Intended Use:
For In Vitro Diagnostic Use
PMS2 [A16-4] is a mouse monoclonal antibody that is intended for laboratory use in the qualitative identification of PMS2 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:
The PMS2 post meiotic segregation increased 2 gene is located on chromosome number 7. The gene product of PMS2 forms a heterodimer with MLH1 that interacts with MSH2 bound to mismatched bases in DNA. MSH2 is a protein of 934 aa (100 kDa) localized to the cell nucleus. MSH2 functions as one of the four major DNA mismatch repair genes along with PMS2, MLH1 and PMS1. Mutations in these genes are associated with hereditary nonpolyposis colon cancer (HNPCC), one of the most common hereditary diseases in man. Immunohistochemistry studies have further determined that the microsatellite instability phenotype in endometrial carcinoma is linked to defects in the MLH1/PMS2 gene. Patients with colorectal cancer that is mismatch-repair-deficient and confirmed with immunohistochemistry (IHC) (MSH2/MSH6 negative or MLH1/PMS2 deleted) have shown objective response to PD-1 antibody, pembrolizumab (6). PD-L1 IHC test has been demonstrated to be a useful predictive marker for anti-PD-1 immunotherapy in colorectal carcinoma (7).

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. A secondary antibody may be applied to bind the primary antibody, followed by an enzyme labeled polymer; or an enzyme labeled polymer may be applied directly to bind the primary antibody. The detection of the bound primary antibody is evidenced by an enzyme-mediated colorimetric reaction.

Source: Mouse monoclonal
Species Reactivity: Human; others not tested
Clone: A16-4
Isotype: IgG1/kappa
Total Protein Concentration: ~10 mg/ml. Call for lot specific Ig concentration.
Epitope/Antigen: PMS2
Cellular Localization: Nuclear

Positive Tissue Control: Placenta, colon cancer

Known Applications:
Immunohistochemistry (formalin-fixed paraffin-embedded tissues)

Supplied As: Buffer with protein carrier and preservative
Renoir Red Diluent (PD904)

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.

Protocol Recommendations
Protocol Recommendations (intelliPATH and manual use):
Peroxide Block: Block for 5 minutes with Biocare’s Peroxidase 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.

Primary Antibody: Incubate for 5-10 minutes at RT with Biocare’s Background Punisher.

Primary Antibody: Incubate for 30-60 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.

intelliPATH™ Automated Slide Stainer:
IPI344 is intended for use on the intelliPATH™ Automated Slide Stainer. Refer to the User Manual for specific instructions for use. When using the intelliPATH, peroxide block with intelliPATH Peroxidase Blocking Reagent (IPBS005) may be performed following heat retrieval.

Protocol Recommendations (ONCORE Automated Slide Staining System):
OAI344 is intended for use with the ONCORE Automated Slide Staining System. Refer to the User Manual for specific instructions for use. Protocol parameters in the ONCORE Automated Slide Stainer Protocol Editor should be programmed as follows:

Protocol Name: PMS2

Protocol Template (Description): IHC Extras Template

Dewaxing (DS Option): DS2

Antigen Retrieval (AR Option): AR1, high pH; 103°C

Reagent Name, Time, Temp.: PMS2, 30 min., 25°C

Probe: Pre Primary Peroxidase Inhibitor

Option (V-Blocker BR14001): Incubate for 4 minutes (with appropriate Option # registered by user) V-Blocker is recommended to be applied prior to any primary antibody.

Primary Antibody: 36 minutes, No Heat

Amplification Kit: Incubate 4 minutes with Amplification HQ Linker and 4 minutes with Amplification Multimer.

Technical Note:
This antibody, for intelliPATH and manual use, has been standardized with Biocare’s MACH 4 detection system. Use TBS for washing steps.
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:

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) (8)
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. (9)
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.
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:

References Cont’d:

VP Echelon Series antibodies are developed solely by Biocare Medical LLC and do not imply approval or endorsement of Biocare’s antibodies by Ventana Medical Systems, Inc. Biocare and Ventana are not affiliated, associated or related in any way. Ventana®, BenchMark®, ultraView and OptiView are trademarks of Roche.