

# MLH1 Recombinant Antibody [PSH20-67] - Rabbit IgG (Chimeric)

## HA724342



|                            |                                                   |
|----------------------------|---------------------------------------------------|
| <b>Product Type:</b>       | Recombinant Chimeric Antibody, primary antibodies |
| <b>Species reactivity:</b> | Human                                             |
| <b>Applications:</b>       | IHC-P, IF-Cell, WB                                |
| <b>Molecular Wt:</b>       | Predicted band size: 85 kDa                       |
| <b>Clone number:</b>       | PSH20-67                                          |

**Description:** Heterodimerizes with PMS2 to form MutL alpha, a component of the post-replicative DNA mismatch repair system (MMR). DNA repair is initiated by MutS alpha (MSH2-MSH6) or MutS beta (MSH2-MSH3) binding to a dsDNA mismatch, then MutL alpha is recruited to the heteroduplex. Assembly of the MutL-MutS-heteroduplex ternary complex in presence of RFC and PCNA is sufficient to activate endonuclease activity of PMS2. It introduces single-strand breaks near the mismatch and thus generates new entry points for the exonuclease EXO1 to degrade the strand containing the mismatch. DNA methylation would prevent cleavage and therefore assure that only the newly mutated DNA strand is going to be corrected. MutL alpha (MLH1-PMS2) interacts physically with the clamp loader subunits of DNA polymerase III, suggesting that it may play a role to recruit the DNA polymerase III to the site of the MMR. Also implicated in DNA damage signaling, a process which induces cell cycle arrest and can lead to apoptosis in case of major DNA damages. Heterodimerizes with MLH3 to form MutL gamma which plays a role in meiosis.

**Positive control:** HeLa (Human cervical adenocarcinoma cells) cell lysate, SW480 (Human colorectal adenocarcinoma cells) cell lysate.

**Subcellular location:** Nucleus, Chromosome.

**Database links:** SwissProt: P40692 Human

**Recommended Dilutions:**

|         |         |
|---------|---------|
| IHC-P   | 1:2,000 |
| IF-Cell | 1:3,000 |
| WB      | 1:2,000 |

**Storage Buffer:** 1\*PBS (pH7.4), 0.1% BSA, 40% Glycerol, 0.2% Proclean 950.

**Storage Instruction:** Shipped at 4℃. Store at +4℃ short term (1-2 weeks). Store at -20℃ long term.

**Purity:** Protein A affinity purified.

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Orders:0086-571-88062880

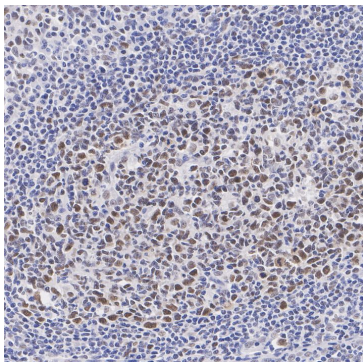
Technical:0086-571-89986345

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Applications:WB=Western blot IHC-P=Immunohistochemistry (paraffin) IF-Cell=Immunofluorescence (Cell) IF-Tissue=Immunofluorescence (Tissue) FC=Flow cytometry IP=Immunoprecipitation

## Images

**Fig1:** Application: Immunohistochemistry (IHC-P)

Species: Human

Tissue: Tonsil

Sample: Paraffin-embedded section

Antigen retrieval: Heat-mediated, Tris-EDTA buffer (pH 9.0) (high pressure), 2 minutes.

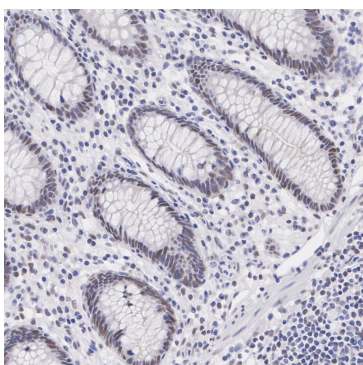
Wash buffer: 1× TBST

Endogenous peroxidase blocking: 3% H<sub>2</sub>O<sub>2</sub>, 10 minutes at room temperature.

