MCM2 + TOP2A

Prediluted Antibody Cocktail
902-3181-112923

BIOCARE MEDICAL

Available Product Formats				
Format	Catalog Number	Description	Dilution	Diluent
UltraLine	AVR 3181 G	6.0 mL	Ready-to-use	N/A
Q Series	ALR 3181 G7	7.0 mL	Ready-to-use	N/A

Intended Use:
For Research Use Only. Not for use in diagnostic procedures.
This mouse monoclonal antibody is intended to detect MCM2 + TOP2A proteins.

Background Information:
Reactive and regenerative squamous epithelium can show a spectrum of histologic alterations that mimic dysplastic and pre-neoplastic cytological and architectural changes. A monoclonal antibody cocktail targeted against mini-chromosome maintenance protein 2 (MCM2) and DNA topoisomerase IIA (TOP2A), when up regulated, serves as a marker of aberrant S-phase induction in proliferating cells[5]. MCM2 functions during DNA replication by loading the pre-replication complex onto DNA and unwinding the DNA through helicase activity to permit DNA synthesis. MCM2 is essential for eukaryotic DNA replication and drives the formation of pre-replicative complexes, which is the key first step during G1 phase[6]. Therefore, altered MCM2 expression may be a hallmark of cell-cycle deregulationTOP2A is a nucleic enzyme that affects the topological structure of DNA by interacting with the double-helix DNA, thus playing an important role in DNA replication, transcription, recombination, condensation, and segregation[7,8].

Known Applications:
Immunohistochemistry (Formalin-fixed paraffin-embedded tissues). Other applications have not been tested.

Supplied As: Buffered saline solution, pH 7.2-7.4, containing a protein carrier and less than 0.1% sodium azide preservative. See Safety Data Sheet for additional details.

Materials and Methods:

Reagents Provided:
MCM2 + TOP2A (AVR/ALR 3181) is provided as follows:

Antibody	anti-MCM2	anti-TOP2A
Clone	OT18A11	UMAB146
Source	Mouse Monoclonal	Mouse Monoclonal
Isotype	IgG2b	IgG1
Epitope/ Antigen	MCM2 (full-length)	TOP2A (aa 1100-1531)
Cellular Localization	Nuclear	Nuclear
Staining	Brown (DAB)	Brown (DAB)

Reconstitution, Mixing, Dilution and Titration:
Prediluted antibody reagent is optimally diluted for use with above listed staining systems. Further dilution may result in loss of antigen staining. The user must validate any such change. Differences in tissue processing and technical procedures in the user's laboratory may produce significant variability in results necessitating regular performance of in-house controls. Concentrated reagent requires dilution as indicated in table above.

Storage and Stability:
Store at 2ºC to 8ºC. The product is stable to the expiration date printed on the vial label when stored under these conditions. Do not use after expiration date. Storage under any condition other than those specified must be verified. Diluted reagents should be used promptly; store any remaining reagent at 2ºC to 8ºC. The stability of user diluted reagent has not been established by Biocare.

Staining Protocol Recommendations (UltraLine):
AVR3181 is compatible with the Ventana Benchmark IHC staining platforms for research applications. Refer to the User Manual for specific instructions for use in optimizing protocols.

Staining Protocol Recommendations (Q Series):
ALR3181 is compatible with the Leica IHC staining platforms for research applications. Refer to the User Manual for specific instructions for use in optimizing protocols.

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_3) 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)[1]
2. Handle materials of human or animal origin as potentially biohazardous and dispose of such materials with proper precautions. In the event of exposure, follow the health directives of the responsible authorities where used.[2,3]
3. 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.[4]
4. Microbial contamination of reagents may result in an increase in nonspecific staining.
5. Incubation times or temperatures other than those specified may give erroneous results. The user must validate any such change.
6. Do not use reagent after the expiration date printed on the vial.
7. Follow local and/or state authority requirements for method of disposal.
8. 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. 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."
2. Occupational Safety and Health Standards: Occupational exposure to hazardous chemicals in laboratories. (29 CFR Part 1910.1450). Fed. Register.
3. Directive 2000/54/EC of the European Parliament and Council of 18 September 2000 on the protection of workers from risks related to exposure to biological agents at work.
4. 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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5. Walts AE, Bose S. p16, Ki-67, and BD ProEx™C immunostaining: a practical approach for diagnosis of cervical intraepithelial neoplasia. Hum Pathol. 2009;40:957.
6. Shi J, et al. Evaluation of p16INK4a, minichromosome maintenance protein 2, DNA topoisomerase IIA, ProEX C, and p16INK4a/ProEX C in cervical squamous intraepithelial lesions. Hum Pathol. 2007;38:1335.
7. Wang JC. Cellular roles of DNA topoisomerases: a molecular perspective. Nat Rev Mol Cell Biol. 2002;3:430.
8. Gibbons D, et al. Comparison of topoisomerase II alpha and MIB-1 expression in uterine cervical squamous lesions. Mod Pathol. 1997;10:409.

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