# MCM10 (h): 293 Lysate: sc-112287



The Power to Ouestion

## **BACKGROUND**

The mini-chromosome maintenance (MCM) family of proteins include MCM2, MCM3, MCM4 (Cdc21), MCM5 (Cdc46), MCM6 (Mis5), MCM7 (Cdc47), MCM8, MCM9 and MCM10 (Dna43). The proteins in this family 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. MCM proteins are crucial components of the pre-replication complex (pre-RC) and are involved in replication fork formation and the recruitment of other DNA replication proteins. 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. MCM10 interacts with replication factors and can interact with MCM2 and MCM6.

## **REFERENCES**

- Koonin, E.V. 1993. A common set of conserved motifs in a vast variety of putative nucleic acid-dependent ATPases including MCM proteins involved in the initiation of eukaryotic DNA replication. Nucleic Acids Res. 21: 2541-2547.
- Fujita, M., Yamada, C., Tsurumi, T., Hanaoka, F., Matsuzawa, K. and Inagaki, M. 1998. Cell cycle- and chromatin binding state-dependent phosphorylation of human MCM heterohexameric complexes. A role for Cdc2 kinase. J. Biol. Chem. 273: 17095-17101.
- Leone, G., DeGregori, J., Yan, Z., Jakoi, L., Ishida, S., Williams, R.S. and Nevins, J.R. 1998. E2F-3 activity is regulated during the cell cycle and is required for the induction of S phase. Genes Dev. 12: 2120-2130.
- 4. Coverley, D., Wilkinson, H.R., Madine, M.A., Mills, A.D. and Laskey, R.A. 1998. Protein kinase inhibition in  $\rm G_2$  causes mammalian MCM proteins to reassociate with chromatin and restores ability to replicate. Exp. Cell Res. 238: 63-69.
- 5. Ricke, R.M. and Bielinsky, A.K. 2004. MCM10 regulates the stability and chromatin association of DNA polymerase- $\alpha$ . Mol. Cell 16: 173-185.
- Yoshida, K. and Inoue, I. 2004. Expression of MCM10 and TopBP1 is regulated by cell proliferation and UV irradiation via the E2F transcription factor. Oncogene 23: 6250-6260.
- 7. Izumi, M., Yatagai, F. and Hanaoka, F. 2004. Localization of human MCM10 is spatially and temporally regulated during the S phase. J. Biol. Chem. 279: 32569-32577.

## **CHROMOSOMAL LOCATION**

Genetic locus: MCM10 (human) mapping to 10p13.

## **PRODUCT**

MCM10 (h): 293 Lysate represents a lysate of human MCM10 transfected 293 cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

### **RESEARCH USE**

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

#### **APPLICATIONS**

MCM10 (h): 293 Lysate is suitable as a Western Blotting positive control for human reactive MCM10 antibodies. Recommended use: 10-20 µl per lane.

Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-tranfected 293 cells.

## **STORAGE**

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

## **PROTOCOLS**

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

Santa Cruz Biotechnology, Inc. 1.800.457.3801 831.457.3801 fax 831.457.3801 Europe +00800 4573 8000 49 6221 4503 0 www.scbt.com