#12079 Store at -20°C

# MCM2 (1E7) Mouse mAb

☑ 100 µl
(10 western blots)


Cell Signaling TECHNOLOGY®

**Orders** ■ 877-616-CELL (2355)
orders@cellsignal.com
**Support** ■ 877-678-TECH (8324)
info@cellsignal.com
**Web** ■ www.cellsignal.com



New 02/13


**For Research Use Only. Not For Use In Diagnostic Procedures.**

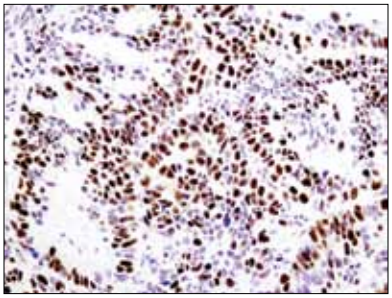
**Entrez-Gene ID** #4171
**Swiss-Prot Acc.** #P49736

| Applications | Species Cross-Reactivity* | Molecular Wt. | Isotype |
|---|---|---|---|
| W, IP, IHC-P, IF-IC | H, Mk | 125 kDa | Mouse IgG1** |
| Endogenous | | | |

**Background:** The minichromosome maintenance (MCM) 2-7 proteins are a family of six related proteins required for initiation and elongation of DNA replication. MCM2-7 bind together to form the heterohexameric MCM complex that is thought to act as a replicative helicase at the DNA replication fork (1-5). This complex is a key component of the pre-replication complex (pre-RC) (reviewed in 1). Cdc6 and CDT1 recruit the MCM complex to the origin recognition complex (ORC) during late mitosis/early G1 phase forming the pre-RC and licensing the DNA for replication (reviewed in 2). Licensing of the chromatin permits the DNA to replicate only once per cell cycle, thereby helping to ensure that genetic alterations and malignant cell growth do not occur (reviewed in 3). Phosphorylation of the MCM2, MCM3, MCM4, and MCM6 subunits appears to regulate MCM complex activity and the initiation of DNA synthesis (6-8). MCM proteins are removed during DNA replication, causing chromatin to become unlicensed through inhibition of pre-RC reformation. Studies have shown that the MCM complex is involved in checkpoint control by protecting the structure of the replication fork and assisting in restarting replication by recruiting checkpoint proteins after arrest (reviewed in 3,9).

**Specificity/Sensitivity:** MCM2 (1E7) Mouse mAb recognizes endogenous levels of total MCM2 protein.

**Source/Purification:** Monoclonal antibody is produced by immunizing animals with recombinant protein specific to the amino terminus of human MCM2 protein.



*Immunohistochemical analysis of paraffin-embedded human lung carcinoma using MCM2 (1E7) Mouse mAb.*

**Storage:** Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. *Do not aliquot the antibody.*

***Species cross-reactivity is determined by western blot.**

****Anti-mouse secondary antibodies must be used to detect this antibody.**

**Recommended Antibody Dilutions:**

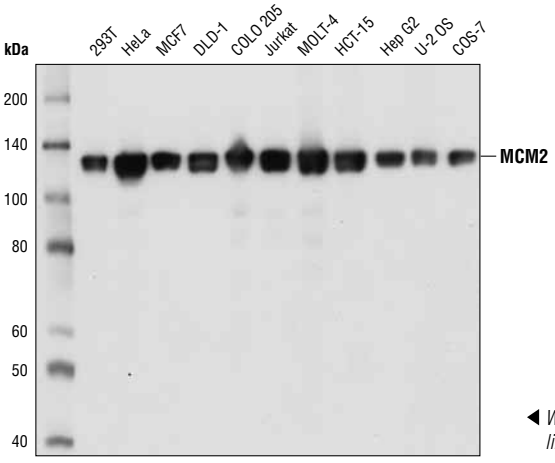
| | |
|---|---|
| Western blotting | 1:1000 |
| Immunoprecipitation | 1:200 |
| Immunohistochemistry (Paraffin) | 1:400† |
| Unmasking buffer: | Citrate |
| Antibody diluent: | SignalStain® Antibody Diluent #8112 |
| Detection reagent: | SignalStain® Boost (HRP, Mouse) #8125 |

