



MCM10 (C-14): sc-47110

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 postreplicative state of the cell. MCM10 interacts with replication factors and can interact with MCM2 and MCM6.

REFERENCES

- 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.
- Fujita, M., et al. 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.
- Leone, G., et al. 1998. E2F3 activity is regulated during the cell cycle and is required for the induction of S phase. *Genes Dev.* 12: 2120-2130.
- 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.
- Ricke R.M., et al. 2004. MCM10 regulates the stability and chromatin association of DNA polymerase- α . *Mol. Cell* 16: 173-185.
- Yoshida K., et al. 2004. Expression of MCM10 and TopBP1 is regulated by cell proliferation and UV irradiation via the E2F transcription factor. *Oncogene* 23: 6250-6260.
- Izumi M., et al. 2004. Localization of human MCM10 is spatially and temporally regulated during the S phase. *J. Biol. Chem.* 279: 32569-32577.

CHROMOSOMAL LOCATION

Genetic locus: MCM10 (human) mapping to 10p13; Mcm10 (mouse) mapping to 2 A1.

SOURCE

MCM10 (C-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of MCM10 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-47110 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MCM10 (C-14) is recommended for detection of MCM10 of human and, to a lesser extent, mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Suitable for use as control antibody for MCM10 siRNA (h): sc-61000.

Molecular Weight of MCM10: 117 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (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.