SANTA CRUZ BIOTECHNOLOGY, INC.

MCM2 (CRCT2.1): sc-56321

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 G_1 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 of the MCM complex (composed of at least MCM proteins 2-6) during apoptosis. 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 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.

CHROMOSOMAL LOCATION

Genetic locus: MCM2 (human) mapping to 3q21.3.

SOURCE

MCM2 (CRCT2.1) is a mouse monoclonal antibody raised against MCM2 of human origin.

PRODUCT

Each vial contains 250 µl culture supernatant containing IgG_1 with < 0.1% sodium azide.

APPLICATIONS

MCM2 (CRCT2.1) is recommended for detection of MCM2 of human origin by Western Blotting (starting dilution to be determined by researcher, dilution range), immunoprecipitation [1-2 µl per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution to be determined by researcher, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution to be determined by researcher, dilution range 1:50-1:500).

Suitable for use as control antibody for MCM2 siRNA (h): sc-35879, MCM2 shRNA Plasmid (h): sc-35879-SH and MCM2 shRNA (h) Lentiviral Particles: sc-35879-V.

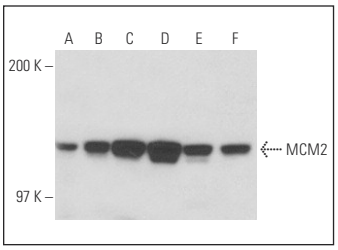
Molecular Weight of MCM2: 130 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, MEG-01 nuclear extract: sc-2150 or CCRF-CEM nuclear extract: sc-2146.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

DATA



MCM2 (CRCT2.1): sc-56321. Western blot analysis of MCM2 expression in HeLa (**A**), MEG-01 (**B**), CCRF-CEM (**C**), MOLT-4 (**D**), Ramos (**E**) and DU 145 (**F**) nuclear extracts.

SELECT PRODUCT CITATIONS

1. Nicolas, A., et al. 2010. Identification of rep-associated factors in herpes simplex virus type 1-induced adeno-associated virus type 2 replication compartments. J. Virol. 84: 8871-8887.
2. Low, V.F., et al. 2011. No change in progenitor cell proliferation in the hippocampus in Huntington's disease. Neuroscience 199: 577-588.
3. Nowinska, K., et al. 2016. Correlation between levels of expression of minichromosome maintenance proteins, Ki-67 proliferation antigen and metallothionein I/II in laryngeal squamous cell cancer. Int. J. Oncol. 48: 635-645.

RESEARCH USE

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

PROTOCOLS

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