10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

MSH6 Antibody
Purified Mouse Monoclonal Antibody
Catalog # AO1649a

Specification

MSH6 Antibody - Product Information

Application	**E, WB, IHC, IF, FC**
Primary Accession	P52701
Reactivity	**Human**
Host	**Mouse**
Clonality	**Monoclonal**
Isotype	**IgG2a**
Calculated MW	**160kDa KDa**

Description
This gene encodes a protein similar to the MutS protein. In E. coli, the MutS protein helps in the recognition of mismatched nucleotides, prior to their repair. A highly conserved region of approximately 150 aa, called the Walker-A adenine nucleotide binding motif, exists in MutS homologs. The encoded protein of this gene combines with MSH2 to form a mismatch recognition complex that functions as a bidirectional molecular switch that exchanges ADP and ATP as DNA mismatches are bound and dissociated. Mutations in this gene have been identified in individuals with hereditary nonpolyposis colon cancer (HNPCC) and endometrial cancer.

Immunogen
Purified recombinant fragment of human MSH6 expressed in E. Coli.

Formulation
Ascitic fluid containing 0.03% sodium azide.

MSH6 Antibody - Additional Information

Gene ID 2956

Other Names
DNA mismatch repair protein Msh6, hMSH6, G/T mismatch-binding protein, GTBP, GTMBP, MutS-alpha 160 kDa subunit, p160, MSH6, GTBP

Dilution
E~~1/10000
WB~~1/500 - 1/2000
IHC~~1/200 - 1/1000
IF~~1/200 - 1/1000
FC~~1/200 - 1/400

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
MSH6 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

MSH6 Antibody - Protein Information

Name MSH6 (HGNC:7329)

Synonyms GTBP

Function
Component of the post-replicative DNA mismatch repair system (MMR). Heterodimerizes with MSH2 to form MutS alpha, which binds to DNA mismatches thereby initiating DNA repair. When bound, MutS alpha bends the DNA helix and shields approximately 20 base pairs, and recognizes single base mismatches and dinucleotide insertion-deletion loops (IDL) in the DNA. After mismatch binding, forms a ternary complex with the MutL alpha heterodimer, which is thought to be responsible for directing the downstream MMR events, including strand discrimination, excision, and resynthesis. ATP binding and hydrolysis play a pivotal role in mismatch repair functions. The ATPase activity associated with MutS alpha regulates binding similar to a molecular switch: mismatched DNA provokes ADP-->ATP exchange, resulting in a discernible conformational transition that converts MutS alpha into a sliding clamp capable of hydrolysis-independent diffusion along the DNA backbone. This transition is crucial for mismatch repair. MutS alpha may also play a role in DNA homologous recombination repair. Recruited on chromatin in G1 and early S phase via its PWWP domain that specifically binds trimethylated 'Lys-36' of histone H3 (H3K36me3): early recruitment to chromatin to be replicated allowing a quick identification of mismatch repair to initiate the DNA mismatch repair reaction.

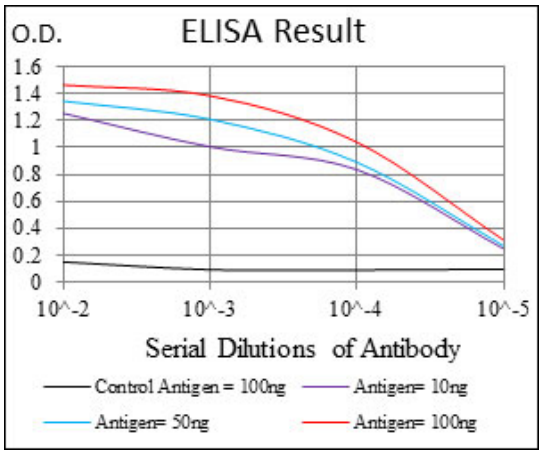
Cellular Location
Nucleus. Chromosome. Note=Associates with H3K36me3 via its PWWP domain

MSH6 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999



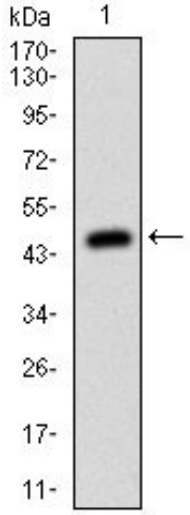


Figure 1: Western blot analysis using MSH6 mAb against human MSH6 (AA: 217-395) recombinant protein. (Expected MW is 45.5 kDa)

