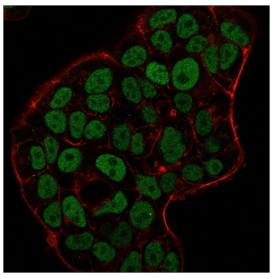
# MSH6 Antibody for IF / MutS homolog 6 immunofluorescence antibody [clone MSH6/3091] (V8011)

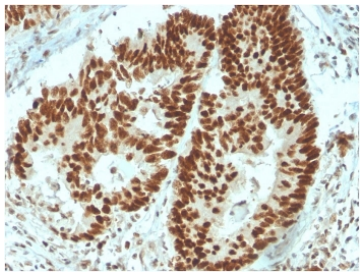
| Catalog No. | Formulation | Size |
|---|---|---|
| V8011-100UG | 0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide | 100 ug |
| V8011-20UG | 0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide | 20 ug |
| V8011SAF-100UG | 1 mg/ml in 1X PBS; BSA free, sodium azide free | 100 ug |

## Bulk quote request

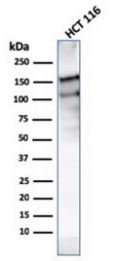
| | |
|---|---|
| **Availability** | 1-3 business days |
| **Species Reactivity** | Human |
| **Format** | Purified |
| **Host** | Mouse |
| **Clonality** | Monoclonal (mouse origin) |
| **Isotype** | Mouse IgG2b, kappa |
| **Clone Name** | MSH6/3091 |
| **Purity** | Protein G affinity chromatography |
| **UniProt** | P52701 |
| **Localization** | Nuclear |
| **Applications** | ELISA (order BSA-free Format For Coating) :<br>Immunofluorescence : 1-2ug/ml<br>Western Blot : 1-2ug/ml<br>Immunohistochemistry (FFPE) : 1-2ug/ml |
| **Limitations** | This MSH6 antibody is available for research use only. |



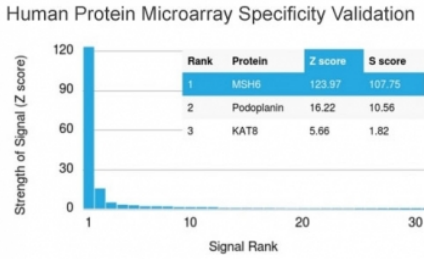
MSH6 Antibody for IF staining of PFA-fixed human MCF-7 cells. Immunofluorescence analysis shows strong nuclear green signal corresponding to MutS homolog 6 (MSH6), consistent with the nuclear localization of this DNA mismatch repair protein. Cells were stained with the mouse monoclonal MSH6 antibody clone MSH6/3091 (green), while Phalloidin (red) highlights filamentous actin outlining the cytoskeleton and cell boundaries.



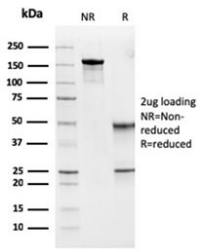
IHC staining of FFPE human colon carcinoma with MSH6 antibody (clone MSH6/3091). HIER: boil tissue sections in pH 9 10mM Tris with 1mM EDTA for 10-20 min and allow to cool before testing.




Western blot testing of human HCT116 lysate with MSH6 antibody (clone MSH6/3091). Expected molecular weight: 120-160 kDa depending on phosphorylation level.




Analysis of HuProt(TM) microarray containing more than 19,000 full-length human proteins using MSH6 antibody (clone MSH6/3091). These results demonstrate the foremost specificity of the MSH6/3091 mAb.
Z- and S- score: The Z-score represents the strength of a signal that an antibody (in combination with a fluorescently-tagged anti-IgG secondary Ab) produces when binding to a particular protein on the HuProt(TM) array. Z-scores are described in units of standard deviations (SD's) above the mean value of all signals generated on that array. If the targets on the HuProt(TM) are arranged in descending order of the Z-score, the S-score is the difference (also in units of SD's) between the Z-scores. The S-score therefore represents the relative target specificity of an Ab to its intended target.




SDS-PAGE analysis of purified, BSA-free MSH6 antibody (clone MSH6/3091) as confirmation of integrity and purity.

## 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 recognizes base-base mismatches and small insertion-deletion loops that arise during DNA replication, initiating repair pathways that maintain genomic integrity. MSH6 is widely expressed in proliferating tissues and is particularly abundant in epithelial and hematopoietic cell populations where DNA replication and repair activity are high. Loss of MSH6 function disrupts mismatch repair and contributes to microsatellite instability, a molecular feature observed in several cancers including colorectal and endometrial carcinoma associated with Lynch syndrome.

MSH6 Antibody for IF is commonly used to visualize the intracellular distribution of this mismatch repair protein by immunofluorescence microscopy. Because MSH6 functions in monitoring newly synthesized DNA, it localizes predominantly within the nucleus where it participates in detection of replication errors and recruitment of downstream repair factors. Immunofluorescence staining with MSH6 antibodies typically reveals strong nuclear signal in proliferating cells, reflecting the protein's role in DNA surveillance during the S phase of the cell cycle. Visualization of MSH6 by

immunofluorescence allows researchers to examine subcellular localization patterns, cellular heterogeneity, and protein expression levels within individual cells.

In the DNA mismatch repair pathway, the MutSalpha complex formed by MSH6 and MSH2 recognizes mismatched nucleotides and small insertion or deletion loops that escape polymerase proofreading. After mismatch recognition, this complex recruits the MutLalpha complex consisting of MLH1 and PMS2, which coordinates excision and resynthesis of the newly synthesized DNA strand. Proper functioning of this pathway is critical for maintaining genome stability and preventing accumulation of replication-associated mutations. As a result, loss or reduction of MSH6 expression is frequently associated with tumorigenesis and has become an important biomarker in studies of mismatch repair deficiency.

Immunofluorescence analysis of MSH6 expression provides valuable information about nuclear localization and cell-to-cell variation in mismatch repair protein levels. MSH6 antibody reagents are therefore widely used in cell biology and cancer research to study DNA repair pathways, investigate cellular responses to replication stress, and evaluate alterations in mismatch repair proteins across different experimental systems. Clone MSH6/3091 is a mouse monoclonal antibody designed to recognize MutS homolog 6 and supports visualization of nuclear MSH6 expression patterns in immunofluorescence-based assays.

## Application Notes

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

## Immunogen

A recombinant human partial protein (amino acids 374-540) was used as the immunogen for the MSH6 antibody.

## Storage

Store the MSH6 antibody at 2-8oC (with azide) or aliquot and store at -20oC or colder (without azide).

## Alternate Names

GTBP antibody, G/T mismatch-binding protein antibody, MutS homolog 6 protein antibody