SANTA CRUZ BIOTECHNOLOGY, INC.

MCM7 (DCS-141): sc-65469

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 (DCS-141) 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 (DCS-141) 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.

Positive Controls: L8 cell lysate: sc-3807, A-431 whole cell lysate: sc-2201 or HL-60 whole cell lysate: sc-2209.

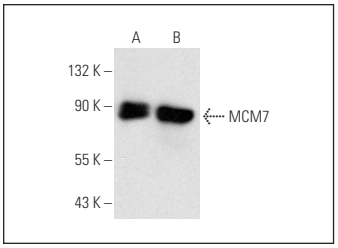
STORAGE

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

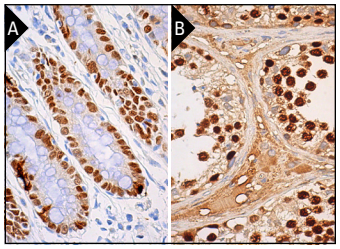
RESEARCH USE

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

DATA



MCM7 (DCS-141): sc-65469. Western blot analysis of MCM7 expression in HL-60 (**A**) and L8 (**B**) whole cell lysates.



MCM7 (DCS-141): sc-65469. Immunoperoxidase staining of formalin fixed, paraffin-embedded human rectum tissue showing nuclear staining of glandular cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing nuclear staining of cells in seminiferous ducts and cytoplasmic staining of Leydig cells (**B**).

SELECT PRODUCT CITATIONS

1. Falck, J., et al. 2002. The DNA damage-dependent intra-S phase checkpoint is regulated by parallel pathways. Nat. Genet. 30: 290-294.
2. Wesierska-Gadek, J., et al. 2011. Reconstitution of human MCF-7 breast cancer cells with caspase-3 does not sensitize them to action of CDK inhibitors. J. Cell. Biochem. 112: 273-288.
3. Larsen, D.H., et al. 2014. The NBS1-Treacle complex controls ribosomal RNA transcription in response to DNA damage. Nat. Cell Biol. 16: 792-803.
4. Hasvold, G., et al. 2016. Hypoxia-induced alterations of G_2 checkpoint regulators. Mol. Oncol. 10: 764-773.
5. Pajalunga, D., et al. 2017. A defective dNTP pool hinders DNA replication in cell cycle-reactivated terminally differentiated muscle cells. Cell Death Differ. 24: 774-784.
6. Hauge, S., et al. 2019. P21 limits S phase DNA damage caused by the Wee1 inhibitor MK1775. Cell Cycle 18: 834-847.
7. Landsverk, H.B., et al. 2020. WDR82/PNUTS-PP1 prevents transcription-replication conflicts by promoting RNA polymerase II degradation on chromatin. Cell Rep. 33: 108469.
8. Park, S., et al. 2021. HIV-1 protease inhibitors slow HPV16-driven cell proliferation through targeted depletion of viral E6 and E7 oncoproteins. Cancers 13: 949.
9. Hong, X., et al. 2022. ITRAQ-based quantitative proteomic analysis reveals that VPS35 promotes the expression of MCM2-7 genes in HeLa cells. Sci. Rep. 12: 9700.

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.