

**Mouse Anti-PMS2 [1G4E6]: MC0167, MC0167RTU7**

**Intended Use:** For Research Use Only

**Description:** PMS2, a mismatch repair endonuclease, is a member of a family of genes involved in DNA mismatch repair. Carriers of the mismatch repair gene mutations have a high lifetime risk of developing Hereditary Non-Polyposis Colon Cancer (HNPCC) and several other cancers including endometrial cancer due to microsatellite instability (MSI) caused by accumulation of DNA replication errors in proliferating cells. Along with MLH1, MSH2 and MSH6, PMS2 antibody is helpful in diagnosis of MSI. An IHC study conducted by Mayo Clinic on 535 cases with MSI-high, 90% of the tumors showed loss of MLH1, MSH2 and/or MSH6 expression, while 70% of the remaining cases showed isolated loss of PMS2 expression. The loss of PMS2 was associated with young age of diagnosis and right-sided location but not with a striking family history of cancer. Endometrial carcinomas are the most common non-colorectal cancers associated with Lynch syndrome. The most common IHC abnormality in endometrial carcinomas with MSI was concurrent loss of MLH1/PMS2. Adding PMS2 and MSH6 to MLH1 and MSH2 antibodies increased sensitivity for diagnosis of MSI. Tumors with low-level MSI show unfavorable pathological characteristics compared to tumors with no MSI and tumors with high-level MSI.

**Specifications:**

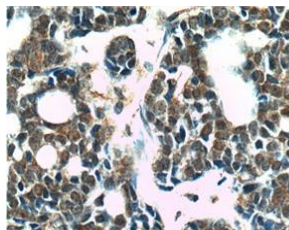
Clone: 1G4E6  
 Source: Mouse  
 Isotype: IgG2a  
 Reactivity: Human, mouse, rat  
 Localization: Nucleus  
 Formulation: Antibody in PBS pH7.4, containing BSA and  $\leq 0.09\%$  sodium azide (NaN<sub>3</sub>)  
 Storage: Store at 2°- 8°C  
 Applications: IHC, ELISA, WB  
 Package:

Description	Catalog No.	Size
PMS2 Concentrated	MC0167	1 ml
PMS2 Prediluted	MC0167RTU7	7 ml

**IHC Procedure\*:**

Positive Control Tissue: Colon  
 Concentrated Dilution: 25-100  
 Pretreatment: Tris EDTA pH9.0, 15 minutes using Pressure Cooker, or 30-60 minutes using water bath at 95°-99°C  
 Incubation Time and Temp: Overnight @ 4°C  
 Detection: Refer to the detection system manual

\* Result should be confirmed by an established diagnostic procedure.



FFPE human cervical cancer stained with anti-PMS2 using DAB

**References:**

1. Germline mutations in PMS2 and MLH1 in individuals with solitary loss of PMS2 expression in colorectal carcinomas from the Colon Cancer Family Registry Cohort. Christophe Rosty, et al. *BMJ Open*. 6(2): e010293., 2016.
2. Identification of a Novel PMS2 Alteration c.505C>G (R169G) In Trans with a PMS2 Pathogenic Mutation in a Patient with Constitutional Mismatch Repair Deficiency. Maureen E. Mork, et al. *Fam Cancer*. 2016 Oct; 15(4): 587–591. 2016.
3. MSH6 and PMS2 mutation positive Australian Lynch syndrome families: novel mutations, cancer risk and age of diagnosis of colorectal cancer. Bente A Talseth-Palmer, et al. *Hered Cancer Clin Pract*. 8(1): 5. 2010.

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