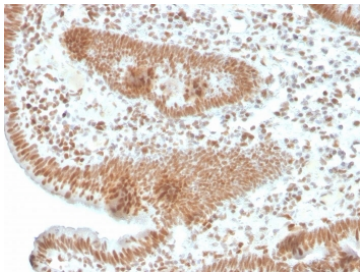
PMS2 Antibody / DNA Mismatch Repair Protein Antibody [clone PMS2/4373R] (V8728)

Catalog No.	Formulation	Size
V8728-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V8728-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V8728SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

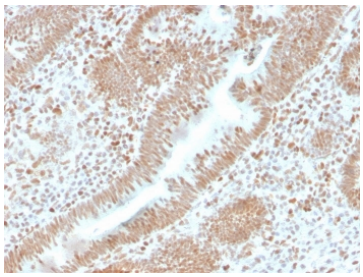
Recombinant RABBIT MONOCLONAL

Bulk quote request

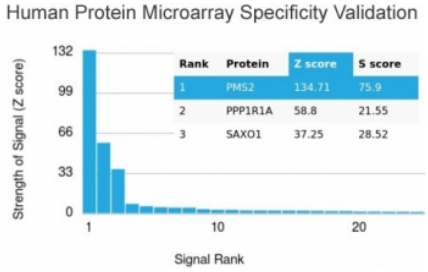
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	PMS2/4373R
Purity	Protein A affinity chromatography
UniProt	P54278
Localization	Nuclear
Applications	Immunohistochemistry (FFPE): 1-2ug/ml
Limitations	This PMS2 Antibody / DNA Mismatch Repair Protein Antibody is available for research use only.



PMS2 Antibody Human Colon Carcinoma IHC. Immunohistochemical staining of FFPE human colon carcinoma tissue using recombinant PMS2 antibody demonstrated strong nuclear staining in tumor cells, consistent with the role of PMS2 as a DNA mismatch repair protein. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 9 Tris-EDTA buffer (10 mM Tris, 1 mM EDTA) for 20 minutes followed by cooling prior to staining. The predominantly nuclear staining pattern is consistent with the localization of PMS2 within the DNA mismatch repair machinery. This PMS2 Antibody, also called a DNA Mismatch Repair Protein Antibody, is useful for investigating mismatch repair, genomic stability, Lynch syndrome, and microsatellite instability.



PMS2 Antibody Human Colorectal Cancer IHC. Immunohistochemical staining of FFPE human colon carcinoma tissue using recombinant PMS2 antibody demonstrated strong nuclear staining in malignant epithelial cells, consistent with the nuclear localization of PMS2 as a DNA mismatch repair protein. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 9 Tris-EDTA buffer (10 mM Tris, 1 mM EDTA) for 20 minutes followed by cooling prior to staining. The preserved nuclear immunoreactivity is consistent with intact PMS2 expression in this tumor. This PMS2 Antibody, also called a DNA Mismatch Repair Protein Antibody, is useful for investigating mismatch repair, genomic stability, Lynch syndrome, and microsatellite instability.



PMS2 Antibody Protein Microarray Validation. Human HuProt protein microarray analysis containing more than 19,000 full-length human proteins demonstrated exceptional specificity of recombinant PMS2 antibody (clone PMS2/4373R). PMS2 was identified as the highest-ranking target with a Z-score of 134.71 and an S-score of 75.9, substantially exceeding all other proteins on the array. The Z-score reflects the strength of antibody binding to an individual protein relative to background, while the S-score measures the specificity of the antibody for its intended target compared with the next highest-ranking proteins. These results confirm the excellent target specificity of clone PMS2/4373R for research applications.

Description

PMS2 Antibody / DNA Mismatch Repair Protein Antibody recognizes PMS2, also known as Postmeiotic Segregation Increased 2, an essential component of the DNA mismatch repair (MMR) system that preserves genomic stability by correcting errors introduced during DNA replication. PMS2 forms the MutL alpha heterodimer with MLH1, creating the principal endonuclease complex responsible for initiating repair of base-base mismatches and insertion-deletion loops. This highly conserved repair pathway prevents the accumulation of mutations, suppresses microsatellite instability, and protects cells from malignant transformation. Because of its central role in maintaining genome integrity, PMS2 has become one of the most widely studied mismatch repair proteins in cancer biology and molecular pathology.

PMS2 functions downstream of the MutS recognition complexes, which detect mismatched DNA generated during replication. Following recruitment by MLH1, PMS2 provides the endonuclease activity required to introduce strand-specific incisions that permit removal of the error-containing DNA segment and subsequent repair synthesis. Beyond mismatch repair, PMS2 contributes to DNA damage signaling, cell cycle checkpoint regulation, apoptosis, and cellular responses to genotoxic stress. Loss of PMS2 function results in increased mutation rates and chromosomal instability, underscoring its importance in preserving genomic fidelity across proliferating tissues.

Inherited pathogenic variants in the PMS2 gene are a major cause of Lynch syndrome, also known as hereditary nonpolyposis colorectal cancer, predisposing affected individuals to colorectal, endometrial, ovarian, gastric, pancreatic, urinary tract, and other malignancies. Somatic loss of PMS2 expression is likewise associated with mismatch repair-deficient tumors and microsatellite instability, making PMS2 immunohistochemistry a routine component of diagnostic pathology for colorectal and endometrial cancers. Evaluation of PMS2 expression is frequently performed alongside MLH1, MSH2, and MSH6 to identify mismatch repair deficiency, guide genetic testing, and support therapeutic decision-making, including selection of patients who may benefit from immune checkpoint inhibitor therapy.

Clone PMS2/4373R is a recombinant rabbit monoclonal antibody developed for highly specific detection of PMS2 in research applications. Protein microarray validation against more than 19,000 full-length human proteins demonstrated exceptional target specificity, with PMS2 identified as the highest-ranking target by both Z-score and S-score analysis. The recombinant format further provides excellent lot-to-lot consistency, making clone PMS2/4373R well suited for studies of DNA mismatch repair, genomic stability, hereditary cancer syndromes, and tumor biology. A PMS2 Antibody is a valuable research tool for investigating mismatch repair mechanisms, Lynch syndrome, microsatellite instability, and DNA damage responses.

Explore additional antibodies for hereditary cancer research, genomic stability, and tumor biology on our Cancer Marker Antibodies page.

Application Notes

Optimal dilution of the PMS2 Antibody / DNA Mismatch Repair Protein Antibody should be determined by the researcher.

Immunogen

A portion of amino acids 1-100 from the human protein was used as the immunogen for the recombinant PMS2 antibody.

Storage

Store the recombinant PMS2 antibody at 2-8oC (with azide) or aliquot and store at -20oC or colder (without azide).

Alternate Names

PMS2 antibody, DNA Mismatch Repair Protein antibody, Postmeiotic Segregation Increased 2 antibody, PMS2 Homolog antibody

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