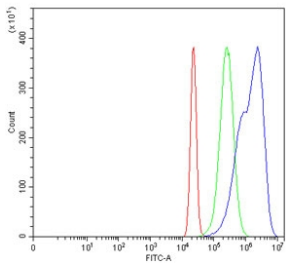
MSH6 Antibody Rabbit Polyclonal for FACS / MutS homolog 6 flow cytometry antibody (RQ6659)

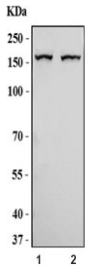
Catalog No.	Formulation	Size
RQ6659	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

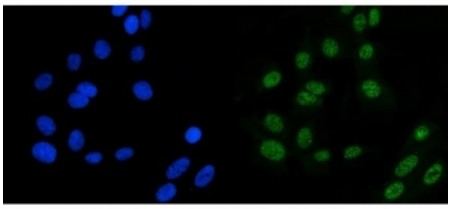
Availability	1-3 business days
Species Reactivity	Human
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	P52701
Localization	Nuclear
Applications	Western blot: 1-2ug/ml Immunofluorescence (FFPE): 5ug/ml Flow cytometry: 1-3ug/million cells Direct ELISA: 0.1-0.5ug/ml
Limitations	This MSH6 antibody is available for research use only.



MSH6 Antibody Rabbit Polyclonal for FACS analysis of fixed and permeabilized human HeLa cells. Flow cytometry demonstrates a rightward fluorescence shift in the population stained with the rabbit polyclonal MSH6 antibody compared to the isotype control, indicating detection of intracellular MutS homolog 6 (MSH6), a nuclear DNA mismatch repair protein. Cells were stained at 1 ug antibody per million cells following blocking with goat sera. Red histogram represents cells alone, green histogram represents the isotype control, and blue histogram represents cells stained with the MSH6 antibody.



Western blot testing of human 1) HepG2 and 2) A549 cell lysate with MSH6 antibody. Expected molecular weight: 120-160 kDa depending on phosphorylation level.



Immunofluorescent staining of FFPE human U-2 OS cells with MSH6 antibody (green) and DAPI nuclear stain (blue). HIER: steam section in pH6 citrate buffer for 20 min.

Description

MutS homolog 6 (MSH6) is a nuclear DNA mismatch repair protein encoded by the MSH6 gene and functions as an essential component of the MutSalpha complex together with MSH2. This heterodimer recognizes base-base mismatches and small insertion-deletion loops that arise during DNA replication, initiating downstream repair pathways that preserve genomic stability. MSH6 plays a central role in maintaining DNA replication fidelity in proliferating cells and is widely expressed in epithelial, hematopoietic, and other rapidly dividing tissues. Loss or inactivation of MSH6 disrupts mismatch repair and contributes to microsatellite instability, a characteristic feature of several hereditary and sporadic cancers including colorectal and endometrial carcinomas associated with Lynch syndrome.

MSH6 Antibody Rabbit Polyclonal for FACS is used to evaluate intracellular expression of this mismatch repair protein using flow cytometry. Because MSH6 functions within the nucleus to monitor DNA replication errors, detection by flow cytometry typically requires fixation and permeabilization of cells to allow antibody access to nuclear targets. Flow cytometric analysis enables rapid quantitative assessment of MSH6 protein levels across large cell populations while preserving the ability to analyze cell-to-cell variation. This approach is particularly useful when studying tumor cell lines, primary cell samples, or heterogeneous cell populations where mismatch repair activity may vary among individual cells.

Within the mismatch repair pathway, the MutSalpha complex formed by MSH6 and MSH2 binds mismatched nucleotides generated during DNA replication. Following mismatch recognition, this complex recruits the MutLalpha complex composed of MLH1 and PMS2, which coordinates excision of the newly synthesized DNA strand and replacement with the correct nucleotide sequence. Proper function of this repair pathway is critical for preventing accumulation of replication-associated mutations and maintaining genome integrity. Alterations in MSH6 expression or function therefore contribute to tumor development and progression in multiple cancer types.

Flow cytometry-based detection of MSH6 expression allows researchers to measure nuclear mismatch repair protein levels at the single-cell level, providing insight into cellular heterogeneity and DNA repair pathway activity. A rabbit polyclonal MSH6 antibody can recognize multiple epitopes within the target protein, which may enhance detection sensitivity when analyzing intracellular proteins under permeabilized conditions. MSH6 antibody reagents are therefore widely used in studies of DNA repair biology, cancer research, and experimental systems investigating genomic stability and mismatch repair deficiency.

For a protein microarray-validated reagent and additional information on mismatch repair and genomic stability, visit our MSH6 Antibody / DNA Mismatch Repair Protein Antibody page.

Application Notes

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

Immunogen

Recombinant human protein (amino acids D357-H388) was 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.

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