SANTA CRUZ BIOTECHNOLOGY, INC.

MCM7 (47DC141): sc-65475

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 post-replicative 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 during apoptosis of the MCM complex, which is composed of, at least, MCM2-6. 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: MCM7 (human) mapping to 7q22.1; Mcm7 (mouse) mapping to 5 G2.

SOURCE

MCM7 (47DC141) is a mouse monoclonal antibody raised against full length MCM7 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

MCM7 (47DC141) is recommended for detection of MCM7 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for MCM7 siRNA (h): sc-35887, MCM7 siRNA (m): sc-35888, MCM7 shRNA Plasmid (h): sc-35887-SH, MCM7 shRNA Plasmid (m): sc-35888-SH, MCM7 shRNA (h) Lentiviral Particles: sc-35887-V and MCM7 shRNA (m) Lentiviral Particles: sc-35888-V.

Molecular Weight of MCM7: 88 kDa.

Positive Controls: MCM7 (h2): 293T Lysate: sc-173959, AMJ2-C8 whole cell lysate: sc-364366 or BC_3H1 cell lysate: sc-2299.

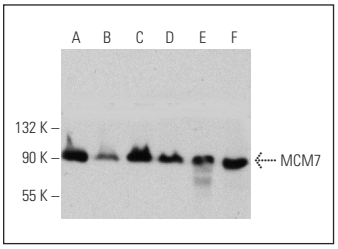
STORAGE

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

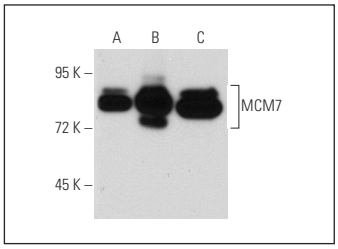
RESEARCH USE

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

DATA



MCM7 (47DC141): sc-65475. Western blot analysis of MCM7 expression in HeLa (**A**), COLO 320DM (**B**), AMJ2-C8 (**C**), BC_3H1 (**D**), C6 (**E**) and L8 (**F**) whole cell lysates.



MCM7 (47DC141): sc-65475. Western blot analysis of MCM7 expression in non-transfected 293T: sc-117752 (**A**), human MCM7 transfected 293T: sc-173959 (**B**) and A-431 (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Okuno, Y., et al. 2001. Stability, chromatin association and functional activity of mammalian pre-replication complex proteins during the cell cycle. EMBO J. 20: 4263-4277.
2. Khalili, K., et al. 2003. Puralpha is essential for postnatal brain development and developmentally coupled cellular proliferation as revealed by genetic inactivation in the mouse. Mol. Cell. Biol. 23: 6857-6875.
3. Angus, S.P., et al. 2004. RB reversibly inhibits DNA replication via two temporally distinct mechanisms. Mol. Cell. Biol. 24: 5404-5420.
4. Yoshida, K., et al. 2004. The destruction box of human Geminin is critical for proliferation and tumor growth in human colon cancer cells. Oncogene 23: 58-70.
5. Thelemann, A., et al. 2005. Phosphotyrosine signaling networks in epidermal growth factor receptor overexpressing squamous carcinoma cells. Mol. Cell. Proteomics 4: 356-376.
6. Tsvetkov, L., et al. 2005. Interaction of Chromatin-associated Plk1 and MCM7. J. Biol. Chem. 280: 11943-11947.

PROTOCOLS

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

CONJUGATES

See **MCM7 (141.2): sc-9966** for MCM7 antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647.