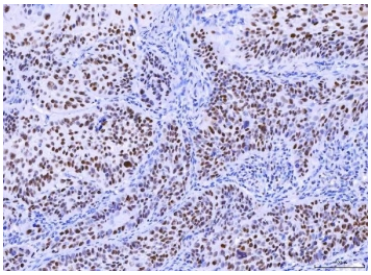
MSH2 Antibody Mouse Monoclonal 6B4F7 / MutS homolog 2 Antibody [clone 6B4F7] (RQ7009)

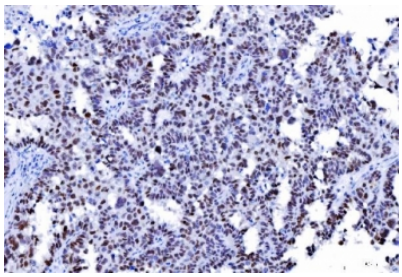
Catalog No.	Formulation	Size
RQ7009	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

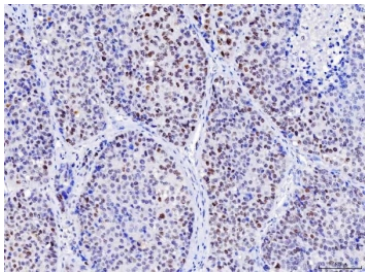
Availability	1-3 business days
Species Reactivity	Human
Format	Antigen affinity purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG2b
Clone Name	6B4F7
Purity	Antigen affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	P43246
Localization	Nuclear
Applications	Western blot: 0.5-1 ug/ml Immunohistochemistry (FFPE): 2-5ug/ml Immunofluorescence: 5ug/ml
Limitations	This MSH2 antibody is available for research use only.



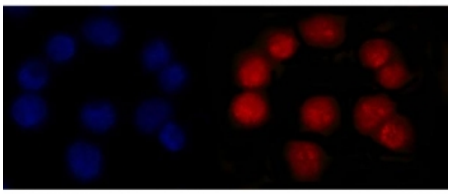
MSH2 Antibody Mouse Monoclonal 6B4F7. Immunohistochemistry of FFPE human laryngeal squamous cell carcinoma tissue demonstrates strong nuclear staining in tumor epithelial cells, consistent with the nuclear localization of MutS homolog 2 (MSH2), a key DNA mismatch repair protein. Brown chromogenic signal highlights MSH2-positive nuclei across the carcinoma cell population, while surrounding stromal cells show weaker or variable staining. Heat-induced epitope retrieval was performed by boiling tissue sections in pH8 EDTA buffer for 20 minutes followed by cooling prior to antibody incubation.



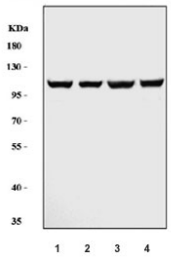
IHC staining of FFPE human serous adenocarcinoma of the ovary tissue with MSH2 antibody. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



IHC staining of FFPE human liver cancer tissue with MSH2 antibody. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



MSH2 Antibody Mouse Monoclonal 6B4F7. Immunofluorescence analysis of FFPE human Caco-2 cells shows strong nuclear staining corresponding to MutS homolog 2 (MSH2) protein localization. Red fluorescent signal highlights MSH2-positive nuclei throughout the cell population, while DAPI counterstain (blue) marks total nuclear DNA for reference. The staining pattern demonstrates clear nuclear accumulation consistent with the role of MSH2 as a DNA mismatch repair protein functioning within the nucleus. Heat-induced epitope retrieval was performed by steaming sections in pH6 citrate buffer for 20 minutes prior to antibody incubation.



Western blot testing of human 1) HeLa, 2) MCF7, 3) A459 and 4) COLO-320 cell lysate with MSH2 antibody. Expected molecular weight ~105 kDa.

Description

MutS homolog 2 (MSH2) is a nuclear DNA mismatch repair protein encoded by the MSH2 gene and is a key component of the cellular system responsible for maintaining genomic integrity. MSH2 Antibody Mouse Monoclonal 6B4F7 recognizes MutS homolog 2 / MSH2 and enables detection of this essential DNA repair protein in studies investigating genomic stability, DNA replication fidelity, and tumor biology. MSH2 plays a central role in the mismatch repair pathway by forming heterodimeric complexes with MSH6 or MSH3, allowing recognition of base-base mismatches and insertion-deletion loops generated during DNA replication.

MSH2 antibody, also referred to as MutS homolog 2 antibody or hMSH2 antibody in the literature, detects a nuclear protein that participates directly in mismatch repair complexes responsible for correcting replication errors. Within the nucleus, MSH2 acts as a mismatch recognition factor that initiates repair processes by recruiting additional proteins required for excision and resynthesis of damaged DNA strands. Because this repair pathway protects cells from accumulating mutations, MSH2 expression is widely studied in research examining DNA repair mechanisms and genome maintenance.

Loss or reduction of MSH2 expression can impair mismatch repair activity and lead to microsatellite instability, a molecular phenotype associated with several human cancers. Defects in MSH2 are strongly linked to hereditary cancer

syndromes such as Lynch syndrome, and alterations in this protein have also been observed in certain sporadic tumors. As a result, analysis of MSH2 protein expression is frequently used in studies investigating mismatch repair deficiency, genomic instability, and tumor development.

MSH2 Antibody Mouse Monoclonal 6B4F7 enables analysis of MSH2 expression and localization in biological samples where DNA mismatch repair activity is being examined. Detection of MutS homolog 2 can provide insight into the integrity of mismatch repair pathways and the cellular mechanisms that safeguard genomic stability. This mouse monoclonal antibody provides a useful reagent for research investigating DNA repair proteins, genome maintenance processes, and tumor-associated alterations in mismatch repair pathways.

Application Notes

Optimal dilution of the MSH2 Antibody Mouse Monoclonal 6B4F7 should be determined by the researcher.

Immunogen

Recombinant human MSH2 protein (amino acids Q337-N583) was used as the immunogen for the MSH2 antibody.

Storage

After reconstitution, the MSH2 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

MutS homolog 2 antibody, DNA mismatch repair protein MSH2 antibody, hMSH2 antibody, MSH2 mismatch repair antibody

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