determined ND)

USAGE

Working concentrations for specific applications should be determined by the investigator. Appropriate concentrations will be affected by several factors, including secondary antibody affinity, antigen concentration, sensitivity of detection method, temperature and length of incubations, etc. The suitability of this antibody for applications other than those listed below has not been determined. The following concentration ranges are recommended starting points for this product.

Immunohistochemistry : 10-20 µg/mL

Western Blotting : 1-3 µg/mL

ELISA : 0.1-1.0 µg/mL

STORAGE

Store at 2-8°C for up to one month. Store at -20°C for long-term storage. Avoid repeated freezing and thawing.

(cont'd)

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PI359700

(Rev 10/08) DCC-08-1089

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BACKGROUND

The Nkx3.1 protein is the product of a prostate-specific regulatory gene known as the *NKX3.1* homeobox gene. *NKX3.1* maps to chromosome band 8p21; loss of heterozygosity at this particular site has been associated with tissue de-differentiation and loss of androgen responsiveness in the progression of prostate cancer.¹ Loss of specific regions of chromosome 8 occur in 60-80% of prostate tumors.^{2,3} Loss of 8p12-21 has been identified as an early event in prostate carcinogenesis (ie in PIN lesions and early invasive carcinoma), while loss of 8p22 is recognized as a later event, common in more advanced carcinoma.⁴

Although a broad range of tumor suppressor genes, including *NKX3.1*, *PTEN*, *Rb*, *p27*, *p16*, and *Myc*, have been proposed as the genetic loci directly responsible for the chromosomal abnormalities characteristic of prostate cancer, none of these genes has consistently demonstrated mutations in a large population of prostate cancer specimens.⁴

Mouse studies of *NKX3.1* have demonstrated that the gene is essential for normal prostate morphogenesis and function. Inactivation produces prostatic epithelial hyperplasia and dysplasia, closely modeling a preneoplastic condition.⁵ In vitro, overexpression of human and mouse *NKX3.1* suppresses growth and tumorigenicity of prostate carcinoma cells.⁵ Taken together with the mapping of human *NKX3.1* to chromosome 8p21, which undergoes loss of heterozygosity in prostate tumors, these findings suggest that *NKX3.1* may be responsible for maintaining the normal prostate, and its loss may represent a predisposing event for prostate carcinogenesis.⁵ Evidence also exists in mouse models of prostate carcinogenesis that inactivation of *NKX3.1* occurs through loss of Nkx3.1 protein expression.⁶ In mice, loss of *NKX3.1* function is associated with loss of *PTEN* function; this cooperation results in the activation of the Akt protein, which promotes cell growth and survival.⁶

REFERENCES

1. He WW, et al. *Genomics* 43(1):69-77, 1997.
2. Chang M, et al. *Am J Pathol* 144:1-6, 1994.
3. Matsuyama H, et al. *Oncogene* 9:3071-3076, 1994.
4. Abate-Shen C, Shen MM. *Genes & Devel* 14:2410-2434, 2000.
5. Bhatia-Gaur R, et al. *Genes & Devel* 13:966-977, 1999.
6. Kim MJ, et al. *PNAS* 99(5):2884-2889, 2002.

RELATED PRODUCTS

Product	Clone/PAD*	Cat. No.
Rabbit anti-PTEN	EC8	51-7800
Rabbit anti-PTEN	PN37	51-2400
Rabbit anti-phospho-Akt (Ser473)	ZMD.234	34-8400
Mouse anti-Retinoblastoma (Rb) Gene Product	MAb1 (Pb20B3)	28-0007
Rabbit anti-phospho-Rb (Ser608)	Z99.SS	34-1800
Mouse anti-p27	p27-11D11	33-2800
Rabbit anti-p27	FP1	71-9600
Rabbit anti-phospho-p27 (Thr187)	PT-187	71-7700
Rabbit anti-phospho-p27 (Ser10)	ZMD.212	34-6300
Rabbit anti-PSMA (C-term)	ZMD.80	18-7318
Mouse anti-PSA	Z009	18-0044
Protein A	Sepharose® 4B	10-1041
rec-Protein G	Sepharose® 4B	10-1241

*PAD: Polyclonal Antibody Designation

Conjugate	ZyMAX™ Goat x Rabbit IgG (H+L)	ZyMAX™ Goat x Mouse IgG (H+L)
Purified	81-6100	81-6500
FITC	81-6111	81-6511
TRITC	81-6114	81-6514
Cy™3	81-6115	81-6515
Cy™5	81-6116	81-6516
HRP	81-6120	81-6520
AP	81-6122	81-6522
Biotin	81-6140	81-6540

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