

MCM7 (V-17): sc-9794

BACKGROUND

The mini-chromosome maintenance (MCM) family of proteins, including MCM2, MCM3, MCM4 (Cdc21), MCM5 (Cdc46), MCM6 (Mis5) and MCM7 (Cdc47), are regulators of DNA replication that act to ensure replication occurs only once in the cell cycle. Expression of MCM proteins increases during cell growth, peaking at G₁ to S phase. The MCM proteins each contain an ATP-binding motif, which is predicted to mediate ATP-dependent opening of double-stranded DNA. MCM proteins are regulated by E2F transcription factors, which induce MCM expression, and by protein kinases, which interact with MCM proteins to maintain the postreplicative state of the cell. MCM2/MCM4 complexes function as substrates for Cdc2/cyclin B *in vitro*. Cleavage of MCM3, which can be prevented by caspase inhibitors, results in the inactivation during apoptosis of the MCM complex, which is composed of, at least, MCM2-6. A complex composed of MCM4, MCM6 and MCM7 has been shown to be involved in DNA helicase activity; and MCM5 is involved in IFN- γ -induced Stat1 α transcription activation.

REFERENCES

1. Koonin, E.V. 1993. A common set of conserved motifs in a vast variety of putative nucleic acid-dependent ATPases including MCM proteins involved in the initiation of eukaryotic DNA replication. *Nucleic Acids Res.* 21: 2541-2547.
2. Ishimi, Y. 1997. A DNA helicase activity is associated with an MCM4, -6, and -7 protein complex. *J. Biol. Chem.* 272: 24508-24513.
3. Coverley, D., et al. 1998. Protein kinase inhibition in G₂ causes mammalian MCM proteins to reassociate with chromatin and restores ability to replicate. *Exp. Cell Res.* 238: 63-69.

CHROMOSOMAL LOCATION

Genetic locus: MCM7 (human) mapping to 7q22.1; Mcm7 (mouse) mapping to 5 G2.

SOURCE

MCM7 (V-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of MCM7 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-9794 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

Store at 4 $^{\circ}$ C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

APPLICATIONS

MCM7 (V-17) is recommended for detection of MCM7 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

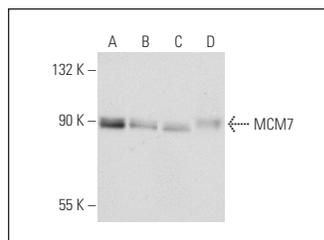
MCM7 (V-17) is also recommended for detection of MCM7 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for MCM7 siRNA (h): sc-35887, MCM7 siRNA (m): sc-35888, MCM7 shRNA Plasmid (h): sc-35887-SH, MCM7 shRNA Plasmid (m): sc-35888-SH, MCM7 shRNA (h) Lentiviral Particles: sc-35887-V and MCM7 shRNA (m) Lentiviral Particles: sc-35888-V.

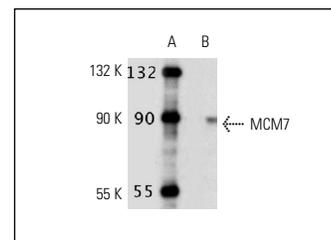
Molecular Weight of MCM7: 88 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, COLO 320DM cell lysate: sc-2226 or A-431 + PMA cell lysate: sc-2261.

DATA



MCM7 (V-17): sc-9794. Western blot analysis of MCM7 expression in COLO 320DM (A), H4 (B) and HeLa (C) whole cell lysates and mouse thymus tissue extract (D).



MCM7 (V-17): sc-9794. Western blot analysis of MCM7 expression in untreated (A) and PMA-treated (B) A-431 whole cell lysates.

SELECT PRODUCT CITATIONS

1. Johnson, E.M., et al. 2003. A new member of the MCM protein family encoded by the human MCM8 gene, located contrapodal to GCD10 at chromosome band 20p12.3-13. *Nucleic Acids Res.* 31: 2915-2925.
2. Ballabeni, A., et al. 2009. Human CDT1 associates with Cdc7 and recruits Cdc45 to chromatin during S phase. *J. Biol. Chem.* 284: 3028-3036.

RESEARCH USE

For research use only, not for use in diagnostic procedures.


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