

MCM7 (141.2): sc-9966

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 G₁ 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 Stat1 α 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 μ g IgG₁ 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 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-9966 HRP), 200 μ g/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 μ g/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 μ g/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 μ g per 100-500 μ g 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).

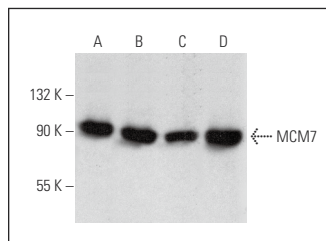
Suitable for use as control antibody for MCM7 siRNA (h): sc-35887, MCM7 siRNA (m): sc-35888, MCM7 shRNA Plasmid (h): sc-35887-SH, MCM7 shRNA Plasmid (m): sc-35888-SH, MCM7 shRNA (h) Lentiviral Particles: sc-35887-V and MCM7 shRNA (m) Lentiviral Particles: sc-35888-V.

Molecular Weight of MCM7: 88 kDa.

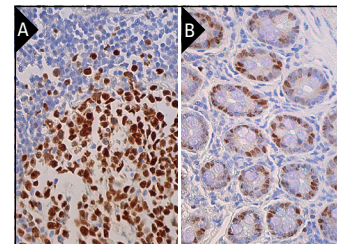
STORAGE

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), BC₃H1 (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

- 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.
- Hashimoto, Y. and Tanaka, H. 2018. Mitotic entry drives replisome disassembly at stalled replication forks. *Biochem. Biophys. Res. Commun.* 506: 108-113.
- 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.
- Prendergast, L., et al. 2020. Histone chaperone FACT is essential to overcome replication stress in mammalian cells. *Oncogene* 39: 5124-5137.
- Knapp, K.M., et al. 2021. MCM complex members MCM3 and MCM7 are associated with a phenotypic spectrum from Meier-Gorlin syndrome to lipodystrophy and adrenal insufficiency. *Eur. J. Hum. Genet.* 29: 1110-1120.
- Takano, J., et al. 2022. PCGF1-PRC1 links chromatin repression with DNA replication during hematopoietic cell lineage commitment. *Nat. Commun.* 13: 7159.
- Santos, L.C., et al. 2023. Kisspeptin treatment reverses high prolactin levels and improves gonadal function in hypothyroid male rats. *Sci. Rep.* 13: 16819.
- Falbo, L., et al. 2024. A high-throughput screening identifies MCM chromatin loading inhibitors targeting cells with increased replication origins. *iScience* 27: 110567.

RESEARCH USE

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

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