# VENTANA anti-p120 catenin (98) Mouse Monoclonal Primary Antibody

REF 790-4517

05867088001

IVD Σ 50

## INTENDED USE

VENTANA anti-p120 catenin (98) Mouse Monoclonal Primary Antibody is directed against human juxtamembrane protein p120 expressed as a part of the cell-cell adhesion complex in epithelial tissues. Cytoplasmic accumulation of p120 is associated with lobular breast carcinoma whereas ductal neoplasms retain membranous localization. This antibody is intended for qualitative staining in sections of formalin-fixed, paraffin-embedded tissue.

This product should be interpreted by a qualified pathologist in conjunction with histological examination, relevant clinical information, and proper controls.

This antibody is intended for *in vitro* diagnostic (IVD) use.

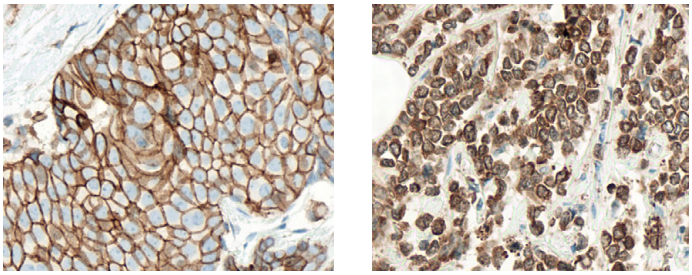

Figure 1. Ventana anti-p120 catenin (98) staining invasive ductal carcinoma (left) and invasive lobular carcinoma (right)

## SUMMARY AND EXPLANATION

VENTANA anti-p120 catenin (98) is a mouse monoclonal antibody, produced against the juxtamembrane protein, p120 catenin, which is a member of the catenin family of proteins involved with cadherin binding in epithelial cells .[1] This armadillo repeat protein binds at the juxtamembrane domain with α, β and γ catenin and E-cadherin to regulate cell-cell adhesion.[2] Expression in normal and neoplastic tissue is membranous, however, p120 catenin can be translocated to the cytoplasm with the loss of E-cadherin.[3] Breast carcinoma has been known to show both membranous and cytoplasmic staining in ductal carcinoma and lobular carcinoma respectively.[4] It has been shown that p120 catenin has decreased or altered expression in colon, bladder, stomach, prostrate, and lung carcinomas.[3]

## REAGENT PROVIDED

VENTANA anti-p120 catenin (98) contains sufficient reagent for 50 tests.

One 5 mL dispenser of VENTANA anti-p120 catenin (98) contains approximately 0.38 µg of a mouse monoclonal antibody.

The antibody is diluted in Tris-HCl Dilution Buffer with Brij-35, 1% carrier protein, and 0.1% ProClin 300, a preservative.

Total protein concentration of the reagent is approximately 10.0 mg/mL. Specific antibody concentration is approximately 0.076 µg/mL. There is no known non-specific antibody reactivity observed in this product.

VENTANA anti-p120 catenin (98) is a monoclonal antibody produced from supernatant material.

Refer to the appropriate Ventana detection kit package insert for detailed descriptions of: (1) Principles of the Procedure, (2) Materials and Reagents Needed but Not Provided, (3) Specimen Collection and Preparation for Analysis, (4) Quality Control Procedures, (5) Troubleshooting, (6) Interpretation of Results, and (7) General Limitations.

## MATERIALS REQUIRED BUT NOT PROVIDED

Staining reagents, such as Ventana detection kits (*ultra*View Universal DAB Detection Kit), and ancillary components, including negative and positive tissue control slides, are not provided.

## STORAGE

Store at 2-8°C. Do not freeze.

To ensure proper reagent delivery and the stability of the antibody, replace the dispenser cap after every use and immediately place the dispenser in the refrigerator in an upright position.

Every antibody dispenser is expiration dated. When properly stored, the reagent is stable to the date indicated on the label. Do not use reagent beyond the expiration date.

## SPECIMEN PREPARATION

Routinely processed, formalin-fixed, paraffin-embedded tissues are suitable for use with this primary antibody when used with Ventana detection kits and a Ventana BenchMark Series automated slide stainer. The recommended tissue fixative is 10% neutral buffered formalin.[5] Slides should be stained immediately, as antigenicity of cut tissue sections may diminish over time.

It is recommended that positive and negative controls be run simultaneously with unknown specimens.

## WARNINGS AND PRECAUTIONS

1. For *in vitro* diagnostic (IVD) use.
2. ProClin 300 is used as a preservative in this solution. It is classified as an irritant and may cause sensitization through skin contact. Take reasonable precautions when handling. Avoid contact of reagents with eyes, skin, and mucous membranes. Use protective clothing and gloves.
3. Materials of human or animal origin should be handled as biohazardous materials and disposed of with proper precautions.
4. Avoid contact of reagents with eyes and mucous membranes. If reagents come in contact with sensitive areas, wash with copious amounts of water.
5. Avoid microbial contamination of reagents as it may cause incorrect results.
6. Consult local and/or state authorities with regard to recommended method of disposal.