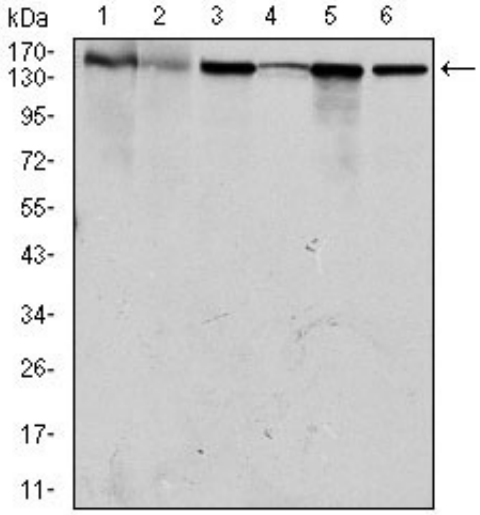


Figure 2: Western blot analysis using MSH6 mouse mAb against HEK293 (1), HCT116 (2), A549 (3), A431 (4), MCF-7 (5) and HepG2 (6) cell lysate.

10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

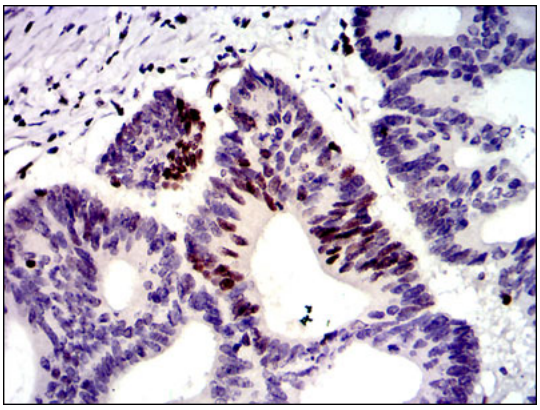


Figure 3: Immunohistochemical analysis of paraffin-embedded colon cancer tissues using MSH6 mouse mAb with DAB staining.

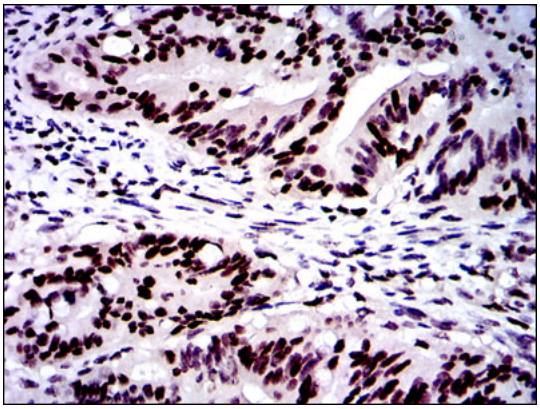


Figure 4: Immunohistochemical analysis of paraffin-embedded rectum cancer tissues using MSH6 mouse mAb with DAB staining.

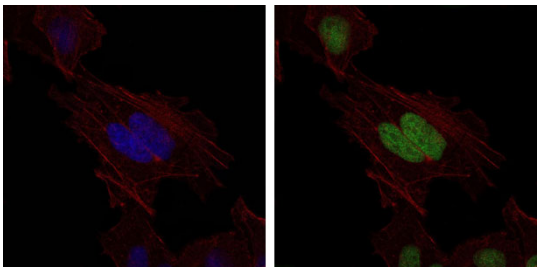


Figure 5: Immunofluorescence analysis of Hela cells using MSH6 mouse mAb (green). Blue: DRAQ5 fluorescent DNA dye. Red: Actin filaments have been labeled with Alexa Fluor-555 phalloidin.

10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

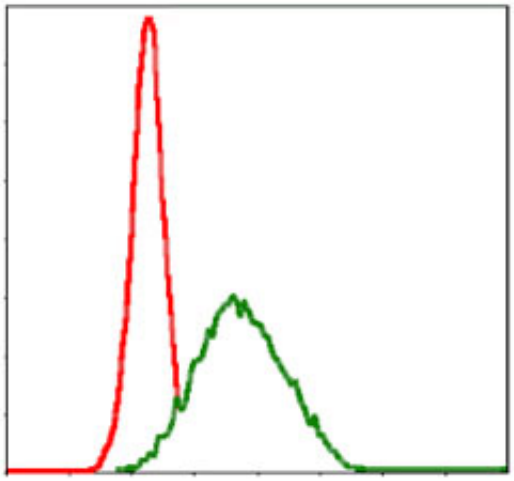


Figure 6: Flow cytometric analysis of MCF-7 cells using MSH6 mouse mAb (green) and negative control (red).

MSH6 Antibody - References

1. Hered Cancer Clin Pract. 2009 Dec 23;7(1):17. 2. Cancer Epidemiol Biomarkers Prev. 2009 Sep;18(9):2460-7.