

#4012 Store at -20°C

MCM3 Antibody

✓ 100 µl
(10 Western mini-blots)



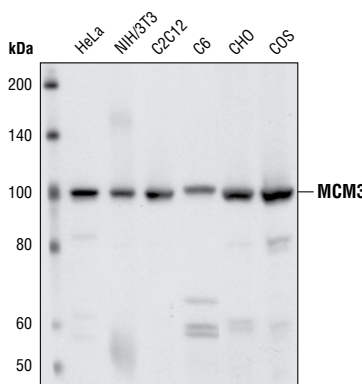
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This product is for *in vitro* research use only and is not intended for use in humans or animals.
This product is not intended for use as a therapeutic or in diagnostic procedures.

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W, IP, IHC-P, IF-IC Endogenous	H, M, R, Mk, Hm	100 kDa	Rabbit**

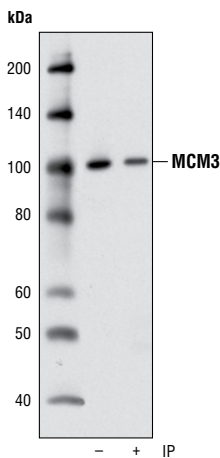
Background: The minichromosome maintenance (MCM) 2-7 proteins are a family of six related proteins required for the initiation and elongation of DNA replication. MCM2 through MCM7 bind together to form the heterohexameric MCM complex that is thought to act as a replicative helicase at the DNA replication fork (1-5). This complex is also 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). Phosphorylation of the MCM2, MCM3, MCM4 and MCM6 subunits has been reported to regulate the activity of the MCM complex and initiation of DNA synthesis (6-8). As the DNA replicates the MCM proteins are removed, causing chromatin to become unlicensed through inhibition of pre-RC reformation. It is the licensing of the chromatin that permits the DNA to replicate only once per cell cycle, helping to ensure that genetic alterations and malignant cell growth do not occur (reviewed in 3). Studies have also 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).



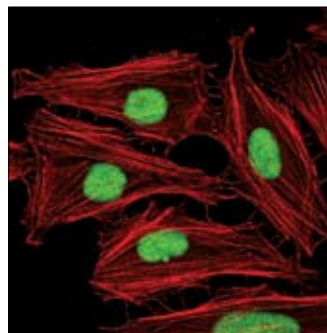
Western blot analysis of extracts from various cell types using MCM3 Antibody.

Specificity/Sensitivity: MCM3 Antibody detects endogenous levels of total MCM3 protein.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide (KLH-coupled) corresponding to residues near the amino-terminus of human MCM3. Antibodies are purified by protein A and peptide affinity chromatography.



Immunoprecipitation of MCM3 from HeLa cell lysates using MCM3 Antibody followed by Western blot using the same antibody. Lane 1 is 5% input.



Confocal immunofluorescent analysis of HeLa cells using MCM3 Antibody (green). Actin filaments have been labeled with DY-554 phalloidin (red).

Entrez-Gene ID #959
Swiss-Prot Acc. #P29965

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

*Species cross-reactivity is determined by Western blot.

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

Recommended Antibody Dilutions:

Western blotting	1:1000
Immunoprecipitation	1:50
Immunofluorescence (IF-IC)	1:200
Immunohistochemistry (Paraffin)	1:50

IHC protocol: Unmasking buffer/Antibody diluent Citrate/ SignalStain® Antibody Diluent #8112

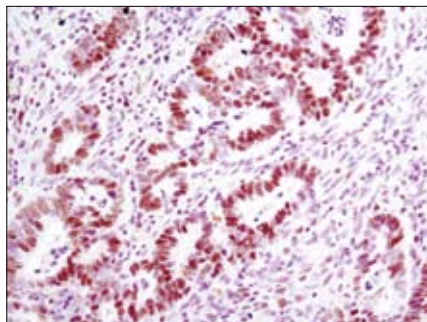
For application specific protocols please see the web page for this product at www.cellsignaling.com.

Companion Products:

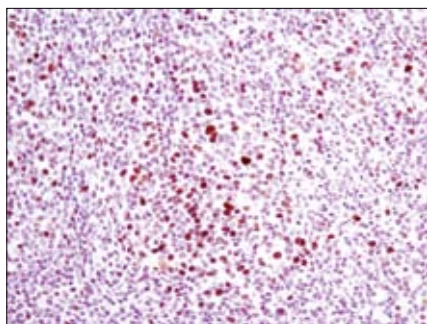
- ORC1 (7A7) Rat mAb #4731
- ORC2 (3G6) Rat mAb #4736
- ORC6 (3A4) Rat mAb #4737
- RPA32 (4E4) Rat mAb #2208
- RPA70 (C24F2) Rabbit mAb #2193
- RPA70 Antibody #2267
- RPA70 (4D9) Rat mAb #2198
- Phototope®-HRP Western Blot Detection System, Anti-rabbit IgG, HRP-linked Antibody #7071
- Anti-rabbit IgG, HRP-linked Antibody #7074
- Prestained Protein Marker, Broad Range (Premixed Format) #7720
- Biotinylated Protein Ladder Detection Pack #7727
- 20X LumiGLO® Reagent and 20X Peroxide #7003

Please visit www.cellsignaling.com for a complete listing of recommended companion products.

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



Immunohistochemical analysis of paraffin-embedded human colon carcinoma using MCM3 Antibody.



Immunohistochemical analysis of paraffin-embedded human non-Hodgkin's lymphoma using MCM3 Antibody.

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.