Anti-MCM7 antibody, rabbit polyclonal IgG

70-120　100 μg

Key words: DNA replication licensing factor, MCM complex, DNA replication initiation, G1/S transition, DNA damage response, DNA helicase,

Function: MCM7 (human; 718 aa, 80 kDa) acts as component of the MCM2-7 complex (MCM complex) which is the putative replicative helicase essential for 'once per cell cycle' DNA replication initiation and elongation in eukaryotic cells. The active ATPase sites in the MCM2-7 ring are formed through the interaction surfaces of two neighboring subunits such that a critical structure of a conserved arginine finger motif is provided in trans relative to the ATP-binding site of the Walker A box of the adjacent subunit. The six ATPase active sites, however, are likely to contribute differentially to the complex helicase activity. Required for S-phase checkpoint activation upon UV-induced damage.

Applications

1) Western blotting (1/1,000~1/5,000 dilution).
2) Immunoprecipitation (assay dependent)
3) Immunofluorescence staining (1/200~1/1,000 dilution).

Other applications have not been tested.

Immunogen: Purified His6-tagged human MCM7 protein encompassing 562 -719 amino acids.

Reactivity: Reacts with human mouse, rat and hamster.　Not tested in other species.

Product: Purified IgG from the rabbit antiserum. 1 mg/ml in PBS, 50% glycerol, filter-sterilized. Azide- and carrier-free.

Storage: Shipped at 4℃. Upon arrival, spin-down, aliquot and store at -20℃.

Data Link　UniProtKB/Swiss-Prot P33993 MCM7_HUMAN

References: This antibody was described and used in the following publications.

1. Fujita M et al. (1996) hCDC47, a human member of the MCM family. Dissociation of the nucleus-bound form during S phase. J Biol Chem. 271:4349-54. PMID 8626784 Free Article. **WB, IP, IF**
2. Fujita M. et al. (1997) In vivo interaction of human MCM heterohexameric complexes with chromatin. Possible involvement of ATP. J Biol Chem. 272:10928-35. PMID 9099751 Free Article. **WB, IP**
3. Fujita M. et al. (2002) Nuclear organization of DNA replication initiation proteins in mammalian cells. J Biol Chem. 277:10354-61. PMID 11779870 Free Article. **WB, IP, IF.**

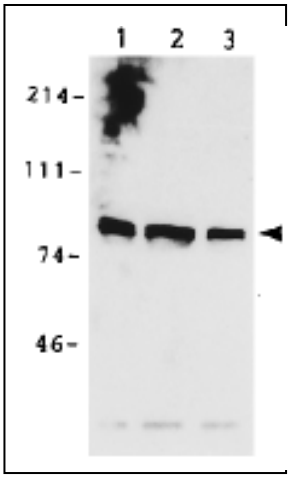

Fig. 1. Identification of MCM7 protein in whole cell extracts of human cells by western blotting using anti-MCM7 antibody.

Lane 1; SiHa cells

Lane 2; C33A cells

Lane3; WI38 cells

All cell lines are cervical cancer derived. Samples are obtained from approximately 10^5 cells.

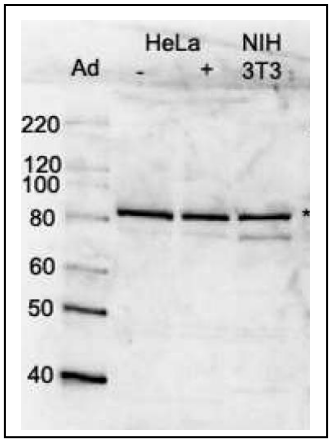

Fig. 2 Identification of MCM7 protein in whole cell extracts of human and mouse cells by western blotting using anti-MCM7 antibody..

Lane 1. Size marker proteins in kDa.

Lane 2. Extract of HeLa cells untreated (-).

Lane 3. Extract of HeLa cells treated with 100 nM adriamycin for 24 hr (+)

Lane 4. Extract of NIH3T3 (mouse) cells.

Anti-MCM7 antibody was used at 1/1,000 dilution.

* Indicates the band of MCM7 protein

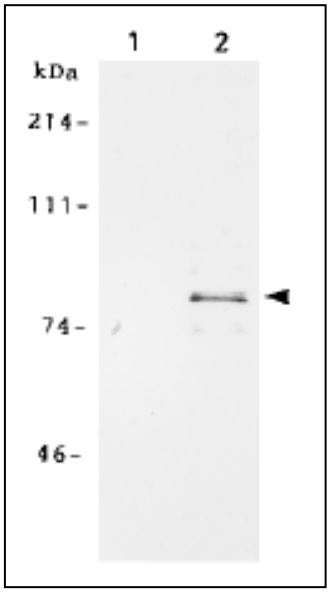

Fig. 3. Immunoprecipitation of MCM7 protein from crude extract of human fibroblast cell line WI38 by using anti-MCM7 antibody..

Lane 1; Immunoprecipitation with pre-immune serum

Lane 2; Immnoprecipitation with anti-MCM7 antiserum.

Cells were labeled with S^{35} methionine and MCM7 was immunoprecipitated with the anti-MCM7 antibody followed by SDS-PAGE and autoradiography.

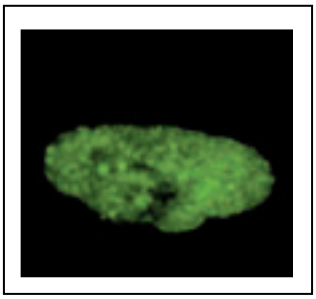

Fig. 4. Immunofluorecence staining and confocal microscopic analysis of MCM7 in G_1 phase HeLa cell nucleus by using anti-MCM7 antibody after treatment with protein cross-linking reagent, DSP and chromatin extraction. The processed cells were fixed with formaldehyde before staining.