abcam

ab248148

Anti-MCM3 antibody [EPR7081] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR7081
Purification technique	Affinity purification
Dissociation constant	6.3 x 10^{-11} M
Concentration	1.028 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human

Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Human
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Target data

See full target information MCM3

Function

Acts as a component of the MCM2-7 complex (MCM complex) which is the replicative helicase essential for 'once per cell cycle' DNA replication initiation and elongation in eukaryotic cells. Core component of CDC45-MCM-GINS (CMG) helicase, the molecular machine that unwinds template DNA during replication, and around which the replisome is built (PubMed:32453425, PubMed:34694004, PubMed:34700328, PubMed:35585232). The active ATPase sites in the MCM2-7 ring are formed through the interaction surfaces of two neighboring subunits such that a critical structure of a conserved arginine finger motif is provided in trans relative to the ATP-binding site of the Walker A box of the adjacent subunit. The six ATPase active sites, however, are likely to contribute differentially to the complex helicase

activity (PubMed:32453425). Required for the entry in S phase and for cell division (Probable).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab248148 is the carrier-free version of ab126723.

Species reactivity

Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.

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.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility

This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

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

Activity summary	The Minichromosome Maintenance Complex Component 3 also called MCM3 plays an important role in DNA replication. It is part of the MCM complex which acts as a helicase that unwinds DNA as part of its function. MCM3 has a molecular mass of approximately 100 kDa and is expressed across various tissues reflecting its fundamental role in cell cycle regulation. Researchers have identified MCM3's presence not only in proliferating cells but also in areas of high DNA replication demand such as during embryonic development.
Biological function summary	The MCM3 protein is critical in establishing the prereplication complex which initiates DNA synthesis. It forms a heterohexamer along with other MCM proteins (MCM2 MCM4 MCM5 MCM6 and MCM7) constituting the core of the replication licensing system. By controlling the replication fork progression MCM3 ensures precise replication and genome stability. The complex's activity is essential for the successful transition from the G1 phase to the S phase of the cell cycle.
Pathways	MCM3 is an important component of the cell cycle control pathway and DNA damage response pathway. It interacts with other key proteins such as CDC6 and CDT1 which regulate its loading onto chromatin. MCM3's helicase activity is an integral part of the replication machinery ensuring that DNA replication proceeds smoothly and accurately. By coordinating with proteins like Cyclin E MCM3 helps maintain the fidelity and timing of DNA replication safeguarding the genetic material.
Associated diseases and disorders	Irregular expression or function of MCM3 has been linked to cancer and genomic instability disorders. Cancer cells often exhibit high levels of MCM3 which correlates with increased proliferation rates and aggressive tumor growth. Connections between MCM3 and the p53 protein highlight its potential role in tumorigenesis as p53 mutations often result in loss of genome integrity which MCM3 helps to safeguard. As such MCM3 serves not only as a marker for cancer diagnosis but also potentially as a therapeutic target.

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

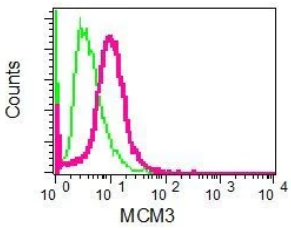
We do not recommend this combination. It is not covered by our product promise.

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.

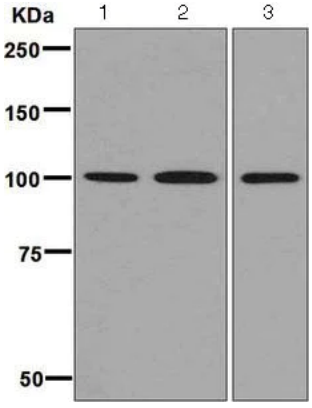
3 product images



Flow Cytometry (Intracellular) - Anti-MCM3 antibody [EPR7081] - BSA and Azide free (ab248148)

MCM3 Flow Cytometry (Intracellular) staining using rabbit Anti-MCM3 antibody

This data was developed using ab126723, the same antibody clone in a different buffer formulation.
ab126723, at 1/10 dilution staining MCM3 in permeabilized 293T cells by intracellular flow cytometry (red). A rabbit IgG negative control is shown in green.



Western blot - Anti-MCM3 antibody [EPR7081] - BSA and Azide free (ab248148)

MCM3 Western blot staining using rabbit Anti-MCM3 antibody

This data was developed using ab126723, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-MCM3 antibody [EPR7081] - BSA and Azide free (ab248148) at 1/1000 dilution

Lane 1:
HeLa cell lysate at 10 µg

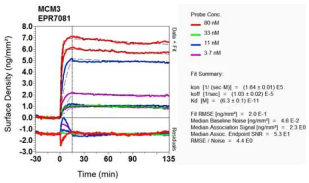
Lane 2:
K562 cell lysate at 10 µg

Lane 3:
293T (Human embryonic kidney epithelial cell) cell lysate at 10 µg

Secondary

All lanes:
HRP labelled goat anti-rabbit at 1/2000 dilution

Predicted band size: 91 kDa



OI-RD Scanning - Anti-MCM3 antibody [EPR7081] - BSA and Azide free (ab248148)

We have systematically measured KD (the equilibrium dissociation constant between the antibody and its antigen), of more than 840 recombinant antibodies to assess not only their individual KD values but also to see the average affinity of antibody. Based on the comparison with published literature values for mouse monoclonal antibodies, Recombinant antibodies appear to be on average 1-2 order of magnitude higher affinity.

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