## STAINING PROCEDURE

Ventana primary antibodies have been developed for use on a Ventana BenchMark Series automated slide stainer in combination with Ventana detection kits and accessories. A recommended staining protocol for the BenchMark ULTRA and BenchMark XT instruments with *ultra*View Universal DAB Detection Kit is listed in Table 1.

The parameters for the automated procedures can be displayed, printed and edited according to the procedure in the instrument's Operator's Manual. Refer to the appropriate Ventana detection kit package insert for more details regarding immunohistochemistry staining procedures.

Table 1. Recommended Staining Protocol for VENTANA anti-p120 catenin (98) with *ultra*View Universal DAB Detection Kit on BenchMark ULTRA and BenchMark XT instruments.

| Procedure Type | Method |
|---|---|
| Deparaffinization | Selected |
| Cell Conditioning (Antigen Unmasking) | Standard Cell Conditioning 1 |
| Enzyme (Protease) | None required |
| Antibody (Primary) | BenchMark XT instrument Approximately 16 Minutes, 37°C<br>BenchMark ULTRA Instrument Approximately 20 minutes, 36°C |
| Optional procedure (ex. Wash, Amplification, etc.) | None |
| Counterstain | Hematoxylin II, 4 Minutes |

| | |
|---|---|
| Post Counterstain | Bluing, 4 Minutes |

Table 2. Recommended Staining Protocol for VENTANA anti-p120 catenin (98) with *i*VIEW DAB Detection Kit on BenchMark XT instrument

| Procedure Type | Method |
|---|---|
| Deparaffinization | Selected |
| Cell Conditioning (Antigen Unmasking) | Standard Cell Conditioning 1 |
| Enzyme (Protease) | None required |
| Antibody (Primary) | BenchMark XT instrument Approximately 16 Minutes, 37°C |
| Optional procedure (ex. Wash, Amplification, etc.) | None |
| Counterstain | Hematoxylin II, 4 Minutes |
| Post Counterstain | Bluing, 4 Minutes |

Due to variation in tissue fixation and processing, as well as general lab instrument and environmental conditions, it may be necessary to increase or decrease the primary antibody incubation, cell conditioning or protease pretreatment based on individual specimens, detection used, and reader preference. For further information on fixation variables, refer to "Immunohistochemistry Principles and Advances".[6]

## POSITIVE TISSUE CONTROL

Examples of positive control tissues for this antibody are normal ducts of the breast.

## STAINING INTERPRETATION

The cellular staining pattern for VENTANA anti-p120 catenin (98) is membranous in normal and neoplastic tissue but cytoplasmic in some tumors (i.e. invasive lobular carcinoma of the breast).

## SPECIFIC LIMITATIONS

This antibody has been optimized for a 16 minute incubation time on a BenchMark XT instrument and a 20 minute incubation time on a BenchMark ULTRA instrument in combination with *ultra*View Universal DAB Detection Kit but the user must validate results obtained with this reagent.

## PERFORMANCE CHARACTERISTICS

Staining tests for specificity, sensitivity, and reproducibility were conducted using VENTANA anti-p120 catenin (98) with *ultra*View Universal DAB Detection Kit on BenchMark XT and BenchMark ULTRA instruments.

### Specificity

Table 2. Specificity of VENTANA anti-p120 catenin (98) was determined by testing formalin-fixed, paraffin-embedded normal tissues.

| Tissue | # positive / total cases | Tissue | # positive / total cases |
|---|---|---|---|
| Cerebrum | 0/3 | Thymus | 2/3 |
| Cerebellum | 0/3 | Myeloid (bone marrow) | 0/3 |
| Adrenal gland | 2/3 | Lung | 0/3 |
| Ovary | 0/3 | Heart | 0/3 |
| Pancreas | 2/3 | Esophagus | 1/3 |
| Parathyroid gland | 2/3 | Stomach | 3/3 |
| Hypophysis | 2/3 | Small intestine | 2/3 |
| Testis | 5/5 | Colon | 3/3 |
| Thyroid | 3/3 | Liver | 0/3 |
| Breast | 3/3 | Salivary gland | 2/3 |
| Spleen | 3/3 | Kidney | 3/3 |
| Tonsil | 2/3 | Prostate | 3/3 |
| Endometrium | 3/3 | Cervix | 2/2 |
| Skeletal muscle | 0/3 | Skin | 3/3 |
| Nerve (sparse) | 0/3 | Mesothelium and lung | 0/3 |

### Sensitivity

Table 3. Sensitivity of VENTANA anti-p120 catenin (98) was determined by testing a variety of formalin-fixed, paraffin-embedded neoplastic tissues.

