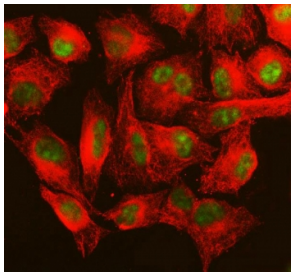
MSH6 Antibody Rabbit Polyclonal for IF / MutS homolog 6 immunofluorescence antibody (RQ5743)

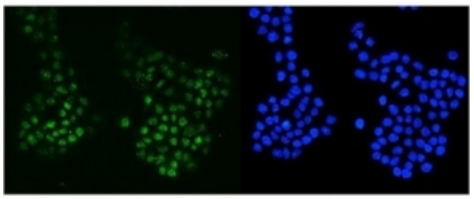
Catalog No.	Formulation	Size
RQ5743	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

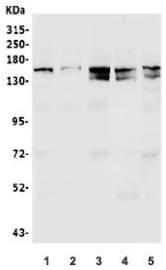
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	P52701
Localization	Nuclear
Applications	Western Blot : 0.5-1ug/ml Immunofluorescence : 5ug/ml Flow Cytometry : 1-3ug/million cells Immunohistochemistry (FFPE) : 2-5ug/ml
Limitations	This MSH6 antibody is available for research use only.



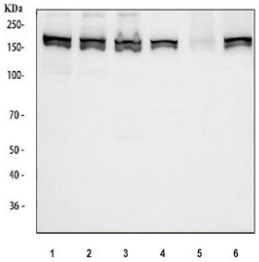
MSH6 Antibody Rabbit Polyclonal for IF staining of FFPE human A549 cells. Immunofluorescence analysis shows nuclear green signal corresponding to MutS homolog 6 (MSH6), consistent with the nuclear localization of this DNA mismatch repair protein. Alpha Tubulin monoclonal antibody (red) highlights the cytoskeletal microtubule network within the cytoplasm. HIER: steam section in pH 6 citrate buffer for 20 min.



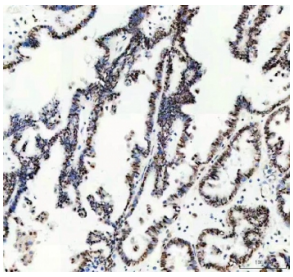
MSH6 Antibody Rabbit Polyclonal for IF staining of FFPE human A431 cells. Immunofluorescence analysis shows nuclear green staining corresponding to MutS homolog 6 (MSH6), consistent with the nuclear localization of this DNA mismatch repair protein in epithelial tumor cells. Nuclei are counterstained with DAPI (blue). HIER: steam section in pH 6 citrate buffer for 20 min.



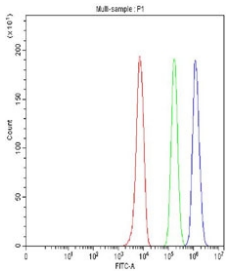
Western blot testing of human 1) HEK293, 2) HepG2, 3) SK-O-V3, 4) U-87 MG and 5) K562 lysate with MSH6 antibody. Expected molecular weight: 120-160 kDa depending on phosphorylation level.



Western blot testing of 1) human K562, 2) human HeLa, 3) human 293T, 4) human HepG2, 5) rat RH35 and 6) mouse NIH 3T3 cell lysate with MSH6 antibody. Expected molecular weight: 120-160 kDa depending on phosphorylation level.



IHC staining of FFPE human ovarian cancer tissue with MSH6 antibody. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Flow cytometry testing of fixed and permeabilized human HepG2 cells with MSH6 antibody at 1ug/million cells (blocked with goat sera); Red=cells alone, Green=isotype control, Blue= MSH6 antibody.

Description

MutS homolog 6 (MSH6) is a nuclear DNA mismatch repair protein encoded by the MSH6 gene and functions as a key component of the MutSalpha complex together with MSH2. This heterodimer detects base-base mismatches and small insertion-deletion loops that arise during DNA replication, initiating repair mechanisms that maintain genomic stability. MSH6 is widely expressed in proliferating tissues and is particularly abundant in epithelial and hematopoietic cell populations where DNA replication and repair activity are active. Loss or dysfunction of MSH6 disrupts the mismatch repair pathway and contributes to microsatellite instability, a molecular hallmark observed in several cancers including colorectal and endometrial carcinoma associated with Lynch syndrome.

MSH6 Antibody Rabbit Polyclonal for IF is used to visualize intracellular localization of this mismatch repair protein using

immunofluorescence microscopy. Because MSH6 functions in monitoring DNA replication fidelity, it localizes primarily within the nucleus where it participates in detection of replication errors and recruitment of downstream repair factors. Immunofluorescence staining typically reveals strong nuclear signal in proliferating cells, reflecting the protein's role in maintaining genomic integrity during the cell cycle. Visualization of MSH6 expression by immunofluorescence enables researchers to examine subcellular distribution patterns, assess protein expression levels within individual cells, and evaluate cellular heterogeneity within cultured cell populations.

Within the mismatch repair pathway, MSH6 forms the MutSalpha complex with MSH2, which recognizes mismatched nucleotides and insertion-deletion loops generated during DNA replication. Following mismatch recognition, the complex recruits downstream repair proteins including MLH1 and PMS2 that coordinate excision and resynthesis of the newly synthesized DNA strand. Proper functioning of this pathway is essential for preventing accumulation of replication-associated mutations and preserving genomic stability. Disruption of MSH6 expression or function therefore contributes to tumorigenesis and has become an important molecular marker in studies of mismatch repair deficiency.

Immunofluorescence-based detection of MSH6 expression provides valuable insight into nuclear localization patterns and cell-to-cell variation in mismatch repair protein abundance. A rabbit polyclonal MSH6 antibody can recognize multiple epitopes within the target protein, which may enhance detection sensitivity in fluorescence microscopy experiments where signal intensity and antigen accessibility can vary depending on fixation or permeabilization conditions. MSH6 antibody reagents are therefore widely used in cell biology and cancer research to study DNA repair pathways, investigate responses to replication stress, and evaluate alterations in mismatch repair proteins across experimental systems.

Application Notes

Optimal dilution of the MSH6 antibody should be determined by the researcher.

Immunogen

Amino acids KAREFEKMNQSLRLFREVCLA from the human protein were used as the immunogen for the MSH6 antibody.

Storage

After reconstitution, the MSH6 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

GTBP antibody, G/T mismatch-binding protein antibody, DNA mismatch repair protein MSH6 antibody