SANTA CRUZ BIOTECHNOLOGY, INC.

MCM7 (141.2): sc-9966

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: MCM7 (human) mapping to 7q22.1; Mcm7 (mouse) mapping to 5 G2.

SOURCE

MCM7 (141.2) 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.

MCM7 (141.2) is available conjugated to agarose (sc-9966 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-9966 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-9966 PE), fluorescein (sc-9966 FITC), Alexa Fluor® 488 (sc-9966 AF488), Alexa Fluor® 546 (sc-9966 AF546), Alexa Fluor® 594 (sc-9966 AF594) or Alexa Fluor® 647 (sc-9966 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-9966 AF680) or Alexa Fluor® 790 (sc-9966 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

MCM7 (141.2) 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), 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).

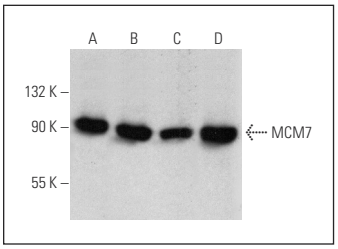
Suitable for use as control antibody for MCM7 siRNA (h): sc-35887, MCM7 siRNA (m): sc-35888, MCM7 shRNA Plasmid (h): sc-35887-SH, MCM7 shRNA Plasmid (m): sc-35888-SH, MCM7 shRNA (h) Lentiviral Particles: sc-35887-V and MCM7 shRNA (m) Lentiviral Particles: sc-35888-V.

Molecular Weight of MCM7: 88 kDa.

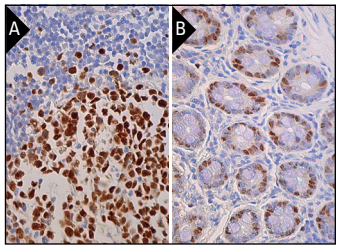
STORAGE

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

DATA



MCM7 (141.2): sc-9966. Western blot analysis of MCM7 expression in HeLa (**A**), AMJ2-C8 (**B**), BC_3H1 (**C**) and L8 (**D**) whole cell lysates.



MCM7 (141.2): sc-9966. Immunoperoxidase staining of formalin fixed, paraffin-embedded human tonsil tissue showing nuclear staining of cells in germinal center (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human colon tissue showing nuclear staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Izumi, M., et al. 2000. Head and/or CaaX domain deletions of Lamin proteins disrupt preformed Lamin A and C but not Lamin B structure in mammalian cells. Mol. Biol. Cell 11: 4323-4337.
2. Löffler, H., et al. 2013. DNA damage-induced centrosome amplification occurs via excessive formation of centriolar satellites. Oncogene 32: 2963-2972.
3. Wu, M., et al. 2014. Geminin inhibits a late step in the formation of human pre-replicative complexes. J. Biol. Chem. 289: 30810-30821.
4. Kanu, N., et al. 2015. SETD2 loss-of-function promotes renal cancer branched evolution through replication stress and impaired DNA repair. Oncogene 34: 5699-5708.
5. Passerini, V., et al. 2016. The presence of extra chromosomes leads to genomic instability. Nat. Commun. 7: 10754.
6. He, D.M., et al. 2017. Oncogenic activity of amplified miniature chromosome maintenance 8 in human malignancies. Oncogene 36: 3629-3639.
7. Hashimoto, Y. and Tanaka, H. 2018. Mitotic entry drives replisome disassembly at stalled replication forks. Biochem. Biophys. Res. Commun. 506: 108-113.
8. Thomas, N.A., et al. 2019. Targeting retinoblastoma protein phosphorylation in combination with EGFR inhibition in pancreatic cancer cells. Int. J. Oncol. 54: 527-536.
9. Prendergast, L., et al. 2020. Histone chaperone FACT is essential to overcome replication stress in mammalian cells. Oncogene 39: 5124-5137.

RESEARCH USE

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

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