abcam

ab111107

Anti-MSH3 antibody [EPR4334(2)]

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR4334(2)
Purification technique	Affinity purification Protein A
Concentration	0.373 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/500 - 1/1000
Notes	Heat up to 98 degrees C, below boiling, and then let cool for 10-20 min. Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

ICC/IF

Tested

Species	Human
Dilution info	1/50
Notes	For unpurified use as 1/250 - 1/500

WB

Not recommended

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/40
Notes	-

Target data

See full target information MSH3

Function Component of the post-replicative DNA mismatch repair system (MMR). Heterodimerizes with MSH2 to form MutS beta which binds to DNA mismatches thereby initiating DNA repair. When bound, the MutS beta heterodimer bends the DNA helix and shields approximately 20 base pairs. MutS beta recognizes large insertion-deletion loops (IDL) up to 13 nucleotides long. After mismatch binding, forms a ternary complex with the MutL alpha heterodimer, which is thought to be responsible for directing the downstream MMR events, including strand discrimination, excision, and resynthesis.

Storage

Shipped at conditions Conditional Ambient

Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Storage information	Stable for 12 months at -20°C

Notes

To see more of the key markers and tools you need to study the hallmarks of cancer, including genome instability and mutation, please visit the following page.

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	The mutS homolog 3 (MSH3) protein plays an important role in DNA mismatch repair. It is part of the family of MutS proteins and is sometimes referred to by its gene name MSH3. MSH3 forms a heterodimer with MSH2 to create MutSβ. This complex targets insertion and deletion loops. The mass of MSH3 is approximately 127 kDa. Expression of MSH3 occurs in various tissues with high levels in the colon small intestine and testis.
Biological function summary	MSH3 contributes to genome stability by correcting DNA replication errors. As part of the MutSβ complex it identifies and initiates repair of insertion and deletion loops which helps maintain genomic integrity. In eukaryotes MSH3 along with its partner MSH2 cooperates with other proteins such as MLH1 and PMS2 to ensure proper mismatch repair. These interactions help to prevent mutations from becoming permanent.
Pathways	MSH3 participates in the DNA mismatch repair pathway important for maintaining genomic fidelity. It works closely with MSH2 to form MutSβ enhancing the repair of small loops. Another important association includes the MLH1-PMS2 complex within the mismatch repair pathways. This collaboration ensures errors in DNA during replication do not lead to genomic instability.

Associated diseases and disorders	Mutations or malfunctioning of MSH3 have been associated with colorectal cancer and Lynch syndrome. Alterations in MSH3 can impair DNA repair processes contributing to cancer development. The MSH2 protein which pairs with MSH3 also plays a critical role in these disorders. Understanding MSH3 function helps illuminate its involvement in genetic stability and its impact on health.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

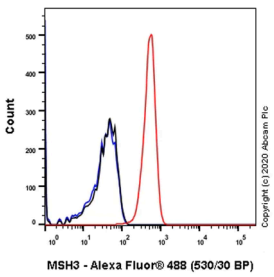
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

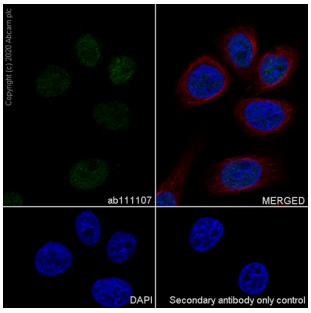
3 product images



Flow Cytometry (Intracellular) - Anti-MSH3 antibody [EPR4334(2)] (ab111107)

MSH3 Flow Cytometry (Intracellular) staining using rabbit Anti-MSH3 antibody

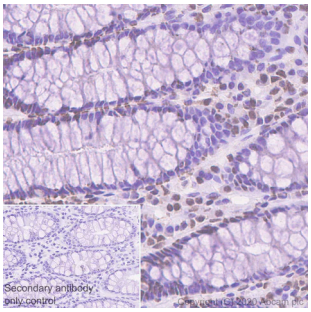
Intracellular Flow Cytometry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling MSH3 with Purified ab111107 at 1/40 dilution (10µg/ml) (Red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluorr® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue).



Immunocytochemistry/ Immunofluorescence - Anti-MSH3 antibody [EPR4334(2)] (ab111107)

MSH3 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-MSH3 antibody

Immunocytochemistry/ Immunofluorescence analysis of SW480 (Human colorectal adenocarcinoma epithelial cell) cells labeling MSH3 with Purified ab111107 at 1:50 dilution (7.46 µg/ml). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1:200 (2.5 µg/ml). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1:1000 (2 µg/ml) dilution. DAPI nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MSH3 antibody [EPR4334(2)] (ab111107)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human colon tissue sections labeling MSH3 with Purified ab111107 at 1:700 dilution (0.53 µg/ml). Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0). Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain. The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.