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MSH2 Antibody (Center)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP11570c

Product Information

Application	IF, FC, WB, E
Primary Accession	P43246
Other Accession	NP_000242.1
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	104743
Antigen Region	637-665

Additional Information

Gene ID	4436
Other Names	DNA mismatch repair protein Msh2, hMSH2, MutS protein homolog 2, MSH2
Target/Specificity	This MSH2 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 637-665 amino acids from the Central region of human MSH2.
Dilution	IF~~1:10~50 FC~~1:10~50 WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	MSH2 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	MSH2
Function	Component of the post-replicative DNA mismatch repair system (MMR). Forms two different heterodimers: MutS alpha (MSH2-MSH6 heterodimer) and MutS beta (MSH2-MSH3 heterodimer) which binds to DNA mismatches thereby initiating DNA repair. When bound, heterodimers bend the DNA helix

and shields approximately 20 base pairs. MutS alpha recognizes single base mismatches and dinucleotide insertion-deletion loops (IDL) in the DNA. MutS beta recognizes larger insertion-deletion loops up to 13 nucleotides long. After mismatch binding, MutS alpha or beta 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. Recruits DNA helicase MCM9 to chromatin which unwinds the mismatch containing DNA strand (PubMed:26300262). 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. In melanocytes may modulate both UV-B-induced cell cycle regulation and apoptosis.

Cellular Location Nucleus. Chromosome

Tissue Location Ubiquitously expressed.

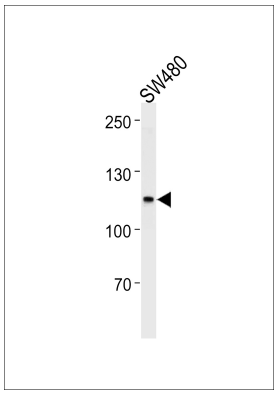
Background

MSH2 was identified as a locus frequently mutated in hereditary nonpolyposis colon cancer (HNPCC). When cloned, it was discovered to be a human homolog of the E. coli mismatch repair gene mutS, consistent with the characteristic alterations in microsatellite sequences (RER+ phenotype) found in HNPCC. [provided by RefSeq].

References

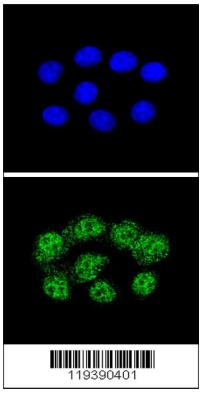
Kim, M., et al. Cancer Sci. 101(11):2436-2442(2010)
Mangoni, M., et al. Int. J. Radiat. Oncol. Biol. Phys. (2010) In press :
Srivastava, K., et al. Cancer 116(13):3160-3169(2010)
van der Post, R.S., et al. J. Med. Genet. 47(7):464-470(2010)
Langner, E., et al. J. Genet. 89(1):101-104(2010)

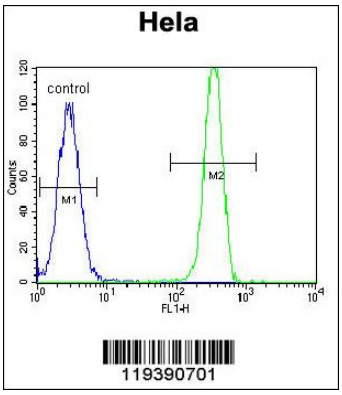
Images



MSH2 Antibody (Center) (Cat. #AP11570c) western blot analysis in SW480,U251 cell line lysates (35ug/lane).This demonstrates the MSH2 antibody detected the MSH2 protein (arrow).

Confocal immunofluorescent analysis of MSH2 Antibody (Center)(Cat. #AP11570c) with Hela cell followed by Alexa Fluor® 488-conjugated goat anti-rabbit lgG (green). DAPI was used to stain the cell nuclear (blue).





MSH2 Antibody (Center) (Cat. #AP11570c) flow cytometric analysis of Hela cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.