

**Anti-MCM2 Antibody Picoband™ (monoclonal, 11C4)**  
Catalog # ABO14965**Specification****Anti-MCM2 Antibody Picoband™ (monoclonal, 11C4) - Product Information**

Application	WB, IHC, IF, ICC, FC
Primary Accession	<a href="#">P49736</a>
Host	Mouse
Isotype	Mouse IgG1
Reactivity	Human
Clonality	Monoclonal
Format	Lyophilized

**Description**

Anti-MCM2 Antibody Picoband™ (monoclonal, 11C4) . Tested in Flow Cytometry, IF, IHC, ICC, WB applications. This antibody reacts with Human.

**Reconstitution**

Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

**Anti-MCM2 Antibody Picoband™ (monoclonal, 11C4) - Additional Information**

**Gene ID** 4171

**Other Names**

DNA replication licensing factor MCM2, 3.6.4.12, Minichromosome maintenance protein 2 homolog, Nuclear protein BM28, MCM2 ([HGNC:6944](http://www.genenames.org/cgi-bin/gene_symbol_report?hgnc_id=6944))

**Calculated MW**

125 kDa KDa

**Application Details**

Western blot, 0.1-0.5 µg/ml, Human, Monkey  
Immunohistochemistry (Paraffin-embedded Section), 0.5-1 µg/ml, Human  
Immunocytochemistry/Immunofluorescence, 4 µg/ml, Human  
Flow Cytometry, 1-3 µg/1x10<sup>6</sup> cells, Human

**Contents**

Each vial contains 4mg Trehalose, 0.9mg NaCl, 0.2mg Na<sub>2</sub>HPO<sub>4</sub>, 0.01mg NaN<sub>3</sub>.

**Immunogen**

E.coli-derived human MCM2 recombinant protein (Position: S393-R850).

**Purification**

Immunogen affinity purified.

**Storage**

**Store at -20°C for one year from date of receipt. After reconstitution, at 4°C for one month. It can also be aliquotted and stored**

frozen at -20°C for six months. Avoid repeated freeze-thaw cycles.

## Anti-MCM2 Antibody Picoband™ (monoclonal, 11C4) - Protein Information

Name MCM2 ([HGNC:6944](#))

### 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:<a href="http://www.uniprot.org/citations/32453425" target="\_blank">32453425</a>, PubMed:<a href="http://www.uniprot.org/citations/34694004" target="\_blank">34694004</a>, PubMed:<a href="http://www.uniprot.org/citations/34700328" target="\_blank">34700328</a>, PubMed:<a href="http://www.uniprot.org/citations/35585232" target="\_blank">35585232</a>). 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:<a href="http://www.uniprot.org/citations/32453425" target="\_blank">32453425</a>). Required for the entry in S phase and for cell division (PubMed:<a href="http://www.uniprot.org/citations/8175912" target="\_blank">8175912</a>). Plays a role in terminally differentiated hair cells development of the cochlea and induces cells apoptosis (PubMed:<a href="http://www.uniprot.org/citations/26196677" target="\_blank">26196677</a>).

### Cellular Location

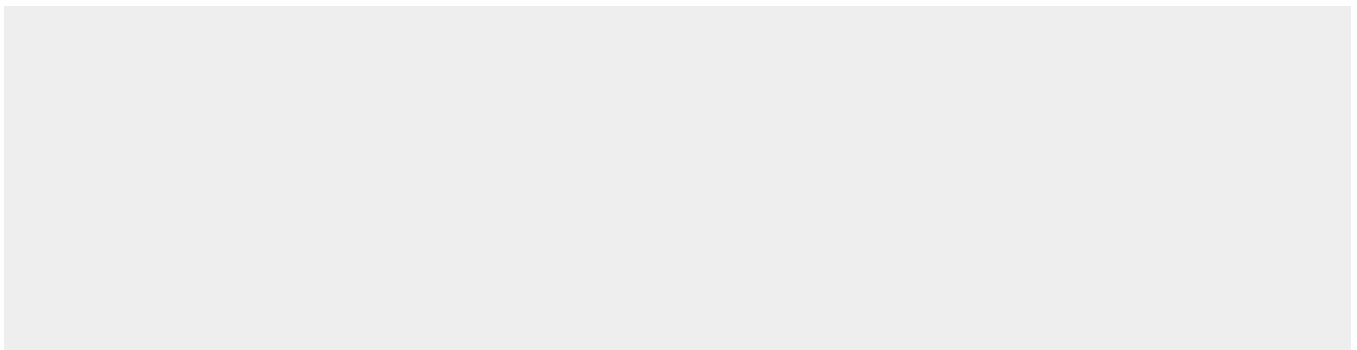
Nucleus. Chromosome. Note=Associated with chromatin before the formation of nuclei and detaches from it as DNA replication progresses. {ECO:0000250|UniProtKB:P55861}

