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Anti-MSH6 Antibody

Catalog # AP51369

Product Information

Application	WB, IHC, IF/IC
Primary Accession	P52701
Reactivity	Human, Mouse, Rat, Mk
Host	Rabbit
Clonality	Polyclonal
Calculated MW	152786

Additional Information

Gene ID	2956
Other Names	GTBP; DNA mismatch repair protein Msh6; hMSH6; G/T mismatch-binding protein; GTBP; GTMBP; MutS-alpha 160 kDa subunit; p160
Target/Specificity	KLH-conjugated synthetic peptide encompassing a sequence within the center region of human MSH6. The exact sequence is proprietary.
Dilution	WB~~WB (1/500 - 1/1000) IHC~~1:100~500 IF/IC~~N/A
Format	Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.01% sodium azide.
Storage	Store at -20 °C.Stable for 12 months from date of receipt

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

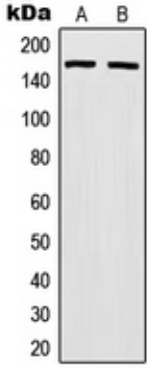
backbone. This transition is crucial for mismatch repair. MutS alpha may also play a role in DNA homologous recombination repair. Recruited on chromatin in G1 and early S phase via its PWWP domain that specifically binds trimethylated 'Lys-36' of histone H3 (H3K36me3): early recruitment to chromatin 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

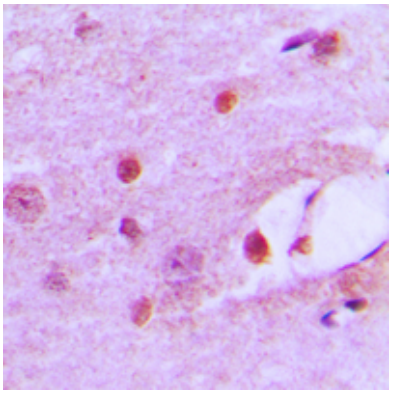
References

Acharya S.,et al.Proc. Natl. Acad. Sci. U.S.A. 93:13629-13634(1996).
Shiwaku H.O.,et al.DNA Res. 4:359-362(1997).
Palombo F.,et al.Science 268:1912-1914(1995).
Nicolaides N.C.,et al.Genomics 31:395-397(1996).
Drummond J.T.,et al.Science 268:1909-1912(1995).

Images

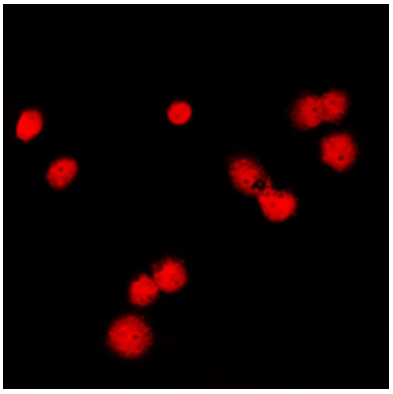


Western blot analysis of MSH6 expression in HeLa (A), HCT116 (B) whole cell lysates. (Predicted band size: 119; 120; 137; 152 kD; Observed band size: 150 kD)



Immunohistochemical analysis of MSH6 staining in human brain formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The section was then incubated with the antibody at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

Immunofluorescent analysis of MSH6 staining in HeLa cells. Formalin-fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 5-10 minutes and blocked with 3% BSA-PBS for 30 minutes at room temperature. Cells were probed with the primary antibody in 3% BSA-PBS and incubated overnight at 4 °C in a humidified chamber. Cells were washed with PBST and incubated with a DyLight 594-conjugated secondary antibody (red) in PBS at room temperature in the dark.



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