

MCM9 (H-43): sc-99039

BACKGROUND

The mini-chromosome maintenance (MCM) family of proteins include MCM2, MCM3, MCM4 (Cdc21), MCM5 (Cdc46), MCM6 (Mis5), MCM7 (Cdc47), MCM8, MCM9 and MCM10 (Dna43). The proteins in this family 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. MCM proteins are crucial components of the pre-replication complex (pre-RC) and are involved in replication fork formation and the recruitment of other DNA replication proteins. 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 post-replicative state of the cell.

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. Fujita, M., Yamada, C., Tsurumi, T., Hanaoka, F., Matsuzawa, K. and Inagaki, M. 1998. Cell cycle- and chromatin binding state-dependent phosphorylation of human MCM heterohexameric complexes. A role for Cdc2 kinase. *J. Biol. Chem.* 273: 17095-17101.
3. Leone, G., DeGregori, J., Yan, Z., Jakoi, L., Ishida, S., Williams, R.S. and Nevins, J.R. 1998. E2F-3 activity is regulated during the cell cycle and is required for the induction of S phase. *Genes Dev.* 12: 2120-2130.
4. Coverley, D., Wilkinson, H.R., Madine, M.A., Mills, A.D. and Laskey, R.A. 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.
5. Lutzmann, M., Maiorano, D. and Méchali, M. 2005. Identification of full genes and proteins of MCM9, a novel, vertebrate-specific member of the MCM2-8 protein family. *Gene* 362: 51-56.
6. Yoshida, K. 2005. Identification of a novel cell-cycle-induced MCM family protein MCM9. *Biochem. Biophys. Res. Commun.* 331: 669-674.

CHROMOSOMAL LOCATION

Genetic locus: MCM9 (human) mapping to 6q22.31; Mcm9 (mouse) mapping to 10 B3.

SOURCE

MCM9 (H-43) is a rabbit polyclonal antibody raised against amino acids 91-133 mapping near the N-terminus of MCM9 of human origin.

PRODUCT

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

APPLICATIONS

MCM9 (H-43) is recommended for detection of MCM9 isoforms 1 and 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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).

MCM9 (H-43) is also recommended for detection of MCM9 isoforms 1 and 2 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for MCM9 siRNA (h): sc-61004, MCM9 siRNA (m): sc-61005, MCM9 shRNA Plasmid (h): sc-61004-SH, MCM9 shRNA Plasmid (m): sc-61005-SH, MCM9 shRNA (h) Lentiviral Particles: sc-61004-V and MCM9 shRNA (m) Lentiviral Particles: sc-61005-V.

Molecular Weight of MCM9 isoforms1/2: 127/44 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

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

PROTOCOLS

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