Human MSH6 Antibody

Monoclonal Mouse IgG_{2A} Clone # 1128063

Catalog Number: MAB11832

DESCRIPTION

Species Reactivity	Human
Specificity	Detects a synthetic peptide specific for human MSH6 around amino acid 390.
Source	Monoclonal Mouse IgG_{2A} Clone # 1128063
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Synthetic Peptide Accession # P52701
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose.

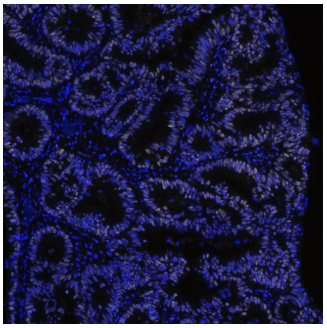
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	1 µg/mL	HCT-116 human colorectal carcinoma cell line
Immunohistochemistry	0.25-25 µg/mL	Immersion fixed paraffin-embedded sections of normal colon, colon tumor, and tonsil
Simple Western	10-50 µg/mL	HCT-116 human colorectal carcinoma cell line
COMET	25 µg/mL	Immersion fixed paraffin-embedded sections of human colon tumor

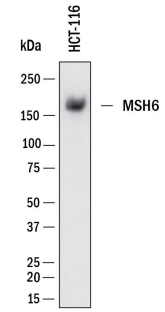
DATA

Multiplex Immunofluorescence



MSH6 in Human Colon Tumor via seqIF™ staining on COMET™ MSH6 was detected in immersion fixed paraffin-embedded sections of human colon tumor using Mouse Anti-Human MSH6, Monoclonal Antibody (Catalog # MAB11832) at 25ug/mL at 37 ° Celsius for 4 minutes. Before incubation with the primary antibody, tissue underwent an all-in-one dewaxing and antigen retrieval preprocessing using PreTreatment Module (PT Module) and Dewax and HIER Buffer H (pH 9; Epredia Catalog # TA-999-DHBH). Tissue was stained using the Alexa Fluor™ 647 Goat anti-Mouse IgG Secondary Antibody at 1:200 at 37 ° Celsius for 2 minutes. (Yellow; Lunaphore Catalog # DR647MS) and counterstained with DAPI (blue; Lunaphore Catalog # DR100). Specific staining was localized to the nucleus. Protocol available in COMET™ Panel Builder.

Western Blot



Detection of Human MSH6 by Western Blot. Western Blot shows lysates of HCT-116 human colorectal carcinoma cell line. PVDF membrane was probed with 1 µg/ml of Mouse Anti-Human MSH6 Monoclonal Antibody (Catalog # MAB11832) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). A specific band was detected for MSH6 at approximately 160 kDa (as indicated). This experiment was conducted under reducing conditions and using Western Blot Buffer Group 1.

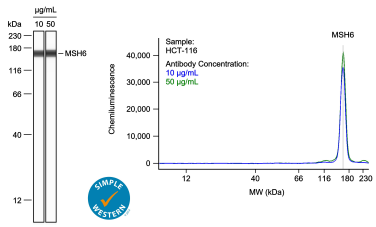
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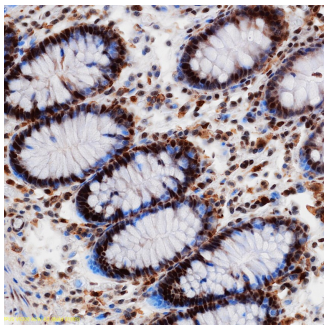
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Simple Western



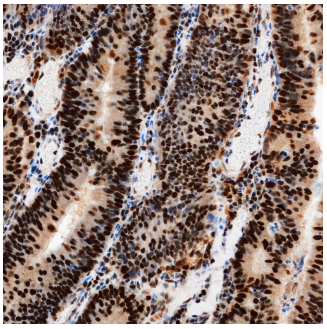
Detection of Human MSH6 by Simple Western™. Left: Simple Western lane view shows lysates of HCT-116 human colorectal carcinoma cell line, loaded at 0.1 mg/ml. A specific band was detected for MSH6 at approximately 165 kDa (as indicated) using both 10 µg/ml and 50 µg/ml of Mouse Anti-Human MSH6 Monoclonal Antibody (Catalog # MAB11832) followed by HRP-conjugated Goat Anti-Mouse Secondary Antibody (Catalog # 042-205). This experiment was conducted under reducing conditions and using the 12-230kDa separation system. **Right:** Simple Western electropherogram showing the same Mouse Anti-Human MSH6 Monoclonal Antibody (Catalog # MAB11832) tested at 10 µg/ml (blue line) and 50 µg/ml (green line) in the HCT-116 human colorectal carcinoma cell line.

