abcam

# ab126723

# Anti-MCM3 antibody [EPR7081]

Recombinant | RabMAb

## 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** | EPR7081 |
| **Purification technique** | Affinity purification Protein A |
| **Dissociation constant** | $6.3 \times 10^{-11}$ M |
| **Concentration** | 0.242 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

## WB

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/1000 - 1/10000 |
| **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** | 1/10 - 1/100 |
| **Notes** | ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody. |

# 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** | 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

**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.

## 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**

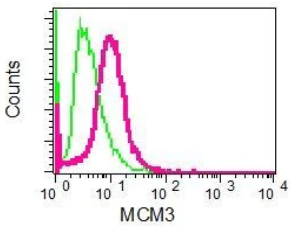
We do not recommend this combination. It is not covered by our product promise.

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.

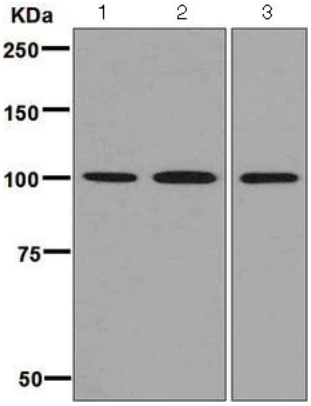
## 3 product images




## Flow Cytometry (Intracellular) - Anti-MCM3 antibody [EPR7081] (ab126723)

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

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] (ab126723)

All lanes:
Western blot - Anti-MCM3 antibody [EPR7081] (ab126723) at 1/1000 dilution

Lane 1:
HeLa cell lysate at 10 µg

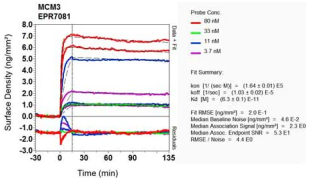
Lane 2:
K562 cell lysate at 10 µg

Lane 3:
293T 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] (ab126723)

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'.