abcam

ab70371

Anti-MCM2 (phospho S40 + S41) antibody

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 6.8 - 7.4 Preservative: 0.09% Sodium azide Constituents: Tris buffered saline, 0.1% BSA
Form	Liquid
Clonality	Polyclonal
Immunogen	Synthetic Peptide within Human MCM2 pS40 + S41. The exact immunogen used to generate this antibody is proprietary information. Database link P49736
Purification technique	Affinity purification Immunogen
Concentration	0.2 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/100 - 1/500
Notes	-

Predicted

Species	Mouse, Rat, Rabbit, Horse, Guinea pig, Cow, Dog, Pig, Xenopus laevis, Chimpanzee, Rhesus monkey, Gorilla, Orangutan, Xenopus tropicalis, Platypus
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000 - 1/5000
Notes	-

Predicted

Species	Mouse, Rat, Rabbit, Horse, Guinea pig, Cow, Dog, Pig, Xenopus laevis, Chimpanzee, Rhesus monkey, Gorilla, Orangutan, Xenopus tropicalis, Platypus
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	0.1 µg for 10^6 Cells
Notes	0.1 µg per 1 X 106 cells in a 150 µl volume/ ab171870 - Rabbit polyclonal IgG, is suitable for use as an isotype control with this antibody.

Predicted

Species	Mouse, Rat, Rabbit, Horse, Guinea pig, Cow, Dog, Pig, Xenopus laevis, Chimpanzee, Rhesus monkey, Gorilla, Orangutan, Xenopus tropicalis, Platypus
Dilution info	-
Notes	-

Target data

See full target information MCM2 pS40 + S41

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 (PubMed:8175912). Plays a role in terminally differentiated hair cells development of the cochlea and induces cells apoptosis (PubMed:26196677).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle, Do Not Freeze

Supplementary info

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

Activity summary	MCM2 or Minichromosome Maintenance Complex Component 2 is a protein involved in the initiation of DNA replication. It plays a central role in the formation of the pre-replication complex which is necessary for DNA unwinding and replication fork progression. The molecular weight of MCM2 is approximately 100 kDa. It is expressed ubiquitously in proliferating cells as its function is necessary for DNA replication. Researchers often use terms like MCM-2 MC M2 or PMC M2 when discussing varying aspects of its function and interaction with other proteins in scientific literature.
Biological function summary	MCM2 is part of the heterohexameric MCM complex including other proteins like MCM3 to MCM7. This complex serves as a helicase unwinding DNA to allow replication machinery access to the template strand. The activity of the MCM complex is tightly regulated to ensure that every section of genomic DNA is

	replicated once per cell cycle. Its proper function ensures genetic information replication accuracy and contributes to genome stability.
Pathways	MCM2 participates in essential biological processes such as the DNA replication pathway and the cell cycle regulatory pathway. The presence of MCM2 is critical for the G1/S transition phase of the cell cycle. It interacts with other proteins including CDC45 and GINS forming the active CMG helicase complex. This complex is pivotal in orchestrating the replication machinery and signaling pathway responses to ensure appropriate replication origin firing and accurate DNA synthesis.
Associated diseases and disorders	MCM2 is often associated with cancer and some types of genomic instability disorders. Its overexpression can lead to uncontrolled cell proliferation a hallmark of cancer. MCM2 expression levels can be a marker in distinguishing certain tumors acting as a potential therapeutic target. The protein's interaction with components like cyclin-dependent kinases (CDKs) can influence pathways leading to malignant transformation and suggests its involvement in tumorigenesis and potential as a target for anticuerpos or antibodies in disease treatment.

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

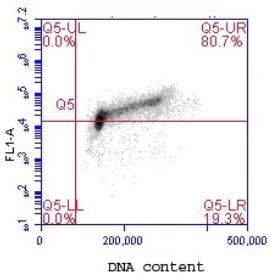
We do not recommend this combination. It is not covered by our product promise.

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.

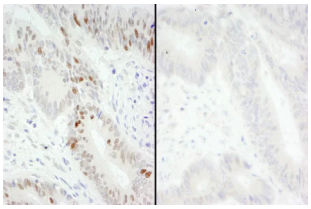
3 product images



Flow Cytometry (Intracellular) - Anti-MCM2 (phospho S40 + S41) antibody (ab70371)

MCM2 (phospho S40 + S41) Flow Cytometry (Intracellular) staining using rabbit Anti-MCM2 (phospho S40 + S41) antibody

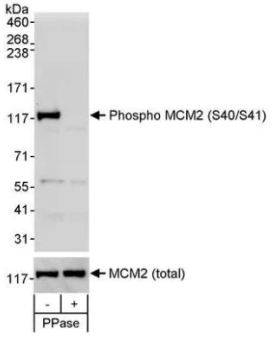
ab70371 at 0.1µg/ml staining MCM2 (phospho S40 + S41) by Flow Cytometery. $1x10^6$ jurkat cells were fixed in 1.5% PFA and permeabilized in 90% MeOH. DNA content was simultaneously analyzed via PI stain.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MCM2 (phospho S40 + S41) antibody (ab70371)

MCM2 (phospho S40 + S41) Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-MCM2 (phospho S40 + S41) antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human colon carcinoma mock phosphatase treated section (left) and calf intestinal phosphatase-treated section (right) tissues labelling MCM2 (phospho S40 + S41) with ab70371 at 1/200 (1µg/ml). Detection: DAB.



Western blot - Anti-MCM2 (phospho S40 + S41) antibody (ab70371)

The bottom panel shows total MCM2 staining; the blot was stripped and then blotted with rabbit anti-total MCM2 antibody at 0.1 µg/ml. Detection: Chemiluminescence with exposure times of 30 seconds for upper and lower panel.
All lanes:
Western blot - Anti-MCM2 (phospho S40 + S41) antibody (ab70371) at 0.1 µg/mL

Lane 1:
Whole cell lysate from asynchronous 293T cells at 50 µg

Lane 2:
Whole cell lysate from asynchronous 293T cells treated with a phosphatase at 50 µg

Predicted band size: 102 kDa

Observed band size: 117 kDa, 60 kDa

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