

# Cyclin D1

Concentrated and Prediluted Rabbit Monoclonal Antibody  
902-432-111317

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

<b>Catalog Number:</b>	<b>ACR 432 A, C</b>	<b>APR 432 AA</b>
<b>Description:</b>	0.1, 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:

This rabbit monoclonal antibody recognizes a protein of 36 kDa, identified as Cyclin D1 (also known as Bcl-1 or PRAD-1). Cyclin D1 is a regulatory subunit of certain protein kinases thought to advance the G1 phase of the cell cycle (5). Cyclin D1 used in tandem with CD5, CD10 and CD23 is the most reliable immunohistochemical marker for mantle cell lymphoma. Cyclin D1 is also expressed in invasive breast cancer (6). Due to the superior technology in the development of this antibody, its binding capacity is superior to mouse monoclonal antibodies and is virtually background free (1).

## 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. This detection of the bound antibody is evidenced by a colorimetric reaction.

**Source:** Rabbit monoclonal

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

**Clone:** EP12

**Isotype:** IgG

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

**Epitope/Antigen:** Cyclin D1

**Cellular Localization:** Nuclear

**Positive Tissue Control:** Mantle cell lymphoma and breast 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.

## Staining Protocol Recommendations:

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

**Pretreatment:** Perform heat retrieval using Biocare's Borg or Reveal Decloaker. Refer to the Borg or Reveal Decloaker product 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:** N/A

**Polymer:** Incubate for 30 minutes at RT with a secondary-conjugated 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 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) (9)

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. (10)

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. Pruneri G, *et al.* SP4, a novel anti-cyclin D1 rabbit monoclonal antibody, is a highly sensitive probe for identifying mantle cell lymphomas bearing the t(11;14)(q13;q32) translocation. *Appl Immunohistochem Mol Morphol.* 2005 Dec; 13(4):318-22.
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 Nov; 11(11):1046-51.
3. Samaha H, *et al.* Mantle cell lymphoma: a retrospective study of 121 cases. *Leukemia.* 1998 Aug; 12(8):1281-7.
4. Quintanilla-Martinez L, *et al.* Mantle cell lymphomas lack expression of p27Kip1, a cyclin-dependent kinase inhibitor. *Am J Pathol.* 1998 Jul; 153(1):175-82.
5. Nakamura S, Yatabe Y, Seto M. Cyclin D1 overexpression in malignant lymphomas. *Pathol Int.* 1997 Jul; 47(7):421-9.
6. van Diest PJ, *et al.* Cyclin D1 expression in invasive breast cancer. Correlations and prognostic value. *Am J Pathol.* 1997 Feb; 150(2):705-11.
7. de Boer CJ, *et al.* Cyclin D1 protein analysis in the diagnosis of mantle cell lymphoma. *Blood.* 1995 Oct 1; 86(7):2715-23.
8. Bartkova J, *et al.* Cell cycle-related variation and tissue-restricted expression of human cyclin D1 protein. *J Pathol.* 1994 Mar; 172(3):237-45.
9. 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."
10. 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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