SANTA CRUZ BIOTECHNOLOGY, INC.

MCM2 (E-8): sc-373702

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: MCM2 (human) mapping to 3q21.3; Mcm2 (mouse) mapping to 6 D1.

SOURCE

MCM2 (E-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 9-34 at the N-terminus of MCM2 of human origin.

PRODUCT

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

MCM2 (E-8) is available conjugated to agarose (sc-373702 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-373702 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-373702 PE), fluorescein (sc-373702 FITC), Alexa Fluor® 488 (sc-373702 AF488), Alexa Fluor® 546 (sc-373702 AF546), Alexa Fluor® 594 (sc-373702 AF594) or Alexa Fluor® 647 (sc-373702 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-373702 AF680) or Alexa Fluor® 790 (sc-373702 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-373702 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

PROTOCOLS

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

APPLICATIONS

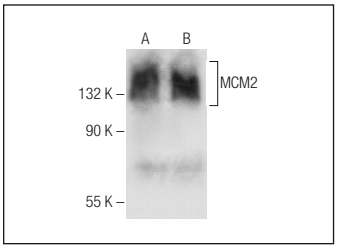
MCM2 (E-8) is recommended for detection of MCM2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MCM2 siRNA (h): sc-35879, MCM2 siRNA (m): sc-35880, MCM2 shRNA Plasmid (h): sc-35879-SH, MCM2 shRNA Plasmid (m): sc-35880-SH, MCM2 shRNA (h) Lentiviral Particles: sc-35879-V and MCM2 shRNA (m) Lentiviral Particles: sc-35880-V.

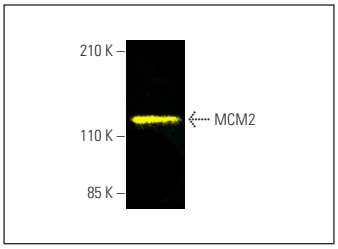
Molecular Weight of MCM2: 130 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, MEG-01 nuclear extract: sc-2150 or CCRF-CEM nuclear extract: sc-2146.

DATA



MCM2 (E-8): sc-373702. Western blot analysis of MCM2 expression in MEG-01 (**A**) and CCRF-CEM (**B**) nuclear extracts.



MCM2 (E-8) Alexa Fluor® 488: sc-373702 AF488. Direct fluorescent western blot analysis of MCM2 expression in Jurkat whole cell lysate. Blocked with UltraCruz® Blocking Reagent: sc-516214.

SELECT PRODUCT CITATIONS

1. Liu, Z., et al. 2016. MCM2 and TIP30 are prognostic markers in squamous cell/adenosquamous carcinoma and adenocarcinoma of the gallbladder. Mol. Med. Rep. 14: 4581-4592.
2. Paniagua-Torija, B., et al. 2018. Cells in the adult human spinal cord ependymal region do not proliferate after injury. J. Pathol. 246: 415-421.
3. Jiang, B., et al. 2019. Identifying UBA2 as a proliferation and cell cycle regulator in lung cancer A549 cells. J. Cell. Biochem. 120: 12752-12761.
4. Shao, X., et al. 2020. A distinct role for recombination repair factors in an early cellular response to transcription-replication conflicts. Nucleic Acids Res. 48: 5467-5484.
5. Hsu, E.C., et al. 2021. MCM2-7 complex is a novel druggable target for neuroendocrine prostate cancer. Sci. Rep. 11: 13305.
6. Polasek-Sedlackova, H., et al. 2022. Solving the MCM paradox by visualizing the scaffold of CMG helicase at active replisomes. Nat. Commun. 13: 6090.

RESEARCH USE

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