SANTA CRUZ BIOTECHNOLOGY, INC.

MCM7 (47DC141): sc-56324

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 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, human, *Xenopus* and canine 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).

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: A549 cell lysate: sc-2413, BC_3H1 cell lysate: sc-2299 or AMJ2-C8 whole cell lysate: sc-364366.

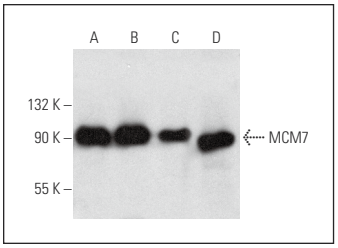
STORAGE

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

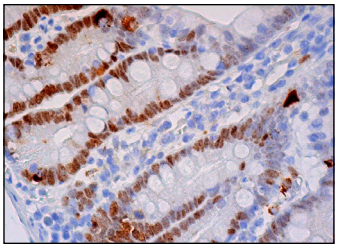
RESEARCH USE

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

DATA



MCM7 (47DC141): sc-56324. Western blot analysis of MCM7 expression in A549 (**A**), AMJ2-C8 (**B**), BC_3H1 (**C**) and L8 (**D**) whole cell lysates.



MCM7 (47DC141): sc-56324. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing nuclear staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Wesierska-Gadek, J., et al. 2008. Signaling of DNA damage is not sufficient to induce p53 response: (re)activation of wt p53 protein strongly depends on cellular context. J. Cell. Biochem. 103: 1607-1620.
2. Reddy, C.E., et al. 2013. Multisite phosphorylation of c-Jun at threonine 91/93/95 triggers the onset of c-Jun pro-apoptotic activity in cerebellar granule neurons. Cell Death Dis. 4: e852.
3. Finkin, S., et al. 2015. Ectopic lymphoid structures function as microniches for tumor progenitor cells in hepatocellular carcinoma. Nat. Immunol. 16: 1235-1244.
4. Samson, A.L., et al. 2016. Physicochemical properties that control protein aggregation also determine whether a protein is retained or released from necrotic cells. Open Biol. 6: 160098.
5. Reynolds, J.J., et al. 2017. Mutations in DONSON disrupt replication fork stability and cause microcephalic dwarfism. Nat. Genet. 49: 537-549.
6. Saxena, S., et al. 2018. XRCC2 regulates replication fork progression during dNTP alterations. Cell Rep. 25: 3273-3282.e6.
7. Mourikis, T.P., et al. 2019. Patient-specific cancer genes contribute to recurrently perturbed pathways and establish therapeutic vulnerabilities in esophageal adenocarcinoma. Nat. Commun. 10: 3101.
8. Ramsauer, A.S., et al. 2019. Paving the way for more precise diagnosis of EcPV2-associated equine penile lesions. BMC Vet. Res. 15: 356.
9. Falbo, L., et al. 2020. SSRP1-mediated Histone H1 eviction promotes replication origin assembly and accelerated development. Nat. Commun. 11: 1345.
10. Pennycook, B.R., et al. 2020. E2F-dependent transcription determines replication capacity and S phase length. Nat. Commun. 11: 3503.

CONJUGATES

See **MCM7 (141.2): sc-9966** for MCM7 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.