| Pathology | # positive / total cases |
|---|---|
| Glioblastoma | 0/1 |
| Atypical meningioma | 0/1 |
| Malignant ependymoma | 0/1 |
| Malignant oligodendroglioma | 0/1 |
| Serous papillary adenocarcinoma | 1/1 |
| Mucinous papillary adenocarcinoma | 1/1 |
| Islet cell carcinoma | 0/1 |
| Pancreatic adenocarcinoma | 0/1 |
| Seminoma | 1/1 |
| Embryonal carcinoma | 1/1 |
| Medullary carcinoma | 1/1 |
| Papillary carcinoma | 1/1 |
| Breast Intraductal carcinoma | 1/1 |
| Breast lobular carcinoma in situ | 35/39 |
| Breast invasive ductal carcinoma | 69/82 |
| Diffuse B-cell lymphoma | 0/1 |
| Lung small cell undifferentiated carcinoma | 0/1 |
| Lung squamous cell carcinoma | 1/1 |
| Lung adenocarcinoma | 0/1 |
| Esophageal squamous cell carcinoma | 1/1 |
| Esophageal adenocarcinoma | 1/1 |
| Gastric mucinous adenocarcinomas | 1/1 |
| Gastrointestinal adenocarcinoma | 1/1 |
| GIST | 0/1 |
| Hepatocellular carcinoma | 1/1 |
| Hepatoblastoma | 0/1 |
| Renal clear cell carcinoma | 1/1 |
| Prostatic adenocarcinoma | 1/1 |

| Pathology | # positive / total cases |
|---|---|
| Prostatic transitional cell carcinoma | 0/1 |
| Leiomyoma | 0/1 |
| Endometrial adenocarcinoma | 0/0 |
| Endometrial clear cell carcinoma | 1/1 |
| Uterine squamous cell carcinoma | 1/1 |
| Embryonal rhabdomyosarcoma | 0/1 |
| Anal malignant melanoma | 1/1 |
| Basal cell carcinoma | 0/1 |
| Squamous cell carcinoma | 1/1 |
| Neurofibroma | 1/1 |
| RetroperItoneal neuroblastoma | 0/1 |
| Epithelial malignant mesothelioma | 1/1 |
| Diffuse malignant lymphoma | 1/1 |
| Hodgkin's lymphoma | 0/1 |
| Diffuse malignant lymphoma | 0/1 |
| Bladder transitional cell carcinoma | 0/1 |
| Low grade leiomyosarcoma | 0/1 |
| Osteosarcoma | 1/1 |
| Spindle cell rhabdomyosarcoma | 0/1 |
| Intermediate grade leiomyosarcoma | 0/1 |
| Malignant melanoma | 0/1 |

### Repeatability

Repeatability studies for VENTANA anti-p120 catenin (98) were completed to demonstrate:

- Inter-lot reproducibility of the antibody.
- Intra-run and Inter-run reproducibility on a BenchMark XT instrument.
- Intra-platform reproducibility on the BenchMark XT instrument and the BenchMark ULTRA instrument.
- Inter-platform reproducibility between the BenchMark XT and BenchMark ULTRA instruments.

### Compatibility Results

VENTANA anti-p120 catenin (98) demonstrated compatibility with BenchMark XT, and BenchMark ULTRA instruments and *ultra*View Universal DAB Detection Kit .

## REFERENCES


1. Anastasiadis PZ. p120-ctn: A nexus for contextual signaling via Rho GTPases. Biochimica et Biophysica Acta 2007, 1773:34-46.
2. Thoreson MA, Anastasiadis PZ, Daniel JM, Ireton RC et al. Selective Uncoupling of p120 ctn from E-cadherin Disrupts Strong Adhesion 2000. J of Cell Bio 148(1):189-201.
3. Thoreson MA, Reynolds AB. Altered expression of the catenin p120 in human cancer: implication for tumor progression. Differentiation 2002;70:583-589.
4. Mastracci TL, Tjan S, Bane AL, O'Malley FP et al. E-cadherin alterations in atypical lobular hyperplasia and lobular carcinoma in situ of the breast. Modern Pathology 2005,18:741-751.
5. Sheehan DC, Hrapchak BB. Theory and Practice of Histotechnology, 2nd edition. St. Louis, MO: The C.V. Mosby Company; 1980.
6. Roche PC, Hsi ED. Immunohistochemistry-Principles and Advances. Manual of Clinical Laboratory Immunology, 6th edition. In: NR Rose, ed. ASM Press; 2002.


## INTELLECTUAL PROPERTY



## CONTACT INFORMATION


Ventana Medical Systems, Inc.
1910 E. Innovation Park Drive
Tucson, Arizona 85755
USA
+1 520 887 2155
+1 800 227 2155 (USA)
www.ventanamed.com

EC REP

Roche Diagnostics GmbH
Sandhofer Strasse 116
D-68305 Mannheim
Germany


CE