



# NKX3.1

## Concentrated and Prediluted Polyclonal Antibody

Control Number: 901-422-022311

ISO  
9001:2000  
CERTIFIED

<b>Catalog Number:</b>	<b>CP 422 A, B</b>	<b>PP 422 AA</b>
<b>Description:</b>	0.1, 0.5 ml, concentrated	6.0 ml, prediluted
<b>Dilution:</b>	1:50-1:100	Ready-to-use
<b>Diluent:</b>	Renoir Red	N/A

**Intended Use:**

For In Vitro Diagnostic Use

**Summary and Explanation:**

NKX-3.1 is a protein found in humans and is encoded by the NKX3-1 gene located on chromosome 8. The homeodomain containing transcription factor NKX3A is a putative prostate tumor suppressor that is expressed in a largely prostate-specific and androgen-regulated manner. NKX3.1 protein has been found to be positive in the vast majority of primary prostatic adenocarcinomas. A recent study showed that NKX3.1 staining was highly sensitive and specific for high-grade prostatic adenocarcinomas. The sensitivity for identifying metastatic prostatic adenocarcinomas overall was 98.6% (68/69 cases positive) for NKX3.1, and 94.2% (65/69 cores positive) for PSA. The specificity of NKX3.1 was 99.7% (1/349) in various cancers. NKX3.1 stains nuclei in both normal and prostate cancer; thus providing a robust stain that is easy-to-interpret, similar to other transcription factors such as TTF-1 or CDX2.

In the appropriate clinical setting, the addition of IHC staining for NKX3.1, along with other prostate-restricted markers, may prove to be a valuable adjunct to definitively determine prostatic origin in poorly differentiated metastatic carcinomas. NKX3.1 used in combination with ERG monoclonal antibody [9FY], may represent one of the most sensitive and specific markers for identifying tumors of prostatic origin.

**Principle of Procedure:**

Antigen detection in tissues and cells is a multi-step immunohistochemical process. The initial step binds the primary antibody to its specific epitope. After labeling the antigen with a primary antibody, an enzyme labeled polymer is added to bind to the primary antibody. The detection of the bound antibody is evidenced by a colorimetric reaction.

**Source:** Rabbit polyclonal

**Species Reactivity:** Human, others not tested

**Clone:** N/A

**Isotype:** N/A

**Total Protein Concentration:** ~10 mg/ml. Call for lot specific Ig concentration.

**Epitope/Antigen:** Human NKX3.1 protein

**Cellular Localization:** Nuclear

**Positive Control:** Normal prostate or prostate cancer

**Normal Tissue:** Prostate

**Abnormal Tissue:** Prostate cancer

**Known Applications:**

Immunohistochemistry (formalin-fixed paraffin-embedded tissues)

**Supplied As:** Buffer with protein carrier and preservative.

**Storage and Stability:**

Store at 2°C to 8°C. Do not use after expiration date printed on vial. If reagents are stored under conditions other than those specified in the package insert, they must be verified by the user. Diluted reagents should be used promptly; any remaining reagent should be stored at 2°C to 8°C.

**Protocol Recommendations:**

**Peroxide Block:**

Block for 5 minutes with Biocare's Peroxidized 1.

**Pretreatment Solution:** Reveal or Diva

**Protocol Recommendations Cont'd:**

**Pretreatment Protocol:**

Heat Retrieval Method:

Retrieve sections under pressure using Biocare's Decloaking Chamber, followed by a wash in distilled water. Alternatively, steam tissue sections for 45-60 minutes. Allow solution to cool for 10 minutes then wash in distilled water.

**Protein Block:**

**Optional:** Incubate for 5-10 minutes at RT with Biocare's Background Punisher.

**Primary Antibody:** Incubate for 30 minutes at RT.

**Probe:** N/A

**Polymer:** Incubate for 30 minutes at RT with a Polymer.

**Chromogen:**

Incubate for 5 minutes at RT when using Biocare's DAB – OR – Incubate for 5-7 minutes at RT when using Biocare's Warp Red.

**Counterstain:**

Counterstain with Hematoxylin. Rinse with deionized water. Apply Tacha's Bluing solution for 1 minute. Rinse with deionized water.

**Technical Note:**

This antibody has been standardized with Biocare's MACH 4 detection system. It can also be used on an automated staining system and with other Biocare polymer detection kits. Use TBS buffer for washing steps.

**Performance Characteristics:**

The optimum antibody dilution and protocols for a specific application can vary. These include, but are not limited to: fixation, heat-retrieval method, incubation times, tissue section thickness and detection kit used. Due to the superior sensitivity of these unique reagents, the recommended incubation times and titers listed are not applicable to other detection systems, as results may vary. The data sheet recommendations and protocols are based on exclusive use of Biocare products. Ultimately, it is the responsibility of the investigator to determine optimal conditions. These products are tools that can be used for interpretation of morphological findings in conjunction with other diagnostic tests and pertinent clinical data by a qualified pathologist.

**Quality Control:**

Refer to NCCLS Quality Assurance for Immunocytochemistry approved guidelines, December 1999 MM4-A Vol.19 No.26 for more information about tissue controls.

**Precautions:**

This antibody contains less than 0.1% sodium azide. Concentrations less than 0.1% are not reportable hazardous materials according to U.S. 29 CFR 1910.1200, OSHA Hazard communication and EC Directive 91/155/EC.

Sodium azide (NaN<sub>3</sub>) used as a preservative is toxic if ingested. Sodium azide may react with lead and copper plumbing to form highly explosive metal azides. Upon disposal, flush with large volumes of water to prevent azide build-up in plumbing. (Center for Disease Control, 1976, National Institute of Occupational Safety and Health, 1976)

Specimens, before and after fixation, and all materials exposed to them should be handled as if capable of transmitting infection and disposed of with proper precautions. Never pipette reagents by mouth and avoid contacting the skin and mucous membranes with reagents and specimens. If reagents or specimens come in contact with sensitive areas, wash with copious amounts of water.

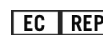
Microbial contamination of reagents may result in an increase in nonspecific staining. Incubation times or temperatures other than those specified may give erroneous results. The user must validate any such change. The MSDS is available upon request.

**Troubleshooting:**

Follow the antibody specific protocol recommendations according to data sheet provided. If atypical results occur, contact Biocare's Technical Support at 1-800-542-2002.

**Limitations and Warranty:**

There are no warranties, expressed or implied, which extend beyond this description. Biocare is not liable for property damage, personal injury, or economic loss caused by this product.



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**References:**

1. Bowen C, Gelmann EP. NKX3.1 activates cellular response to DNA damage. *Cancer Res.* 2010 Apr 15; 70(8):3089-97.
2. Gurel B, et al. NKX3.1 as a marker of prostatic origin in metastatic tumors. *Am J Surg Pathol.* 2010 Aug; 34(8):1097-105.
3. Chuang AY, et al. Immunohistochemical differentiation of high-grade prostate carcinoma from urothelial carcinoma. *Am J Surg Pathol.* 2007 Aug; 31(8):1246-55.
4. Center for Disease Control Manual. Guide: Safety Management, NO. CDC-22, Atlanta, GA. April 30, 1976 "Decontamination of Laboratory Sink Drains to Remove Azide Salts."
5. National Committee for Clinical Laboratory Standards (NCCLS). Protection of laboratory workers from infectious diseases transmitted by blood and tissue; proposed guideline. Villanova, PA 1991; 7(9). Order code M29-P.

