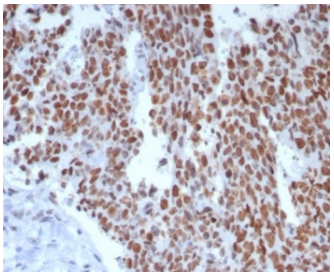
MSH6 Antibody Recombinant Mouse MAb rMSH6/8181 [clone rMSH6/8181] (V4886)

Catalog No.	Formulation	Size
V4886-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V4886-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V4886SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Recombinant | MOUSE MONOCLONAL

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Recombinant Mouse Monoclonal
Isotype	Mouse IgG1, kappa
Clone Name	rMSH6/8181
Purity	Protein A/G affinity
UniProt	P52701
Localization	Nucleus
Applications	Immunohistochemistry (FFPE) : 1-2ug/ml for 30 min at RT
Limitations	This MSH6 antibody is available for research use only.



Immunohistochemistry analysis of MSH6 antibody in human small intestine tissue. MSH6 Antibody Recombinant Mouse MAb rMSH6/8181 was used for immunohistochemistry on FFPE human small intestine tissue. Strong HRP-DAB brown nuclear staining is observed in epithelial cells lining the intestinal glands and crypt regions, consistent with the nuclear localization of MutS homolog 6 (MSH6), a DNA mismatch repair protein involved in recognition of replication errors during DNA synthesis. The staining highlights proliferative epithelial cell populations within the mucosal compartment, while surrounding stromal and connective tissue elements show minimal signal. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 9 10mM Tris with 1mM EDTA for 20 min followed by cooling prior to immunostaining.

Description

MutS homolog 6 (MSH6), encoded by the MSH6 gene, is a nuclear DNA mismatch repair protein that plays a central role in preserving genomic stability during DNA replication. MSH6 Antibody Recombinant Mouse MAb rMSH6/8181 recognizes this essential DNA repair factor, which is widely referred to in the literature as MutS homolog 6, GTBP, or G/T mismatch-binding protein. MSH6 functions as a key component of the MutSalpha complex formed through heterodimerization with MutS homolog 2 (MSH2). This complex detects base-base mismatches and small insertion-deletion loops that arise during DNA replication, initiating the DNA mismatch repair pathway that corrects replication errors and protects the genome from accumulating mutations.

Within the mismatch repair system, MSH6 is responsible for recognizing abnormal DNA base pairing and binding to mismatched nucleotide structures. Once a mismatch is detected, the MutSalpha complex recruits downstream repair factors including MLH1 and PMS2, which coordinate excision of the incorrect DNA strand and synthesis of a corrected sequence. This repair process is essential for maintaining replication fidelity and preventing mutational accumulation during cell division. Because MSH6 participates directly in mismatch recognition, it serves as one of the earliest sensors of replication errors in the mismatch repair pathway.

The MSH6 gene is located on chromosome 2p16 and encodes a member of the MutS family of DNA repair proteins. The protein localizes predominantly within the nucleus where DNA replication and repair processes occur. Detection of MSH6 expression in tissue-based studies typically reveals strong nuclear staining in proliferating epithelial cells and lymphoid populations that undergo active DNA replication. Nuclear localization reflects the functional role of MSH6 in recognizing mismatched nucleotides and initiating repair of replication-associated DNA damage.

Defects in mismatch repair genes can lead to genomic instability and increased susceptibility to tumor development. Alterations in MSH6 are associated with mismatch repair deficiency and microsatellite instability, molecular features frequently investigated in colorectal carcinoma, endometrial carcinoma, and other malignancies. Mutations in the MSH6 gene are also linked to hereditary cancer syndromes including Lynch syndrome. Because of these associations, MSH6 protein expression is widely studied in research examining DNA repair mechanisms, genomic instability, and tumor biology.

Several established synonyms are used for this DNA repair protein, including MutS homolog 6, GTBP, and G/T mismatch-binding protein. These alternate names reflect the protein's ability to recognize G/T mismatches generated during DNA replication. A recombinant mouse monoclonal antibody such as clone rMSH6/8181 enables sensitive detection of nuclear MSH6 expression in research applications investigating DNA mismatch repair pathways and genomic stability.

Application Notes

Optimal dilution of the MSH6 antibody recombinant mouse mAb rMSH6/8181 should be determined by the researcher.

Immunogen

A recombinant fragment of human MSH6 protein (within amino acids 300-600) was used as the immunogen for the recombinant MSH6 antibody.

Storage

Aliquot the MSH6 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.