abcam

ab248027

Anti-MCM4 antibody [EPR5245] - 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	EPR5245
Purification technique	Affinity purification Protein A
Dissociation constant	1.8 x 10^{-11} M
Concentration	1.016 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human

Dilution info	-
Notes	-

Predicted

Species	Mouse
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Human, Mouse
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Human, Mouse
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse
Dilution info	-

Notes	-

Target data

See full target information MCM4

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:16899510, PubMed:25661590, PubMed:32453425, PubMed:34694004, PubMed:34700328, PubMed:35585232, PubMed:9305914). 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:16899510, PubMed:25661590, PubMed:32453425, PubMed:9305914).

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

ab248027 is the carrier-free version of ab124836.

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.

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

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	MCM4 or Minichromosome Maintenance Complex Component 4 is a part of the MCM2-7 complex which is essential for the initiation and progression of DNA replication. It has a molecular mass of approximately 95 kDa. MCM4 functions as a DNA helicase unwinding DNA strands to allow replication forks to progress. This protein is expressed in various tissues with higher levels detected in dividing cells indicating its role in cell proliferation.
Biological function summary	MCM4 is a critical player in cell cycle regulation as it participates in the formation of the pre-replicative complex during the G1 phase of the cell cycle. Its function becomes evident as it interacts within the MCM2-7 hexameric complex important for helicase activity and stability. This complex prevents DNA re-replication within a single cell cycle ensuring the maintenance of genomic integrity.
Pathways	Several cellular mechanisms engage MCM4 particularly the DNA replication and cell cycle pathways. MCM4 associates with proteins like CDC45 and GINS within the CMG complex facilitating the activation and elongation phases of DNA replication. This relationship places MCM4 at the heart of orchestrating proper DNA synthesis and mitotic entry.
Associated diseases and disorders	Researchers have linked MCM4 abnormalities to cancer progression and genomic instability. Overexpression or mutations in MCM4 disrupts normal replication processes heightening the risk for various cancers including breast and ovarian cancer. It also demonstrates interaction with the tumor suppressor protein p53 suggesting its involvement in processes that underpin malignancies linked to failed checkpoint control.

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.

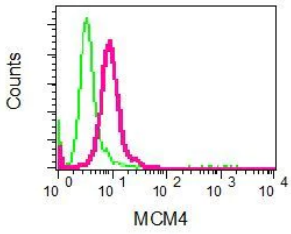
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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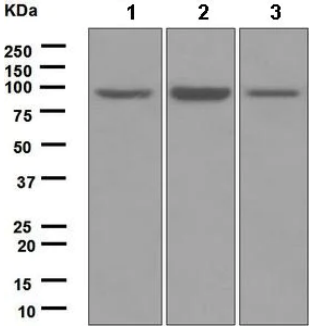
3 product images



Flow Cytometry (Intracellular) - Anti-MCM4 antibody [EPR5245] - BSA and Azide free (ab248027)

MCM4 Flow Cytometry (Intracellular) staining using rabbit Anti-MCM4 antibody

This data was developed using ab124836, the same antibody clone in a different buffer formulation.
Intracellular flow cytometric analysis of permeabilized Molt-4 cells using anti-MCM4 in red (ab124836) or a rabbit IgG in green (negative).



Western blot - Anti-MCM4 antibody [EPR5245] - BSA and Azide free (ab248027)

MCM4 Western blot staining using rabbit Anti-MCM4 antibody

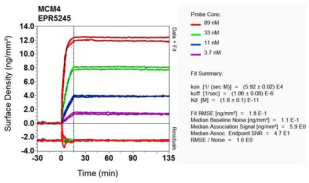
This data was developed using ab124836, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-MCM4 antibody [EPR5245] (ab124836) at 1/50000 dilution

Lane 1:
HeLa cell lysate at 10 µg

Lane 2:
Molt-4 cell lysate at 10 µg

Lane 3:
A431 cell lysate at 10 µg

Predicted band size: 97 kDa



OI-RD Scanning - Anti-MCM4 antibody [EPR5245] - BSA and Azide free (ab248027)

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'.