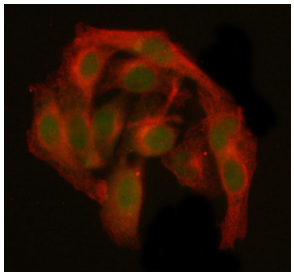
# MCM3AP Antibody / Minichromosome maintenance complex-binding protein 3-associated protein (FY12965)

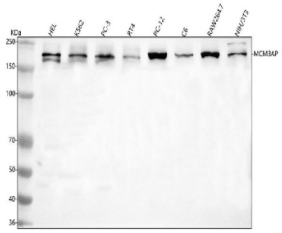
| Catalog No. | Formulation | Size |
|---|---|---|
| FY12965 | Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml | 100 ug |

**Bulk quote request**

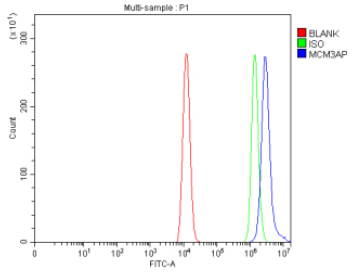
| | |
|---|---|
| **Availability** | 1-2 days |
| **Species Reactivity** | Human, Mouse, Rat |
| **Format** | Lyophilized |
| **Host** | Rabbit |
| **Clonality** | Polyclonal (rabbit origin) |
| **Isotype** | Rabbit IgG |
| **Purity** | Immunogen affinity purified |
| **Buffer** | Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4. |
| **UniProt** | O60318 |
| **Localization** | Nuclear, cytoplasmic |
| **Applications** | Western Blot : 0.25-0.5ug/ml<br>Immunocytochemistry : 5ug/ml<br>Immunofluorescence : 5ug/ml<br>Flow Cytometry : 1-3ug/million cells<br>ELISA : 0.1-0.5ug/ml |
| **Limitations** | This MCM3AP antibody is available for research use only. |



Immunofluorescent staining of GANP/MCM3AP using anti-MCM3AP antibody (green) and anti-Beta Tubulin antibody (red). GANP/MCM3AP was detected in immunocytochemical section of HELA cell. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/ml rabbit anti-MCM3AP antibody and mouse anti-Beta Tubulin antibody overnight at 4oC. DyLight 488 Conjugated Goat Anti-Rabbit IgG and Cy3 Conjugated Goat Anti-Mouse IgG were used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37oC. Visualize using a fluorescence microscope and filter sets appropriate for the label used.



Western blot analysis of GANP/MCM3AP using anti-MCM3AP antibody. Lane 1: human HEL whole cell lysates, Lane 2: human K562 whole cell lysates, Lane 3: human PC-3 whole cell lysates, Lane 4: human RT4 whole cell lysates, Lane 5: rat PC-12 whole cell lysates, Lane 6: rat C6 whole cell lysates, Lane 7: mouse RAW264.7 whole cell lysates, Lane 8: mouse NIH/3T3 whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-MCM3AP antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using enhanced chemiluminescent. A specific band was detected for GANP/MCM3AP at approximately 218 kDa. The expected molecular weight of GANP/MCM3AP is at 218 kDa.




Flow Cytometry analysis of HEL cells using anti-MCM3AP antibody. Overlay histogram showing HEL cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-MCM3AP antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample (Red line) was also used as a control.

## Description

MCM3AP antibody detects Minichromosome maintenance complex-binding protein 3-associated protein, a nuclear factor involved in DNA replication regulation, chromatin modification, and mRNA export. The UniProt recommended name is Minichromosome maintenance complex-binding protein 3-associated protein (MCM3AP), also known as germinal-center associated nuclear protein (GANP). MCM3AP is an important component of the TREX-2 complex, linking transcription to mRNA processing and nuclear export while influencing genomic stability.

Functionally, MCM3AP antibody identifies a 200 kDa protein that interacts with the MCM3 subunit of the MCM helicase complex, which is essential for DNA replication initiation. MCM3AP acts as a replication checkpoint regulator, controlling helicase loading and preventing aberrant origin firing. Beyond replication, MCM3AP functions as a scaffold protein that anchors mRNA export factors to nuclear pore complexes through its association with ENY2 and PCID2. This dual involvement in DNA synthesis and mRNA trafficking underscores its central role in coordinating gene expression and genome maintenance.

The MCM3AP gene is located on chromosome 21q22.3 and encodes a large multidomain protein containing a histone acetyltransferase (HAT)-like region and a nuclear localization signal. The HAT-like domain acetylates replication factors, including MCM3, thereby modulating their chromatin association. MCM3AP also contributes to immunoglobulin gene hypermutation in germinal center B cells, reflecting its role in transcription-coupled mutagenesis. Its expression is elevated in proliferating lymphocytes, embryonic cells, and cancer tissues, where it supports rapid DNA replication and transcriptional activity.

In addition to its nuclear functions, MCM3AP has been implicated in mRNA surveillance and export. Through the TREX-2 complex, it connects RNA polymerase II transcription sites to nuclear pore channels, facilitating efficient export of mature mRNA to the cytoplasm. Loss of MCM3AP disrupts mRNA export, leading to nuclear accumulation of transcripts and impaired protein synthesis. Knockdown studies demonstrate that MCM3AP depletion results in DNA replication stress, S-phase arrest, and genomic instability.

MCM3AP antibody is widely used in research investigating DNA replication control, mRNA processing, and chromatin dynamics. Applications include western blotting, chromatin immunoprecipitation (ChIP), and confocal microscopy to

analyze nuclear localization and replication factor interactions. In cancer studies, MCM3AP is explored as a potential biomarker of proliferation and genome integrity. It has been shown to enhance cell cycle progression and influence gene expression programs that support tumor growth and immune function.

Structurally, MCM3AP contains coiled-coil and zinc finger domains that mediate protein-protein interactions within the replication machinery and nuclear pore complexes. Post-translational modifications such as phosphorylation and acetylation regulate its activity during different cell cycle phases. NSJ Bioreagents provides MCM3AP antibody reagents validated for use in replication biology, epigenetics, and RNA export studies.

## Application Notes

Optimal dilution of the MCM3AP antibody should be determined by the researcher.

## Immunogen

E.coli-derived human GANP/MCM3AP recombinant protein (Position: R1275-H1715) was used as the immunogen for the MCM3AP antibody.

## Storage

After reconstitution, the MCM3AP antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.