†*Optimal IHC dilutions determined using SignalStain® Boost IHC Detection Reagent.*

| | |
|---|---|
| Immunofluorescence (IF-IC) | 1:200 |

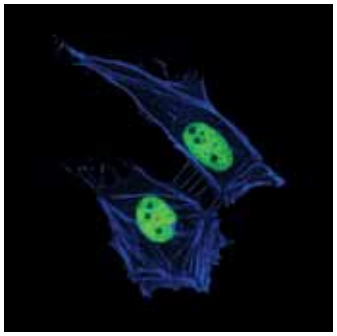
**For product specific protocols please see the web page for this product at www.cellsignal.com.**

**Please visit www.cellsignal.com for a complete listing of recommended complementary products.**




◀ *Western blot analysis of extracts from various cell lines using MCM2 (1E7) Mouse mAb.*

**HeLa**

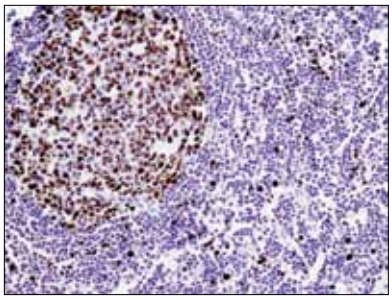


*Confocal immunofluorescent analysis of HeLa cells using MCM2 (1E7) Mouse mAb (green) and β-Actin (13E5) Rabbit mAb (Alexa Fluor® 647 Conjugate) #8584.*

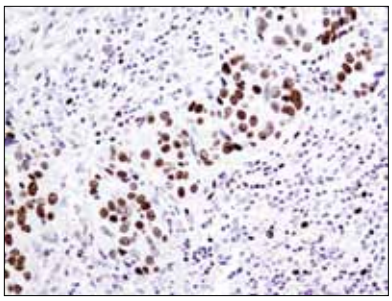
**IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.**

Alexa Fluor® is a registered trademark of Molecular Probes, Inc.

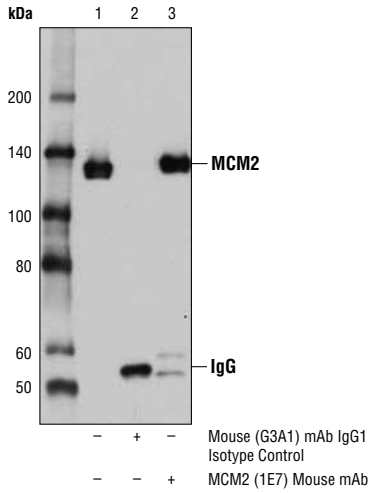
**Applications Key:** **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide
**Species Cross-Reactivity Key:** **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.



*Immunohistochemical analysis of paraffin-embedded human lymph node using MCM2 (1E7) Mouse mAb.*



*Immunohistochemical analysis of paraffin-embedded human ovarian carcinoma using MCM2 (1E7) Mouse mAb.*




*Immunoprecipitation of MCM2 from Jurkat cell extracts using Mouse (G3A1) mAb IgG1 Isotype Control #5415 (lane 2) or MCM2 (1E7) Mouse mAb (lane 3). Lane 1 is 10% input. Western blot analysis was performed using MCM2 (1E7) Mouse mAb.*

**Background References:**


(1) Lei, M. and Tye, B.K. (2001) *J Cell Sci* 114, 1447-54.

(2) Lygerou, Z. and Nurse, P. (2000) *Science* 290, 2271-3.

(3) Forsburg, S.L. (2004) *Microbiol Mol Biol Rev* 68, 109-31.

(4) Tye, B.K. and Sawyer, S. (2000) *J Biol Chem* 275, 34833-6.

(5) Labib, K. et al. (2000) *Science* 288, 1643-7.

(6) Charych, D.H. et al. (2008) *J Cell Biochem* 104, 1075-86.

(7) Masai, H. et al. (2006) *J Biol Chem* 281, 39249-61.

(8) Lin, D.I. et al. (2008) *Proc Natl Acad Sci USA* 105, 8079-84.

(9) Bailis, J.M. et al. (2008) *Mol Cell Biol* 28, 1724-38.