## Anti-MCM2 Antibody Picoband™ (monoclonal, 11C4) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

## Anti-MCM2 Antibody Picoband™ (monoclonal, 11C4) - Images



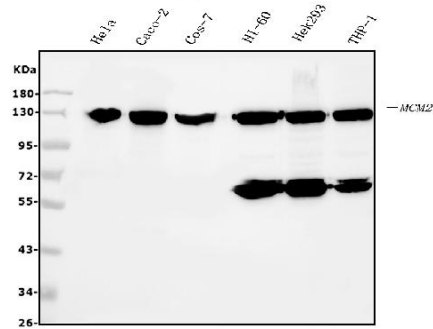


Figure 1. Western blot analysis of MCM2 using anti-MCM2 antibody (M00374-1).

Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 50ug of sample under reducing conditions.

- Lane 1: human Hela whole cell lysates,
- Lane 2: human CACO-2 whole cell lysates,
- Lane 3: monkey COS-7 whole cell lysates,
- Lane 4: human HL-60 whole cell lysates,
- Lane 5: human HEK293 whole cell lysates,
- Lane 6: human THP-1 whole cell lysates.

After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA for 50-90 minutes. Blocked the membrane with 5% Non-fat Milk/ TBS for 1.5 hour at RT. The membrane was incubated with mouse anti-MCM2 antigen affinity purified monoclonal antibody (Catalog # M00374-1) at 0.5 µg/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-mouse IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1001) with Tanon 5200 system. A specific band was detected for MCM2 at approximately 125KD. The expected band size for MCM2 is at 125KD.

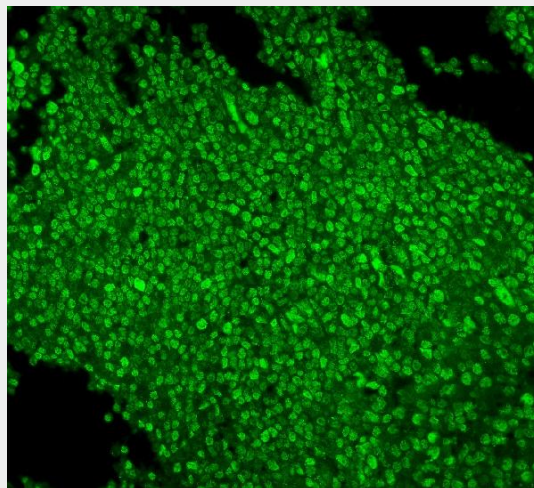


Figure 2. IF analysis of MCM2 using anti-MCM2 antibody (M00374-1).

MCM2 was detected in paraffin-embedded section of human tonsil tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 4 µg/mL mouse anti-MCM2 Antibody (M00374-1) overnight at 4°C. Biotin conjugated goat anti-mouse IgG (BA1001) was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using DyLight®488 Conjugated Avidin (BA1128). The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.

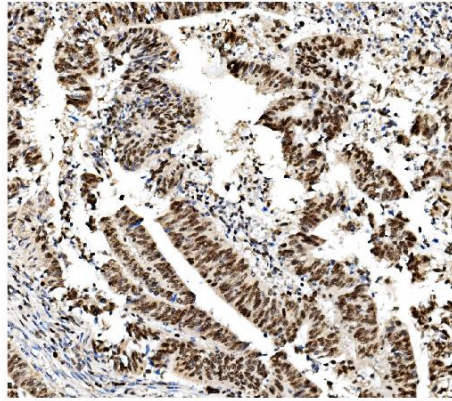


Figure 3. IHC analysis of MCM2 using anti-MCM2 antibody (M00374-1).