Blocking: 1% BSA + 10% normal goat serum, 10 minutes at room temperature.

Primary antibody: HA724342, 1/2,000, 1 hour at room temperature.

Secondary antibody: HA1119, 20 minutes at room temperature.

**Fig2:** Application: Immunohistochemistry (IHC-P)

Species: Human

Tissue: Appendix

Sample: Paraffin-embedded section

Antigen retrieval: Heat-mediated, Tris-EDTA buffer (pH 9.0) (high pressure), 2 minutes.

Wash buffer: 1× TBST

Endogenous peroxidase blocking: 3% H<sub>2</sub>O<sub>2</sub>, 10 minutes at room temperature.

Blocking: 1% BSA + 10% normal goat serum, 10 minutes at room temperature.

Primary antibody: HA724342, 1/2,000, 1 hour at room temperature.

Secondary antibody: HA1119, 20 minutes at room temperature.

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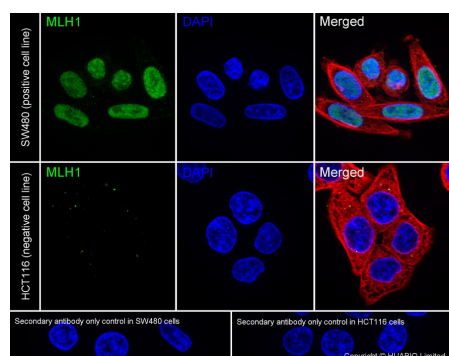

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**Fig3:** Application: Immunocytochemistry (IF-cell)

Species: Human

Sample: SW480 (Human colorectal adenocarcinoma cells)/HCT 116 (Human colon cancer cells)



Fixation: 4% Paraformaldehyde, 15 minutes at room temperature.

Permeabilization: 0.1% Triton X-100, 15 minutes at room temperature.

Blocking: 1% BSA + 10% normal goat serum, 1 hour at room temperature.

Antibody dilution buffer: 1% BSA in PBST.

Primary antibody: HA724342, 1/3,000, overnight at 4 °C.

Secondary antibody: Goat Anti-Rabbit IgG (iFluor™ 488, HA1121), 45 minutes at room temperature.

Counterstain: Beta tubulin (HA601187, red), 1/100, overnight at 4 °C. The Nuclear counterstain was DAPI (Blue).

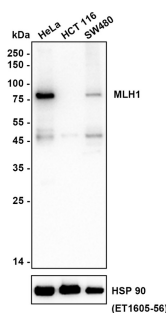
Negative control: HCT 116 (PMID: 27618981).

**Fig4:** Western blot analysis of MLH1 on different lysates with Rabbit anti-MLH1 antibody (HA724342) at 1/2,000 dilution.

Lane 1: HeLa (Human cervical adenocarcinoma cells) cell lysate

Lane 2: HCT 116 (Human colon cancer cells) cell lysate (negative)

Lane 3: SW480 (Human colorectal adenocarcinoma cells) cell lysate



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Lysates/proteins at 10 µg/Lane.

Exposure time: 12 seconds; ECL: K1801

HCT 116 is a negative control (PMID: 34787019).

Blocking: 5% NFDM/TBST, 1 hour at room temperature

Primary antibody: HA724342, 1/2,000 in primary antibody dilution buffer (K1803), overnight at 4 °C

Secondary antibody: Goat anti-Rabbit IgG-HRP (HA1001), 1/50,000 in 5% NFDM/TBST, 1 hour at room temperature

Predicted band size: 85 kDa

Observed band size: 85 kDa

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**Note:** All products are "FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE".

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### Background References

1. Yue Q et al. Histone H3K9 Lactylation Confers Temozolomide Resistance in Glioblastoma via LUC7L2-Mediated MLH1 Intron Retention. Adv Sci (Weinh). 2024 May
2. Guan J et al. MLH1 Deficiency-Triggered DNA Hyperexcision by Exonuclease 1 Activates the cGAS-STING Pathway. Cancer Cell. 2021 Jan

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