SANTA CRUZ BIOTECHNOLOGY, INC.

MCM7 (G-7): sc-46687

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 (G-7) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of MCM7 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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.

APPLICATIONS

MCM7 (G-7) is recommended for detection of MCM7 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:500), 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) 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.

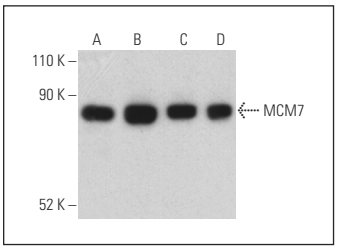
Molecular Weight of MCM7: 88 kDa.

Positive Controls: SHP-77 whole cell lysate: sc-364258, COLO 320DM cell lysate: sc-2226 or AMJ2-C8 whole cell lysate: sc-364366.

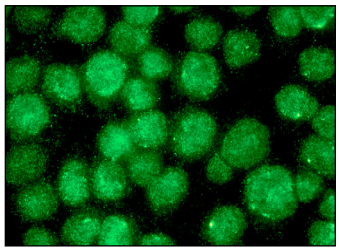
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



MCM7 (G-7): sc-46687. Western blot analysis of MCM7 expression in SHP-77 (**A**), COLO 320DM (**B**) and AMJ2-C8 (**C**) whole cell lysates and HeLa nuclear extract (**D**). Detection reagent used: m-IgG_{2a} BP-HRP: sc-542731.



MCM7 (G-7): sc-46687. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Groth, A., et al. 2007. Regulation of replication fork progression through histone supply and demand. Science 318: 1928-1931.
2. Revenko, A.S., et al. 2010. Chromatin loading of E2F-MLL complex by cancer-associated coregulator ANCCA via reading a specific histone mark. Mol. Cell. Biol. 30: 5260-5272.
3. Ortega, M.A., et al. 2012. Unique pattern of ORC2 and MCM7 localization during DNA replication licensing in the mouse zygote. Biol. Reprod. 87: 62.
4. Abdelbaqi, K., et al. 2013. Ku protein levels, localization and association to replication origins in different stages of breast tumor progression. J. Cancer 4: 358-370.
5. Ortega, M.A., et al. 2016. Presence of the paternal pronucleus assists embryo in overcoming cycloheximide induced abnormalities in zygotic mitosis. J. Cell. Biochem. 117: 1806-1812.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

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.