

# PAX8 (M)

Concentrated and Prediluted Monoclonal Antibody  
902-438-090717

**BIOCARE**  
M E D I C A L

<b>Catalog Number:</b>	<b>ACR 438 A, B, C</b>	<b>APR 438 AA</b>
<b>Description:</b>	0.1, 0.5, 1.0 ml, concentrated	6.0 ml, prediluted
<b>Dilution:</b>	1:100	Ready-to-use
<b>Diluent</b>	Renoir Red	N/A

## Intended Use:

For Research Use Only. Not for use in diagnostic procedures.

## Summary and Explanation:

PAX8 is a member of the paired box (PAX) family of transcription factors. Members of this gene family typically encode proteins which contain a paired box domain, an octapeptide, and a paired-type homeodomain. This family plays critical roles during fetal development and cancer growth. PAX8 is involved in kidney cell differentiation, thyroid development, or thyroid dysgenesis.

PAX8 is expressed in a high percentage of renal cell carcinomas and ovarian cancers. This mouse monoclonal PAX8 antibody [BC12] has been designed to target a restricted epitope and exhibits higher specificity and provides sharper staining than the PAX8 rabbit polyclonal antibody. Unlike the polyclonal PAX8, this mouse monoclonal antibody does not stain B-cells, and does not recognize epitopes of pancreatic origin and neuroendocrine cells in stomach and colon; thus providing superior specificity. The expression of the mouse monoclonal PAX8 target antigens was found in normal kidney, thyroid and cervix, but was not identified in normal ovary. By Western blot, [BC12] has been shown to recognize PAX8 and not PAX2, PAX5 or PAX6 proteins. PAX8 stains nuclei exclusively and performs well in formalin-fixed paraffin-embedded tissues.

U.S. Patents 8,852,592, 9,417,243, and patents pending.

## 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. A secondary antibody may be applied to bind the primary antibody, followed by an enzyme labeled polymer; or an enzyme labeled polymer may be applied directly to bind the primary antibody. The detection of the bound primary antibody is evidenced by an enzyme-mediated colorimetric reaction.

**Source:** Mouse monoclonal

**Species Reactivity:** Human, mouse, rat, cat and dog

**Clone:** BC12

**Isotype:** IgG1

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

**Epitope/Antigen:** PAX8

**Cellular Localization:** Nuclear

**Positive Tissue Control:** Normal kidney, renal cell or serous ovarian carcinomas

## 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.

## Staining Protocol Recommendations:

**Peroxide Block:** Block for 5 minutes with Biocare's Peroxidized 1.

**Pretreatment:** Perform heat retrieval using Biocare's Diva or Reveal Decloaker. Refer to the Diva or Reveal Decloaker product data sheet for specific instructions.

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

## Staining Protocol Recommendations Cont'd:

**Primary Antibody:** Incubate for 30-60 minutes at RT.

**Probe:** Incubate for 10 minutes at RT with a secondary probe.

**Polymer:** Incubate for 10-20 minutes at RT with a tertiary polymer.

## Chromogen:

Incubate for 5 minutes at RT with Biocare's DAB – OR – Incubate for 5-7 minutes at RT with 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:

1. Counterstain lightly with hematoxylin as over-staining may mask stained nuclei, especially in clear cell RCC.

2. This antibody has been standardized with Biocare's MACH 4 detection system. Use TBS buffer for washing steps.

## Limitations:

This product is provided for Research Use Only (RUO) and is not for use in diagnostic procedures. Suitability for specific applications may vary and it is the responsibility of the end user to determine the appropriate application for its use.

## Precautions:

1. 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) (8)

2. 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 into contact with sensitive areas, wash with copious amounts of water. (9)

3. Microbial contamination of reagents may result in an increase in nonspecific staining.

4. Incubation times or temperatures other than those specified may give erroneous results. The user must validate any such change.

5. Do not use reagent after the expiration date printed on the vial.

6. The SDS is available upon request and is located at <http://biocare.net>.

## Technical Support:

Contact Biocare's Technical Support at 1-800-542-2002 for questions regarding this product.

## References:

1. Tacha D, *et al.* PAX8 mouse monoclonal antibody [BC12] recognizes a restricted epitope and is highly sensitive in renal cell and ovarian cancers but does not cross-react with b cells and tumors of pancreatic origin. *Appl Immunohistochem Mol Morphol.* 2013 Jan; 21(1): 59-63.

2. Tacha D, Zhou D, Cheng L. Expression of PAX8 in normal and neoplastic tissues: a comprehensive immunohistochemical study. *Appl Immunohistochem Mol Morphol.* 2011 Jul;19(4):293-9.

3. Lotan TL, *et al.* Immunohistochemical panel to identify the primary site of invasive micropapillary carcinoma. *Am J Surg Pathol.* 2009 Jul; 33(7):1037-41.



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Rev: 062117

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### References Cont'd:

4. Viktorová T, *et al.* Expression of PAX2 and PAX8 genes in conventional type of renal carcinoma and their role in the tumor prognosis. *Diagn Cytopathol.* 2008 Aug; 36(8):568-73.
5. Narlis M, *et al.* Pax2 and Pax8 regulate branching morphogenesis and nephron differentiation in the developing kidney. *J Am Soc Nephrol.* 2007 Apr; 18(4):1121-9.
6. Moretti L, *et al.* N-terminal PAX8 polyclonal antibody shows cross-reactivity with N-terminal region of PAX5 and is responsible for reports of PAX8 positivity in malignant lymphomas. *Mod Pathol.* 2012 Feb;25(2):231-6.
7. Lorenzo PI, *et al.* Immunohistochemical assessment of Pax8 expression during pancreatic islet development and in human neuroendocrine tumors. *Histochem Cell Biol.* 2011 Nov;136(5):595-607.
8. 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."
9. Clinical and Laboratory Standards Institute (CLSI). Protection of Laboratory Workers from Occupationally Acquired Infections; Approved Guideline-Fourth Edition CLSI document M29-A4 Wayne, PA 2014.



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