

MCM8 (K-15): sc-47117



The Power to Question

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. Throughout the cell cycle, MCM8 binds chromatin. MCM8 can interact with Cdc6 and ORC2L.

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.
- Maiorano, D., et al. 2005. MCM8 is an MCM2-7-related protein that functions as a DNA helicase during replication elongation and not initiation. *Cell* 120: 315-328.
- Volkening, M., et al. 2005. Involvement of human MCM8 in prereplication complex assembly by recruiting hcdc6 to chromatin. *Mol. Cell. Biol.* 25: 1560-1568.

CHROMOSOMAL LOCATION

Genetic locus: MCM8 (human) mapping to 20p12.3; Mcm8 (mouse) mapping to 2 F2.

SOURCE

MCM8 (K-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of MCM8 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.

Blocking peptide available for competition studies, sc-47117 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MCM8 (K-15) is recommended for detection of MCM8 of mouse and human 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).

MCM8 (K-15) is also recommended for detection of MCM8 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for MCM8 siRNA (h): sc-61002, MCM8 siRNA (m): sc-61003, MCM8 shRNA Plasmid (h): sc-61002-SH, MCM8 shRNA Plasmid (m): sc-61003-SH, MCM8 shRNA (h) Lentiviral Particles: sc-61002-V and MCM8 shRNA (m) Lentiviral Particles: sc-61003-V.

Molecular Weight of MCM8: 99 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.