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ProductInformation

Anti-MSH6 (N-terminal)
produced in rabbit, IgG fraction of antiserum

Catalog Number **M2445**

Product Description

Anti-MSH6 (N-terminal) is developed in rabbit using as immunogen a synthetic peptide corresponding to amino acids 2-18 of human MSH6, conjugated to KLH via a C-terminal added cysteine residue. The immunizing peptide is conserved in mouse and rat. Whole antiserum is fractionated and then further purified by ion-exchange chromatography to provide the IgG fraction of antiserum that is essentially free of other rabbit serum proteins.

Anti-MSH6 (N-terminal) specifically recognizes human MSH6. Applications include immunoblotting (160 kDa), immunoprecipitation, and immunofluorescence. Staining of the MSH6 band in immunoblotting is specifically inhibited by the immunizing peptide.

The integrity of genetic information depends on the fidelity of DNA replication and on the efficiency of several different DNA repair processes. Mismatches introduced into DNA during replication are addressed by the post-replicative mismatch repair system (MMR). This pathway is responsible for correcting base substitution insertion-deletion mismatches (IDLs) generated during DNA replication in organisms ranging from bacteria to mammals.[1, 2] The elevated rates of spontaneous mutations are a hallmark of defects in genes associated with post-replicative mismatch repair and led to their original designation as mutator *(mut)* genes in bacteria.[2] Eukaryotic MMR has features in common with *E. coli* MMR, but the proteins involved in the repair pathway can differ depending on the nature of the mismatch and the substrate for excision. MSH2, MSH3, and MSH6 are human homologs of *E. coli* MutS, while MLH1, PMS1, and PMS2 are homologs of *E.coli* MutL. The MSH2-MSH6 complex recognizes single-base mispairs and insertion/deletion loops. Binding of this complex induces conformational changes in the DNA that lead to the binding of an MLH-PMS1 complex and excision repair.[1, 3-4] MSH6 (also known as GTBP) was isolated from HeLa cells by virtue of its ability to restore mismatch repair to nuclear extracts of MSH2-deficient colorectal tumor cell lines.[4] MSH6, as all homologs of the MutS proteins, contains a highly conserved region of ~150 amino acids that has an ATPase activity that is critical in mismatch repair.[3, 5] MSH6, as well as MSH2 and MLH1 were identified as part of the BRCA1-associated genome surveillance complex, which also includes ATM, BLM, NBS1, and other DNA-repair checkpoint proteins, suggesting that the complex may serve as a sensor of abnormal DNA structures and/or regulator of the post-replication repair process.[6] Germline mutations in MSH6 rarely appear in some cases of hereditary nonpolyposis colon cancer.[6, 7] Germline MSH6 mutations, which are rare in HNPCC, have been reported in several families with members affected with endometrial carcinoma.[8, 9]

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in “frost-free” freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working dilution of 1:2,000-1:4,000 is recommended using HEK 293-T cell lysates.

Immunoprecipitation: 5-10 µL of the antibody immunoprecipitates MSH6 from HEK 293-T cell lysates.

Immunofluorescence: a working dilution of 1:100-1:200 is recommended using paraformaldehyde-fixed HEK 293-T cells.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

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