None



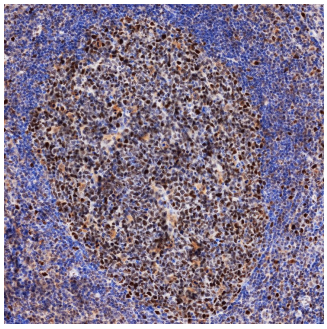
Immersion fixed paraffin-embedded sections of colon MSH6 was detected in immersion fixed paraffin-embedded sections of colon using Mouse Anti-Human MSH6 Monoclonal Antibody (Catalog # MAB11832) at 5 µg/ml overnight at 4 °C. Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using VisUCyte Antigen Retrieval Reagent-Basic (Catalog # VCTS021). Tissue was stained using the HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007) and counterstained with hematoxylin (blue). Specific staining was localized to the nucleus. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

Immunohistochemistry



Immersion fixed paraffin-embedded sections of colon tumor MSH6 was detected in immersion fixed paraffin-embedded sections of colon tumor using Mouse Anti-Human MSH6 Monoclonal Antibody (Catalog # MAB11832) at 5 µg/ml overnight at 4 °C. Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using VisUCyte Antigen Retrieval Reagent-Basic (Catalog # VCTS021). Tissue was stained using the HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007) and counterstained with hematoxylin (blue). Specific staining was localized to the nucleus. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

Immunohistochemistry



Immersion fixed paraffin-embedded sections of tonsil MSH6 was detected in immersion fixed paraffin-embedded sections of tonsil using Mouse Anti-Human MSH6 Monoclonal Antibody (Catalog # MAB11832) at 5 µg/ml overnight at 4 °C. Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using VisUCyte Antigen Retrieval Reagent-Basic (Catalog # VCTS021). Tissue was stained using the HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007) and counterstained with hematoxylin (blue). Specific staining was localized to the nucleus. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

PREPARATION AND STORAGE

Reconstitution	Reconstitute lyophilized material at 0.2 mg/ml in sterile PBS. For liquid material, refer to CoA for concentration.
Shipping	Lyophilized product is shipped at ambient temperature. Liquid small pack size (-SP) is shipped with polar packs. Upon receipt, store immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

MSH6 (MutS Homolog 6) is a critical DNA mismatch repair (MMR) protein with a molecular weight of approximately 160 kDa. Belonging to the MutS family, MSH6 functions as a heterodimer with MSH2 to form the MutSα complex, which is essential for recognizing and repairing single-base mismatches and small insertion-deletion loops during DNA replication. The MSH6 protein is widely expressed across various tissues and plays a pivotal role in maintaining genome stability by preventing the accumulation of replication errors, which could otherwise lead to mutagenesis. Dysregulation or mutations in the MSH6 gene have been implicated in numerous pathological conditions, including colorectal cancer and other Lynch syndrome-associated cancers. Germline variants of MSH6 significantly increase the risk of hereditary nonpolyposis colorectal cancer (HNPCC), while somatic mutations are frequently observed in microsatellite instability-high (MSI-high) tumors. In addition to its canonical role in DNA repair, MSH6 has also been linked to cellular processes such as apoptotic signaling and response to DNA damage, underscoring its relevance as both a diagnostic biomarker and a potential therapeutic target in oncology.

References:

1. Modrich P, Lahue R. Mismatch repair in replication fidelity, genetic recombination, and cancer biology. Annu Rev Biochem. 1996;65:101-33. doi: 10.1146/annurev.bi.65.070196.000533. PMID: 8811176.
2. Bonadona V, Bonaïti B, Olschwang S, Grandjouan S, Huiart L, Longy M, Guimbaud R, Buecher B, Bignon YJ, Caron O, Colas C, Noguès C, Lejeune-Dumoulin S, Olivier-Faivre L, Polycarpe-Osaer F, Nguyen TD, Desseigne F, Saurin JC, Berthet P, Leroux D, Duffour J, Manouvrier S, Frébourg T, Sobol H, Lasset C, Bonaïti-Pellié C; French Cancer Genetics Network. Cancer risks associated with germline mutations in MLH1, MSH2, and MSH6 genes in Lynch syndrome. JAMA. 2011 Jun 8;305(22):2304-10. doi: 10.1001/jama.2011.743. PMID: 21642682.
3. Jiricny J. The multifaceted mismatch-repair system. Nat Rev Mol Cell Biol. 2006 May;7(5):335-46. doi: 10.1038/nrm1907. PMID: 16612326.

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