

PCNA [PC10]

Concentrated and Prediluted Monoclonal Antibody
902-3255-112320

BIOCARE
M E D I C A L

Available Product Formats				
Format	Catalog Number	Description	Dilution	Diluent
Concentrate	ACR 3255 A, C	0.1, 1.0 mL	1:100	Da Vinci Green
Predilute	APR 3255 AA	6.0 mL	Ready-to-use	N/A
UltraLine – For BenchMark	AVR 3255 G	6.0 mL	Ready -to-use	N/A

Intended Use:

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

Summary and Explanation:

Proliferating cell nuclear antigen (PCNA) is necessary for DNA synthesis and is an accessory protein for DNA polymerase alpha, which is elevated during the G1/S phase of the cell cycle. PCNA forms a ring around a portion of DNA, serving to anchor the various DNA replication and repair proteins and to regulate proliferation throughout the cell cycle. In staining applications, the PCNA antibody exhibits nuclear staining (1,2). PCNA is overexpressed in many cancer types, and overexpression is correlated with cancer virulence with studies showing that PCNA is directly related to the degree of tumor differentiation, stage of cancer and the prognosis of cancer. PCNA-targeting peptides were shown to inhibit the growth or to induce apoptosis in neuroblastoma, prostate cancer, breast cancer, bladder cancer, and multiple myeloma (3,4).

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 one-, two- or three-step detection procedure can be employed. The one-step procedure will feature an enzyme-labeled polymer that binds to the primary antibody. A two-step procedure will feature a secondary antibody added to bind to the primary antibody. An enzyme-labeled polymer is then added to bind to the secondary antibody. The three-step detection procedure will feature a secondary antibody added to bind to the primary antibody followed by a linker antibody step for maximum binding. An enzyme-labeled polymer is then added to bind to the linker antibody. These detections of the bound antibodies are evidenced by a colorimetric reaction.

Source: Mouse monoclonal

Species Reactivity: Human; others not tested

Clone: PC10

Isotype: IgG2a/kappa

Protein Concentration: Call for lot specific Ig concentration.

Epitope/Antigen: PCNA

Cellular Localization: Nuclear

Positive Tissue Control: Breast cancer and 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. The product is stable to the expiration date printed on the label, when stored under these conditions. Do not use after expiration date. Diluted reagents should be used promptly; any remaining reagent should be stored at 2°C to 8°C.

Staining Protocol Recommendations (intelliPATH FLX® and manual use):

Peroxide Block: Block for 5 minutes with Peroxidized 1.

Pretreatment: Perform heat retrieval using Diva Decloaker. Refer to the Diva Decloaker product data sheet for specific instructions.

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

Primary Antibody: Incubate for 30 minutes at RT.

Staining Protocol Recommendations (intelliPATH FLX and manual use):

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 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, for intelliPATH FLX and manual use, has been standardized with MACH 4 detection system. Use TBS for washing steps.

Staining Protocol Recommendations (Ventana BenchMark ULTRA):

AVR3255 is intended for use with the BenchMark ULTRA. Refer to the User Manual for specific instructions for use. Recommended protocol parameters are as follows:

Template/Detection: OptiView DAB IHC

Pretreatment Protocol: CC1 32 minutes

Peroxidase: Pre Primary Peroxidase

Primary Antibody: 32 minutes, 36°C

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 (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) (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 into 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.

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.



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References:

1. Guo JL, *et al.* Evaluation of Clinical Significance of Endoglin Expression During Breast Cancer and Its Correlation with ER and PCNA. *Eur Rev Med Pharmacol Sci.* 2017 Dec; 21(23):5402-7.
2. Bologna-Molina R, *et al.* Comparison of the value of PCNA and Ki-67 as markers of cell proliferation in ameloblastic tumor. *Med Oral Patol Oral Cir Bucal.* 2013 Mar; 18(2):e174-9.
3. Shemesh A, *et al.* Nkp44-Derived Peptide Binds Proliferating Cell Nuclear Antigen and Mediates Tumor Cell Death. *Front Immunol.* 2018; 9:1114.
4. Zhao H, *et al.* Interaction of proliferation cell nuclear antigen (PCNA) with c-Abl in cell proliferation and response to DNA damages in breast cancer. *PLoS One.* 2012; 7(1):e29416.
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.

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