MCM2 was detected in paraffin-embedded section of human rectal cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1  $\mu$ g/ml mouse anti-MCM2 Antibody (M00374-1) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Streptavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

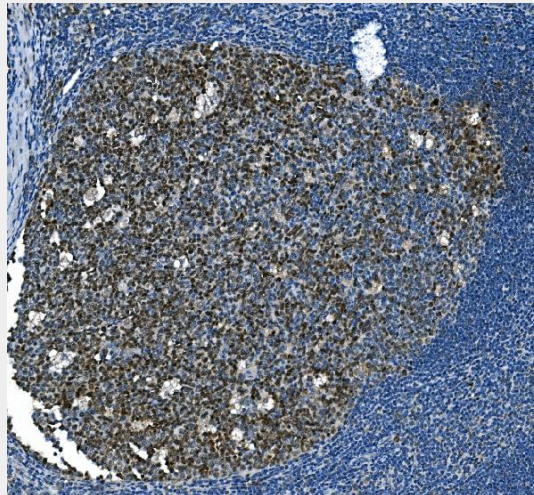


Figure 4. IHC analysis of MCM2 using anti-MCM2 antibody (M00374-1).

MCM2 was detected in paraffin-embedded section of human tonsil tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1  $\mu$ g/ml mouse anti-MCM2 Antibody (M00374-1) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Streptavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

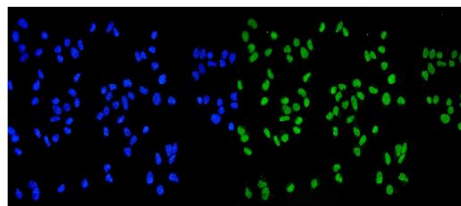


Figure 5. IF analysis of MCM2 using anti-MCM2 antibody (M00374-1).

MCM2 was detected in immunocytochemical section of Hela cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent (AR0022) for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 4 µg/mL mouse anti-MCM2 Antibody (M00374-1) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Mouse IgG (BA1126) was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.

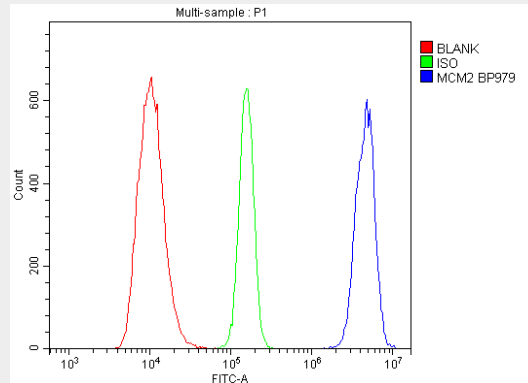


Figure 6. Flow Cytometry analysis of HL-60 cells using anti-MCM2 antibody (M00374-1).

Overlay histogram showing HL-60 cells stained with M00374-1 (Blue line). The cells were blocked with 10% normal goat serum. And then incubated with mouse anti-MCM2 Antibody (M00374-1, 1 µg/1x10<sup>6</sup> cells) for 30 min at 20°C. DyLight®488 conjugated goat anti-mouse IgG (BA1126, 5-10 µg/1x10<sup>6</sup> cells) was used as secondary antibody for 30 minutes at 20°C. Isotype control antibody (Green line) was mouse IgG (1 µg/1x10<sup>6</sup>) used under the same conditions. Unlabelled sample (Red line) was also used as a control.

### Anti-MCM2 Antibody Picoband™ (monoclonal, 11C4) - Background

MCM2 (MINICHROMOSOME MAINTENANCE, S. CEREVISIAE, HOMOLOG OF, 2), also known as MITOTIN, CDCL1 or BM28, is a human nuclear protein that plays an important role in 2 crucial steps of the cell cycle, namely, onset of DNA replication and cell division. And it is similar to members of the family of early S-phase proteins. The MCM2 gene is mapped to 3q21.3. The hexameric protein complex formed by MCM proteins is a key component of the pre-replication complex (pre-RC) and may be involved in the formation of replication forks and in the recruitment of other DNA replication related proteins. In the G<sub>0</sub> stage, the MCM2 and MCM5 proteins were much less abundant than the MCM7 and MCM3 proteins, which suggests that the MCM proteins are not present in stoichiometric amounts and that only a proportion of these molecules actively participate in cell cycle regulation as part of MCM complexes.