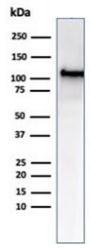
MSH2 Antibody Recombinant Rabbit MAb MSH2/6549R / MutS homolog 2 Antibody [clone MSH2/6549R] (V9303)

Catalog No.	Formulation	Size
V9303-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V9303-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V9303SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

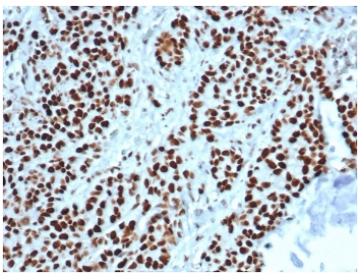
Recombinant RABBIT MONOCLONAL

Bulk quote request

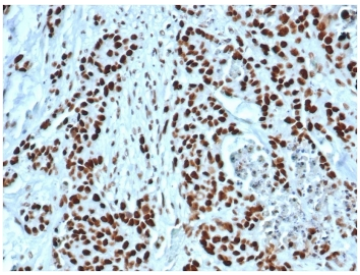
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	MSH2/6549R
Purity	Protein A/G affinity
UniProt	IDP43246
Localization	Nuclear
Applications	Western Blot : 1-2ug/ml Immunohistochemistry (FFPE) : 1-2ug/ml
Limitations	This MSH2 antibody is available for research use only.



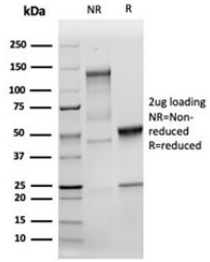
MSH2 Antibody Recombinant Rabbit MAb MSH2/6549R. Western blot analysis of human HCT-116 cell lysate demonstrates a distinct band at approximately 105 kDa, consistent with the predicted molecular weight of MutS homolog 2 (MSH2). The detected band corresponds to the full-length nuclear DNA mismatch repair protein involved in maintaining genomic stability. This result confirms detection of MSH2 protein in human colorectal carcinoma-derived HCT-116 cells, a model frequently used for studies of DNA mismatch repair pathways.



IHC staining of FFPE human colon tissue with MSH2 antibody (clone MSH2/6549R). HIER: boil tissue sections in pH 9 10mM Tris with 1mM EDTA for 20 min and allow to cool before testing.



MSH2 Antibody Recombinant Rabbit MAb MSH2/6549R. Immunohistochemistry of FFPE human colon tissue demonstrates strong nuclear staining in 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 throughout the colonic epithelium, while surrounding stromal cells show weaker or variable staining. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 9 10mM Tris with 1mM EDTA for 20 minutes followed by cooling prior to antibody incubation.



SDS-PAGE analysis of purified, BSA-free MSH2 antibody (clone MSH2/6549R) as confirmation of integrity and purity.

Description

MutS homolog 2 (MSH2) is a nuclear DNA mismatch repair protein encoded by the MSH2 gene and plays a central role in maintaining genomic stability by recognizing replication-associated DNA mismatches. MSH2 Antibody Recombinant Rabbit MAb MSH2/6549R targets MutS homolog 2 / MSH2 and enables detection of this essential DNA repair protein in studies focused on genome maintenance, DNA replication fidelity, and tumor biology. The MSH2 protein belongs to the MutS family of mismatch repair proteins and functions primarily within the nucleus where it participates in surveillance of newly synthesized DNA strands for base mismatches and insertion-deletion loops.

MSH2 antibody, also referred to as MutS homolog 2 antibody or hMSH2 antibody in the literature, detects a protein that forms heterodimeric complexes critical for mismatch repair recognition. MSH2 commonly pairs with MSH6 to form the MutS alpha complex, which recognizes single-base mismatches and small insertion-deletion loops, or with MSH3 to form the MutS beta complex that recognizes larger insertion-deletion loops. These complexes initiate the mismatch repair process by recruiting downstream repair proteins that remove and resynthesize incorrect DNA segments.

Within the nucleus, MSH2 functions as an early mismatch recognition factor and contributes to the cellular defense against mutagenesis. Proper expression and localization of MSH2 are essential for maintaining DNA replication fidelity, preventing accumulation of mutations, and supporting normal cellular proliferation. Because mismatch repair proteins operate within chromatin during DNA replication and repair, MSH2 is predominantly detected in the nuclear compartment of proliferating cells.

Loss of MSH2 function can disrupt mismatch repair pathways and lead to microsatellite instability, a genomic phenotype frequently associated with hereditary and sporadic cancers. Germline mutations in the MSH2 gene are strongly linked to Lynch syndrome, a hereditary cancer predisposition disorder characterized by increased risk of colorectal, endometrial, and other malignancies. Altered expression of MSH2 has therefore become an important subject of study in cancer biology, particularly in research investigating DNA repair deficiencies and tumor development.

MSH2 Antibody Recombinant Rabbit MAb MSH2/6549R provides a tool for detecting MutS homolog 2 protein expression and localization in biological samples. Analysis of MSH2 can help researchers investigate DNA mismatch repair activity, genome maintenance pathways, and molecular mechanisms underlying mismatch repair deficiency in human disease.

Application Notes

Optimal dilution of the MSH2 Antibody Recombinant Rabbit MAb MSH2/6549R should be determined by the researcher.

Immunogen

Recombinant full-length human MSH2 protein was used as the immunogen for the MSH2 antibody.

Storage

Aliquot the MSH2 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

Alternate Names

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