Revision 4

Store at -20C

#83700

NKX3.1 (D2Y1A) XP® Rabbit mAb

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IF-IC, ChIP, ChIP-seq	H	Endogenous	30	Rabbit IgG	#Q99801	4824

Product Usage Information

For optimal ChIP and ChIP-seq results, use 5 µl of antibody and 10 µg of chromatin (approximately 4 x 10^6 cells) per IP. This antibody has been validated using SimpleChIP® Enzymatic Chromatin IP Kits.

Application	Dilution
Western Blotting	1:1000
Immunofluorescence (Immunocytochemistry)	1:100
Chromatin IP	1:100
Chromatin IP-seq	1:100

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

NKX3.1 (D2Y1A) XP® Rabbit mAb recognizes endogenous levels of total NKX3.1 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with recombinant protein specific to human NKX3.1 protein.

Background

NKX3.1 is a homeobox transcription factor that in mammals plays a defining role in embryonic prostate morphogenesis. The expression of mammalian NKX3.1 is androgen-dependent, restricted primarily to developing and mature prostate epithelium, and is frequently reduced or lost in prostate cancer (1-3). The human *NKX3.1* gene is located on chromsome 8p21.2, within a region that shows loss of heterozygosity (LOH) in >50% of prostate cancer cases (2). Allelic loss at the *NKX3.1* locus is also common in high grade Prostate Intraepithelial Neoplasia (PIN), thought to be a putative precursor lesion to invasive prostate adenocarcinomas, suggesting that LOH at the *NKX3.1* locus is a critical early step in prostate cancer development (4). Notably, the remaining *NKX3.1* allele is intact in the majority of LOH cases, leading to the suggestion that NKX3.1 functions as a haploinsufficient tumor suppressor (4-6). Due to its highly restricted expression in prostate epithelial cells, NKX3.1 has been suggested as a diagnostic marker of prostate carcinoma (7), and may have additional utility as a biomarker of metastatic lesions originating in the prostate (8).

Background References

1. Bhatia-Gaur, R. et al. (1999) *Genes Dev* 13, 966-77.
2. He, W.W. et al. (1997) *Genomics* 43, 69-77.
3. Bowen, C. et al. (2000) *Cancer Res* 60, 6111-5.
4. Magee, J.A. et al. (2003) *Cancer Cell* 3, 273-83.
5. Voeller, H.J. et al. (1997) *Cancer Res* 57, 4455-9.
6. Bethel, C.R. et al. (2006) *Cancer Res* 66, 10683-90.
7. Epstein, J.I. et al. (2014) *Am J Surg Pathol* 38, e6-e19.
8. Conner, J.R. and Hornick, J.L. (2015) *Adv Anat Pathol* 22, 149-67.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IF-IC:** Immunofluorescence (Immunocytochemistry) **ChIP:** Chromatin IP **ChIP-seq:** Chromatin IP-seq

Cross-Reactivity Key

H: Human

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