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PMS2 Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO2121a

Product Information

Application	WB, FC, ICC, E
Primary Accession	P54278
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Clone Names	1E9D11
Isotype	IgG1
Calculated MW	95797
Description	This gene is one of the PMS2 gene family members found in clusters on chromosome 7. The product of this gene is involved in DNA mismatch repair. It forms a heterodimer with MLH1 and this complex interacts with other complexes bound to mismatched bases. Mutations in this gene are associated with hereditary nonpolyposis colorectal cancer, Turcot syndrome, and are a cause of supratentorial primitive neuroectodermal tumors. Alternatively spliced transcript variants have been observed for this gene.
Immunogen	Purified recombinant fragment of human PMS2 (AA: 748-851) expressed in E. Coli.
Formulation	Purified antibody in PBS with 0.05% sodium azide

Additional Information

Gene ID	5395
Other Names	Mismatch repair endonuclease PMS2, 3.1.-.-, DNA mismatch repair protein PMS2, PMS1 protein homolog 2, PMS2, PMSL2
Dilution	WB~~1/500 - 1/2000 FC~~1/200 - 1/400 ICC~~N/A E~~1/10000
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	PMS2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PMS2 (HGNC:9122)

Function	Component of the post-replicative DNA mismatch repair system (MMR) (PubMed:30653781, PubMed:35189042). Heterodimerizes with MLH1 to form MutL alpha. DNA repair is initiated by MutS alpha (MSH2-MSH6) or MutS beta (MSH2-MSH3) binding to a dsDNA mismatch, then MutL alpha is recruited to the heteroduplex. Assembly of the MutL-MutS-heteroduplex ternary complex in presence of RFC and PCNA is sufficient to activate endonuclease activity of PMS2. It introduces single-strand breaks near the mismatch and thus generates new entry points for the exonuclease EXO1 to degrade the strand containing the mismatch. DNA methylation would prevent cleavage and therefore assure that only the newly mutated DNA strand is going to be corrected. MutL alpha (MLH1-PMS2) interacts physically with the clamp loader subunits of DNA polymerase III, suggesting that it may play a role to recruit the DNA polymerase III to the site of the MMR. Also implicated in DNA damage signaling, a process which induces cell cycle arrest and can lead to apoptosis in case of major DNA damages. Possesses an ATPase activity, but in the absence of gross structural changes, ATP hydrolysis may not be necessary for proficient mismatch repair (PubMed:35189042).
Cellular Location	Nucleus

References

1.J Med Genet. 2013 Aug;50(8):552-63.2.Hum Mutat. 2010 May;31(5):552-60.

Images