

PRODUCT INFORMATION

MSH2 Rabbit Monoclonal Antibody (Clone RM478)

Item No. 42839

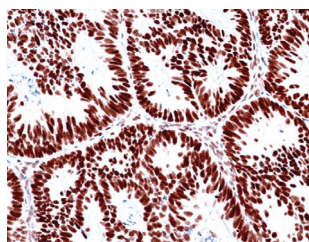
Overview and Properties

Contents:	This vial contains 100 µl of protein A-affinity purified monoclonal antibody.
Immunogen:	Recombinant peptide within 500 amino acids of the C-terminus of human MSH2
Cross Reactivity:	(+) HMSH2
Species Reactivity:	(+) Human
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS with 50% glycerol, 1% BSA, and 0.09% sodium azide
Concentration:	1.0 mg/ml
Clone:	RM478
Host:	Rabbit
Isotype:	IgG
Applications:	Immunohistochemistry (IHC), Western blot (WB); the recommended starting dilution is 1:1,000 - 1:2,000. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

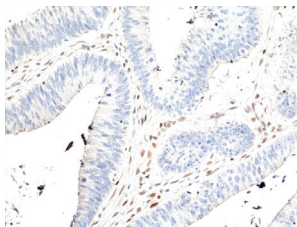
Images



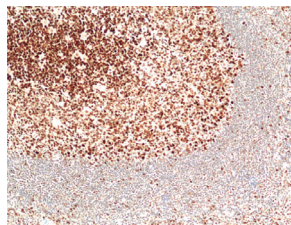
WB of HeLa cell lysate using MSH2 Rabbit Monoclonal Antibody (Clone RM478) at a dilution of 1:5,000.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human colon cancer tissues with MSH2 expression verified using MSH2 Rabbit Monoclonal Antibody (Clone RM478) at a dilution of 1:100.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human colon cancer tissues without MSH2 expression verified using MSH2 Rabbit Monoclonal Antibody (Clone RM478) at a dilution of 1:100.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human tonsil tissue section using MSH2 Rabbit Monoclonal Antibody (Clone RM478) at a dilution of 1:100.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
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Description

MutS homolog 2 (MSH2) is a DNA repair protein.¹ It heterodimerizes with MSH6 or MSH3 to form the MutSα and MutSβ DNA mismatch recognition complexes, respectively, which are divided into five domains: a mismatch-binding domain, connector domain, α-helical lever domain, clamp domain, and an ABC-ATPase domain.^{1,2} It is ubiquitously expressed and localized to the nucleus.^{1,2} MSH2, when complexed with MSH6 or MSH3, recognizes DNA polymerase errors in replicated DNA to activate MutL and initiate DNA repair. Missense mutations in *MSH2* are associated with hereditary nonpolyposis colorectal cancer (HNPCC).^{1,3} Polymorphisms in *MSH2* are associated with an increased risk of developing prostate cancer.⁴ Cayman's MSH2 Rabbit Monoclonal Antibody (Clone RM478) can be used for immunohistochemistry (IHC) and Western blot (WB) applications.

References

1. Kumar, D.T., Susmita, B., Judith, E., *et al.* Elucidating the role of interacting residues of the MSH2-MSH6 complex in DNA repair mechanism: A computational approach. *Advances in protein chemistry and structural biology*. Donev, R., editor, 1st edition, *Academic Press* (2019).
2. Guo, J., Gu, L., Leffak, M., *et al.* MutSβ promotes trinucleotide repeat expansion by recruiting DNA polymerase β to nascent (CAG)_n or (CTG)_n hairpins for error-prone DNA synthesis. *Cell Res.* **26**(7), 775-786 (2016).
3. Warren, J.J., Pohlhaus, T.J., Changela, A., *et al.* Structure of the human MutSα DNA lesion recognition complex. *Mol. Cell* **26**(4), 579-592 (2007).
4. Zhen, J.T., Syed, J., Nguyen, K.A., *et al.* Genetic testing for hereditary prostate cancer: Current status and limitations. *Cancer* **124**(15), 3105-3117 (2018).

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