

Cytokeratin 14 (CK14)

Concentrated Monoclonal Antibody
902-185-101717

BIOCARE
M E D I C A L

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| Catalog Number: | ACR 185 B, C |
| Description: | 0.5, 1.0 ml, concentrated |
| Dilution: | 1:100 |
| Diluent: | Renaissance Background Reducing |

Intended Use:

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

Summary and Explanation:

Cytokeratin 14 (CK14) is a type I (acidic) human intermediate filament protein of 50 kDa, which usually pairs with CK5, a type II (basic) cytokeratin. In neoplastic cells, CK14 is a useful marker in identification of basal cell epithelium in prostate and myoepithelium in breast, and has also been shown to be a marker of squamous cell carcinoma in lung and in other histological types of various cancers (1-8). The CK14 monoclonal antibody is usually cocktailed with CK5 and may be used in a panel of CK5/CK14 + p63 + AMACR (P504S) or CK7/18 to assess neoplasia in prostate biopsies and breast cancers (7,9,10).

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

Clone: LL002

Isotype: IgG3

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

Epitope/Antigen: CK14

Cellular Localization: Cytoplasmic

Positive Tissue Control: Prostate

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 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.

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.

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

Precautions Cont'd:

1910.1200, OSHA Hazard communication and EC Directive 91/155/EC. Sodium azide (NaN₃) 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) (11)

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. (12)

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:

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- Thike AA, *et al.* Triple-negative breast cancer: clinicopathological characteristics and relationship with basal-like breast cancer. *Mod Pathol.* 2010 Jan;23(1):123-33.
- Laakso M, *et al.* Cytokeratin 5/14-positive breast cancer: true basal phenotype confined to BRCA1 tumors. *Mod Pathol.* 2005 Oct;18(10):1321-8.
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- Man YG, Zhao C, Chen X. A subset of prostate basal cells lacks the expression of corresponding phenotypic markers. *Pathol Res Pract.* 2006;202(9):651-62.
- Paner GP, Luthringer DJ, Amin MB. Best practice in diagnostic immunohistochemistry: prostate carcinoma and its mimics in needle core biopsies. *Arch Pathol Lab Med.* 2008 Sep;132(9):1388-96.
- Chu PG, Lyda MH, Weiss LM. Cytokeratin 14 expression in epithelial neoplasms: a survey of 435 cases with emphasis on its value in differentiating squamous cell carcinomas from other epithelial tumours. *Histopathology.* 2001 Jul;39(1):9-16.
- Hicks DG. Immunohistochemistry in the diagnostic evaluation of breast lesions. *Appl Immunohistochem Mol Morphol.* 2011 Dec;19(6):501-5.
- Tacha DE, *et al.* A Rapid Double Immunostaining Technique with a Single Combination of CK5, CK14, p63, CK7 and CK18 Distinguishes Between Hyperplasia of the Usual Type, Atypical Hyperplasia, Microinvasive and Basal Phenotype Breast Cancers. *Mod Pathol.* 2009 Jan;22(Supplement 1s):388A.
- 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."
- 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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