SANTA CRUZ BIOTECHNOLOGY, INC.

MCM2 (N-19): sc-9839

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 Stat1α transcription activation.

CHROMOSOMAL LOCATION

Genetic locus: MCM2 (human) mapping to 3q21.3; Mcm2 (mouse) mapping to 6 D1.

SOURCE

MCM2 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of MCM2 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-9839 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MCM2 (N-19) is recommended for detection of MCM2 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

MCM2 (N-19) is also recommended for detection of MCM2 in additional species, including equine and porcine.

Suitable for use as control antibody for MCM2 siRNA (h): sc-35879, MCM2 siRNA (m): sc-35880, MCM2 shRNA Plasmid (h): sc-35879-SH, MCM2 shRNA Plasmid (m): sc-35880-SH, MCM2 shRNA (h) Lentiviral Particles: sc-35879-V and MCM2 shRNA (m) Lentiviral Particles: sc-35880-V.

Molecular Weight of MCM2: 130 kDa.

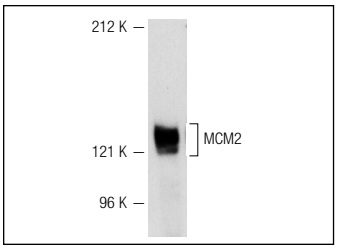
RESEARCH USE

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

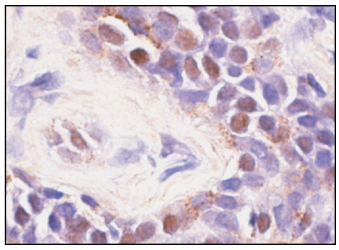
STORAGE

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

DATA



MCM2 (N-19): sc-9839. Western blot analysis of MCM2 expression in HeLa nuclear extract.



MCM2 (N-19): sc-9839. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast tumor showing nuclear staining.

SELECT PRODUCT CITATIONS

1. Dehde, S., et al. 2001. Two immunologically distinct human DNA polymerase α-primase subpopulations are involved in cellular DNA replication. Mol. Cell. Biol. 21: 2581-2593.
2. Kim, B.J., et al. 2006. Importin-β mediates Cdc7 nuclear import by binding to the kinase insert II domain, which can be antagonized by Importin α. J. Biol. Chem. 281: 12041-12049.
3. Kan, Q., et al. 2008. ATP-dependent activation of $p21^{WAF1/CIP1}$-associated Cdk2 by Cdc6. Proc. Natl. Acad. Sci. USA 105: 4757-4762.
4. Iglesias-Ara, A., et al. 2010. Accelerated DNA replication in E2F1- and E2F2-deficient macrophages leads to induction of the DNA damage response and $p21^{CIP1}$-dependent senescence. Oncogene 29: 5579-5590.
5. Zhou, J., et al. 2010. Modulation of the ribonucleotide reductase-antimetabolite drug interaction in cancer cell lines. J. Nucleic Acids 2010: 597098.
6. Izumi, H., et al. 2010. Role of ZNF143 in tumor growth through transcriptional regulation of DNA replication and cell-cycle-associated genes. Cancer Sci. 101: 2538-2545.
7. Ohno, Y., et al. 2010. Hoxb4 transduction down-regulates Geminin protein, providing hematopoietic stem and progenitor cells with proliferation potential. Proc. Natl. Acad. Sci. USA 107: 21529-21534.
8. Wang, C., et al. 2011. Identification and characterization of neuroblasts in the subventricular zone and rostral migratory stream of the adult human brain. Cell Res. 21: 1534-1550.

MONOS Satisfaction Guaranteed

Try **MCM2 (E-8): sc-373702** or **MCM2 (D1.9H5): sc-73572**, our highly recommended monoclonal alternatives to MCM2 (N-19).