

MCM5 (H-300): sc-22780

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: MCM5 (human) mapping to 22q12.3; Mcm5 (mouse) mapping to 8 C1.

SOURCE

MCM5 (H-300) is a rabbit polyclonal antibody raised against amino acids 1-300 mapping at the N-terminus of MCM5 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

MCM5 (H-300) is recommended for detection of MCM5 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

MCM5 (H-300) is also recommended for detection of MCM5 in additional species, including equine, bovine and avian.

Suitable for use as control antibody for MCM5 siRNA (h): sc-35883, MCM5 siRNA (m): sc-35884, MCM5 shRNA Plasmid (h): sc-35883-SH, MCM5 shRNA Plasmid (m): sc-35884-SH, MCM5 shRNA (h) Lentiviral Particles: sc-35883-V and MCM5 shRNA (m) Lentiviral Particles: sc-35884-V.

Molecular Weight of MCM5: 90 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, HL-60 nuclear extract: sc-2147 or KNRK nuclear extract: sc-2141.

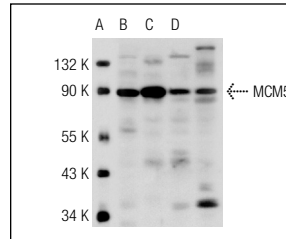
STORAGE

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

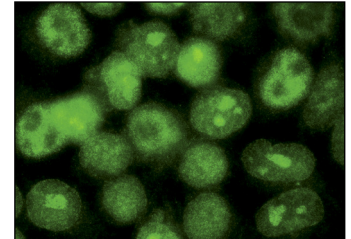
RESEARCH USE

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

DATA



MCM5 (H-300): sc-22780. Western blot analysis of MCM5 expression in KNRK (A), HL-60 (B), HeLa (C) and A-431 (D) nuclear extracts.



MCM5 (H-300): sc-22780. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

SELECT PRODUCT CITATIONS

- Blum, R., et al. 2006. E2F1 identified by promoter and biochemical analysis as a central target of glioblastoma cell-cycle arrest in response to Ras inhibition. *Int. J. Cancer* 119: 527-538.
- Mlechkovich, G. and Frenkel, N. 2007. Human herpesvirus 6A (HHV-6A) and HHV-6B alter E2F1/Rb pathways and E2F1 localization and cause cell cycle arrest in infected T cells. *J. Virol.* 81: 13499-13508.
- Izumi, H., et al. 2010. Role of ZNF143 in tumor growth through transcriptional regulation of DNA replication and cell-cycle-associated genes. *Cancer Sci.* 101: 2538-2545.
- Kuipers, M.A., et al. 2011. Highly stable loading of Mcm proteins onto chromatin in living cells requires replication to unload. *J. Cell Biol.* 192: 29-41.
- Lubelsky, Y., et al. 2011. Pre-replication complex proteins assemble at regions of low nucleosome occupancy within the Chinese hamster dihydrofolate reductase initiation zone. *Nucleic Acids Res.* 39: 3141-3155.

PROTOCOLS

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