

# CD10 [UMAB236]

Prediluted Monoclonal Antibody  
901-3212-020818

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

**Catalog Number:** API 3212 AA  
**Description:** 6.0 ml, prediluted  
**Dilution:** Ready-to-use  
**Diluent:** N/A

## Intended Use:

For In Vitro Diagnostic Use

CD10 [UMAB236] is a mouse monoclonal antibody that is intended for laboratory use in the qualitative identification of CD10 protein by immunohistochemistry (IHC) in formalin-fixed paraffin-embedded (FFPE) human tissues. The clinical interpretation of any staining or its absence should be complemented by morphological studies using proper controls and should be evaluated within the context of the patient's clinical history and other diagnostic tests by a qualified pathologist.

## Summary and Explanation:

CD10, also known as common acute lymphoblastic leukemia (CALLA), has been shown to react with B and T lymphoblastic leukemia/lymphoma, follicular lymphoma, Burkitt's lymphoma, and diffuse large B-cell lymphoma (1-3). CD10 has also been a very important marker in a panel, including CD20, CD5, CD23, cyclin D1, SOX11, BCL6 among others, to differentiate between small lymphoid cell lymphomas such as mantle cell lymphoma, follicular lymphoma, marginal zone lymphoma and small lymphocytic lymphoma (1-3). Studies have also shown that CD10 marks normal early lymphoid progenitors, immature B-cells in bone marrow, and germinal center cells in normal tonsil. It is also expressed in some non-lymphoid tissues such as fibroblasts, breast myoepithelium, and brush border and distal tubules of the kidney (1-3). CD10 has been shown to be expressed in clear cell renal cell carcinomas and may be a useful marker pointing to a renal source of carcinomas (4).

## 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, a secondary antibody is added to bind to the primary antibody. An enzyme label is then added to bind to the secondary antibody; this detection of the bound antibody is evidenced by a colorimetric reaction.

**Source:** Mouse monoclonal

**Species Reactivity:** Human and mouse

**Clone:** UMAB236

**Isotype:** IgG1

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

**Epitope/Antigen:** Human recombinant protein of CD10

**Cellular Localization:** Cytoplasmic (kidney) and cell membrane (tonsil)

**Positive Tissue Control:** Normal kidney and tonsil

## 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.

## Protocol Recommendations:

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

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

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

## Protocol Recommendations Cont'd:

**Primary Antibody:** Incubate for 30 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:

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

## Performance Characteristics:

Sensitivity, specificity and cross-reactivity are summarized in Tables 1 and 2, respectively.

## Limitations:

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. The clinical interpretation of any positive or negative staining should be evaluated within the context of clinical presentation, morphology and other histopathological criteria by a qualified pathologist. The clinical interpretation of any positive or negative staining should be complemented by morphological studies using proper positive and negative internal and external controls as well as other diagnostic tests.

## Quality Control:

Refer to CLSI Quality Standards for Design and Implementation of Immunohistochemistry Assays; Approved Guideline-Second edition (I/LA28-A2) CLSI Wayne, PA USA ([www.clsi.org](http://www.clsi.org)). 2011

## 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) (5)
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 in contact with sensitive areas, wash with copious amounts of water. (6)
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.

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## Precautions Cont'd:

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

## 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.

## References:

1. Kurtin PJ, *et al.* Demonstration of distinct antigenic profiles of small B-cell lymphomas by paraffin section immunohistochemistry. *Am J Clin Pathol.* 1999;112:319-29.
2. de Leon ED, *et al.* Usefulness of an immunohistochemical panel in paraffin-embedded tissues for the differentiation of B-cell non-Hodgkin's lymphomas of small lymphocytes. *Mod Pathol.* 1998;11:1046-51.
3. de Boer CJ, *et al.* Bcl-1/cyclin D1 in malignant lymphoma. *Ann Oncol.* 1997;8 suppl 2:109-17.
4. Ortiz-Rey JA, *et al.* Expression of CD10 and renal cell carcinoma marker in clear cell renal cell carcinoma: analysis on tissue arrays. *Actas Urol Esp.* 2006 Mar;30(3):281-6.
5. 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."
6. 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.

**Table 1:** Sensitivity and specificity were determined by testing formalin-fixed, paraffin-embedded diseased tissues.

Tissue	Positive Cases	Total Cases
Bladder Cancer	7	11
Breast Cancer	0	4
Colon Cancer	1	3
Kidney Cancer	19	20
Liver Cancer	7	7
Lung Cancer	7	8
Ovarian Cancer	0	11
Prostate Cancer	11	12

**Table 2:** Tissue cross-reactivity was determined by testing formalin-fixed, paraffin-embedded normal tissues.

Tissue	Positive Cases	Total Cases
Cerebral Cortex	0	1
Pituitary	0	1
Thymus	1	1
Tonsil	1	1
Thyroid	0	1
Colon	0	1
Pancreas	0	1
Spleen	1	1
Cervix	0	1
Fallopian tube	0	1
Placenta	1	1
Kidney	1	1
Urethra	1	1
Prostate	0	1
Testis	0	1
Umbilical Cord	0	1
Skeletal Muscle	0	1
Lymph Node	1	1
Uterus	1	1
Lung	1	1
Liver	1	1