GENE BIO SOLUTION

MCM2 + TOP2A

Format	Catalog no. -	Pack size	Dilution
Concentrated	GB3181AA,H	-	-
Prediluted		6.0, 25 mL	Ready to use

PRODUCT DESCRIPTION -

When a monoclonal antibody cocktail against mini-chromosome maintenance protein 2 (MCM2) and DNA topoisomerase IIA (TOP2A) is up-regulated, it indicates that proliferating cells are undergoing abnormal S-phase induction. DNA replication is an essential first step in the G1 phase, and MCM2 is a key component of the hexameric pre-replication complex that drives the development of these complexes. The initiation and advancement of human malignancies could be triggered by cell-cycle dysregulation, which would be shown by aberrant MCM2 expression. Results from immunohistochemistry have demonstrated that MCM2 overexpression is a hallmark of cervical high grade dysplasia. The DNA topological structure is influenced by TOP2A, a nucleic enzyme, throughout the processes of DNA replication, transcription, recombination, condensation, and segregation.

INTENDED USE -

For In Vitro Diagnostic Applications MCM2 + TOP2A is a combination of mouse monoclonal antibodies designed for professional laboratory application following the initial tumor diagnosis via conventional histopathology utilizing non-immunologic histochemical stains, for the qualitative detection of MCM2 and TOP2A proteins through immunohistochemistry (IHC) in formalin-fixed paraffin-embedded (FFPE) human tissues. The clinical interpretation of any staining or its absence must be supplemented by morphological studies utilizing appropriate controls and assessed in conjunction with the patient's clinical history and other diagnostic tests by a qualified pathologist to assist in making further clinical determinations.

SUMMARY AND EXPLANATION -

A monoclonal antibody cocktail directed against mini-chromosome maintenance protein 2 (MCM2) and DNA topoisomerase IIA (TOP2A), when upregulated, functions as a marker for abnormal S-phase induction in proliferating cells.Fifteen MCM2, as a component of a hexameric pre-replication complex, facilitates the assembly of pre-replicative complexes during DNA replication, an essential preliminary phase in G1. Altered MCM2 expression would signify cell-cycle dysregulation, facilitating the onset and advancement of malignant malignancies.The

over-expression of MCM2 in cervical high-grade dysplasia can be identified using immunohistochemistry. TOP2A is a nucleic enzyme that influences the topological configuration of DNA during replication, transcription, recombination, condensation, and segregation.

PRINCIPLE OF PROCEDURE -

The antibody product serves as the primary antibody for immunohistochemistry testing of formalin-fixed, paraffin-embedded tissue slices. Immunohistochemical (IHC) staining techniques facilitate the visualization of antigens through the sequential application of a specific primary antibody to the antigen, followed by a secondary antibody to the primary antibody (optional linking antibody/probe), an enzyme complex, and a chromogenic substrate, interspersed with washing steps. The enzymatic activation of the chromogen produces a visible reaction product at the antigen location. The specimen may thereafter be counterstained and covered with a slip. Results are analyzed with a light microscope and assist in the differential diagnosis of pathophysiological processes, which may or may not correlate with a specific antigen.

ANTIBODY CLONE	anti-MCM2	anti-TOP2A
SOURCE ISOTYPE	OT18A11	UMAB146
SPECIES REACTIVITY	MouseMonoclonal IgG1	Human, Other species
CELLULAR LOCALIZATION	IgG2b	
STAINING	Tested	
SPECIFICITY	Nuclear	Nuclear
	Brown(DAB)	Brown(DAB)
	MCM2(full-length)	TOP2A(aa1100-1531)

KNOWN APPLICATIONS -Immunohistochemistry
30-40 min. At RT. Staining of formalin-fixed tissues requires heating tissue sections in between pH 7.4 - 9.0 for 45 min at 95°C followed by cooling at room temperature for 20 minutes.

SUPPLIED AS - Buffered saline solution, pH 7.2 – 7.4, containing a protein carrier and less than 0.1% sodium azide preservative.

STORAGE AND STABILITY -

Store at 2ºC to 8ºC. 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 2ºC to 8ºC.

Materials required but not provided -

1) Positivetissuecontrol-Anytissuewithinflammatoryprocess,suchascolon cancer or tonsil
2) Negativecontroltissue(internalorexternal)
3) Microscopeslidesandcoverslips
4) Stainingjarsorbaths
5) Timer
6) Xyleneorxylenesubstitute
7) Ethanolorreagentalcohol
8) Deionizedordistilledwater
9) Heatingequipmentorenzymefortissuepretreatmentstep
10) Detection system
11) Chromogen
12) Wash buffer
13) Hematoxylin
14) Antibody diluents
15) Peroxide block
16) Light microscope
17) Mounting medium

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 Genebio products. Ultimately, it is the responsibility of the investigator to determine optimal conditions.