

PRODUCT INFORMATION

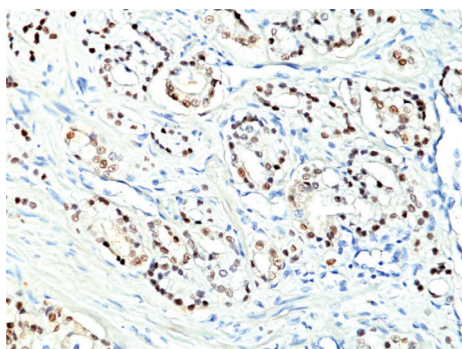
NKX3.1 (N-Term) Rabbit Monoclonal Antibody (Clone RM430)

Item No. 35320

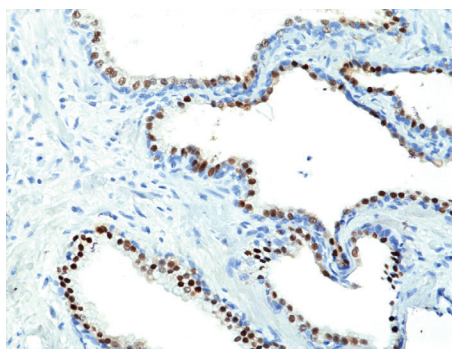
Overview and Properties

Contents:	This vial contains 100 µl of protein A-affinity purified monoclonal antibody.
Synonyms:	Homeobox Protein Nkx-3.1, NK3 Homeobox 1, NKX3A
Immunogen:	A peptide corresponding to the N-terminus of human Nkx3.1
Cross Reactivity:	(+) NKX3.1
Species Reactivity:	(+) Human
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS with 50% glycerol, 1% BSA, and 0.09% sodium azide
Clone:	RM430
Host:	Rabbit
Isotype:	IgG
Applications:	Immunohistochemistry; the recommended starting dilution is 1:100-1:400. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



Immunohistochemical staining of formalin-fixed and paraffin-embedded human prostate cancer tissue section using NKX3.1 (N-Term) Rabbit Monoclonal Antibody (Clone RM430) at a dilution of 1:100.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human prostate section using NKX3.1 (N-Term) Rabbit Monoclonal Antibody (Clone RM430) at a dilution of 1:200.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

NKX3.1 is a homeoprotein transcription factor expressed solely in prostate epithelial cells that is essential to normal prostate development.¹ It functions as a tumor suppressor, regulating gene expression and cell proliferation in a non-cell autonomous manner.¹ NKX3.1 forms complexes with the androgen receptor to mediate DNA repair generated during transcriptional activation and is activated in response to DNA damage to accelerate damage repair via activation of ataxia-telangiectasia mutated kinase (ATM).^{2,3} NKX3.1 can also be imported to the mitochondria by the chaperone protein HSPA9 where it induces expression of mitochondrial-encoded electron transport chain genes to restore oxidative phosphorylation under oxidative stress conditions.⁴ Loss of *NKX3.1* expression is associated with hormone-refractoriness and advanced tumor stage in patients with prostate cancer.⁵ It has been used as a biomarker for prostate cancer and to determine the origin of metastatic tumors.⁶ Cayman's NKX3.1 Rabbit Monoclonal Antibody (Clone RM430) can be used for immunohistochemistry (IHC).

References

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2. Zhang, H., Zheng, T., Chua, C.W., *et al.* Nkx3.1 controls the DNA repair response in the mouse prostate. *Prostate* **76**(4), 402-408 (2016).
3. Bowen, C. and Gelmann, E.P. NKX3.1 activates cellular response to DNA damage. *Cancer Res.* **70**(8), 3089-3097 (2010).
4. Papachristodoulou, A., Rodriguez-Calero, A., Panja, S., *et al.* NKX3.1 localization to mitochondria suppresses prostate cancer initiation. *Cancer Discov.* **11**(9), 2316-2333 (2021).
5. Bowen, C., Bubendorf, L., Voeller, H.J., *et al.* Loss of NKX3.1 expression in human prostate cancers correlates with tumor progression. *Cancer Res.* **60**(21), 6111-6115 (2000).
6. Shen, J.Z., Memon, A.A., Hackney, J.R., *et al.* NKX3.1 identifies prostatic origin of dural metastasis in the setting of negative prostate-specific antigen stain. *Neurohospitalist* **10**(4), 314-317 (2020).

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