

Localization – Nuclear
Host Species – Mouse
Ig Class – IgG1 / Kappa

Intended Use

This antibody is designed for the specific localization of MLH1 in formalin-fixed, paraffin-embedded (FFPE) tissue sections.

Storage & Handling

Store RTU Vial at 2-8°C. Fresh dilutions for concentrated antibodies, if required, should be prepared prior to use and are stable for up to one day at room temperature (20-26°C).

Working Principle

IHC is a two-step process wherein the primary antibody binds to the antigen of interest and that binding is detected by a chromogen. The primary antibody may be used in IHC using manual techniques or any Automated Staining System. Positive and negative controls should always be run simultaneously with all patient specimens.

Product Description

This monoclonal antibody (MAb) recognizes an 83kDa protein identified as MLH1. Mutations in MLH1 cause hereditary non-polyposis colorectal cancer type 2 (HNPCC2). MLH1 forms a heterodimer with PMS2 to create MutL alpha, a key component of the post-replicative DNA mismatch repair system (MMR). DNA repair begins with MutS alpha (MSH2-MSH6) or MutS beta (MSH2-MSH3) binding to a DNA mismatch, followed by the recruitment of MutL alpha to the heteroduplex. The assembly of the MutL-MutS-heteroduplex complex, in the presence of RFC and PCNA, activates PMS2's endonuclease activity. This activity introduces single-strand breaks near the mismatch, creating entry points for the exonuclease EXO1 to degrade the mismatched strand. DNA methylation prevents cleavage, ensuring only the newly synthesized strand is corrected. MutL alpha (MLH1-PMS2) also interacts with DNA polymerase III's clamp loader subunits, potentially recruiting the polymerase to the MMR site. Additionally, MLH1 is involved in DNA damage signaling, which can induce cell cycle arrest and apoptosis in response to significant DNA damage. MLH1 also forms a heterodimer with MLH3 to create MutL gamma, which plays a role in meiosis.

Material Supplied

MLH1 antibody is affinity purified and diluted in PBS, pH 7.4, containing 1% BSA and 0.09% sodium azide.

Material required But Not Supplied

- Xylene
- DI Water
- Control Tissues
- Isopropyl alcohol
- Antigen retrieval buffers
- Hematoxylin
- Positive charged slides
- Blocking Reagents
- Mounting media
- Wash Buffer
- Detection System
- Cover glass

Working Reagent Procedure

- Ready-to-Use antibodies have been optimized for use with the recommended protocols and should not require further dilution.
- Concentrated antibodies must be diluted in accordance with the recommended protocol.

Recommended Protocol

Refer the following table for the details on specific recommended protocol for this antibody.

Control Tissue	Human tonsil or colon carcinoma	Antibody Incubation Time	30-60 Minutes at RT
Dilution factor	1:20-50 (Antibody Diluent: DH144)	Retrieval Pre-treatment	Tris-EDTA based HIER (AR9 Buffer: DH020)

Precautions

This product should be used by qualified and trained professional users only.

Avoid microbial contamination of reagents to minimize non-specific staining. Never pipette reagents by mouth. Avoid contact of reagents and specimens with skin. If reagents or specimens come into contact with sensitive area, wash with sufficient amounts of water. Dispose of the unused reagents. This kit contains sodium azide at concentrations of less than 0.1%. Sodium azide is not classified as a hazardous chemical at these concentrations, but proper handling protocols should be observed. For more information on product hazards, precautions and waste disposal, *Material Safety Data Sheets* are available upon request.







Limitations

Improper tissue handling and processing prior to immunostaining can lead to inconsistent results. Variations in embedding and fixation or the nature of the tissue may lead to variations in results. Endogenous peroxidase activity or pseudo peroxidase activity in erythrocytes and tissue biotin may result in non-specific staining based on the detection system employed. Tissues containing Hepatitis B Surface Antigen (HBsAg) may give false positive with horseradish peroxidase systems. Improper counterstaining and mounting may compromise the interpretation of results. Interpretation of the staining result is solely the responsibility of the user. Experimental results should be confirmed by a medically-established diagnostic product or procedure. Evaluation must be performed by a qualified pathologist.

Troubleshooting

For Technical Support contact us at +91 - 7506501122 or info@dygnova.com or your local distributor to report unusual staining.

Doc No: DH/DS/MLH184Rev.00

	Manufacturer Details		Use by Date	LOT	Lot/Batch Number
	Manufacturing Date		Consult Instructions for Use	REF	Catalogue Number
	Temperature Limits		Sufficient for 'n' assays / tests	IVD	In-vitro Diagnostic Medical Device