

Anti-MCM7 antibody, rabbit polyclonal IgG

70-120 100 μ g

Shipping, Storage: Ship at 4°C. Upon arrival, spin-down, aliquot and store at -20°C.

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

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

Applications

- 1) Western blotting (1/1,000~1/5,000 dilution).
- 2) Immunoprecipitation (assay dependent)
- 3) Chromatin Immuno-Precipitation
- 4) Immunofluorescence staining (1/200~1/1,000 dilution).
- 5) Flow cytometry (assay dependent)

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

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.

Data Link UniProtKB/Swiss-Prot [P33993](#) MCM7_HUMAN

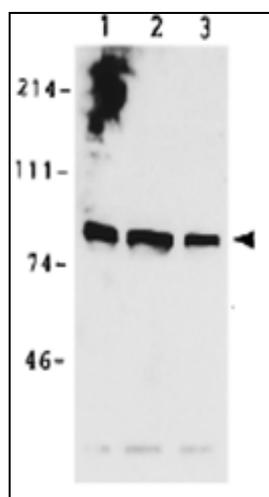


Fig. 1. Identification of MCM7 protein in whole cell extracts of human cells by western blotting using anti-MCM7 antibody.

Lane 1: SiHa cells

Lane 2: C33A cells

Lane 3: WI38 cells

All cell lines are cervical cancer derived. Samples are obtained from approximately 10^6 cells.

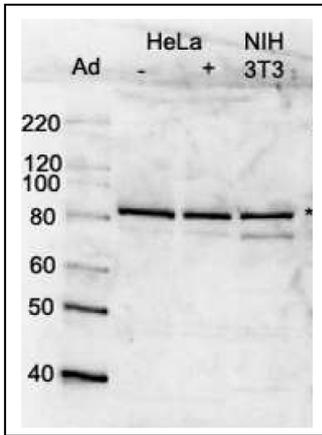


Fig. 2 Identification of MCM7 protein in whole cell extracts of human and mouse cells by western blotting using anti-MCM7 antibody..

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.

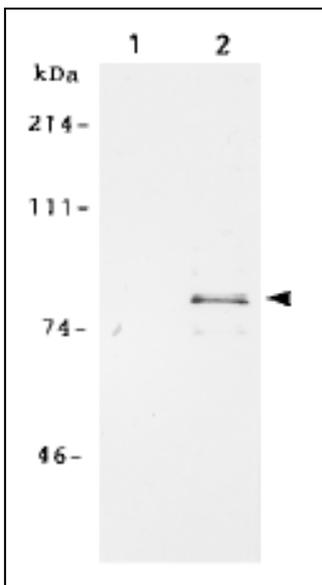


Fig. 3. Immunoprecipitation of MCM7 protein from crude extract of human fibroblast cell line WI38 by using anti-MCM7 antibody..

Lane 1; Immunoprecipitation with pre-immune serum

Lane 2; Immunoprecipitation 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.

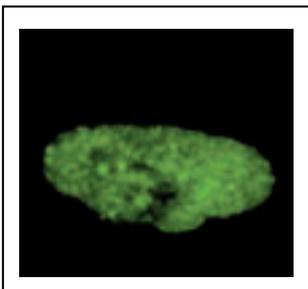


Fig. 4. Immunofluorescence staining and confocal microscopic analysis of MCM7 in G₁ phase HeLa cell nucleus by using anti-MCM7 antibody after treatment with protein cross-linking reagent, DSP and chromatin extraction. The processed cells were fixed with formaldehyde before staining.

References: This antibody was described in Ref.1 and used in the following publications.

1. Fujita M et al. hCDC47, a human member of the MCM family. Dissociation of the nucleus-bound form during S phase. *J Biol Chem.* (1996)271:4349-54. [PMID 8626784](#). **WB, IP, IF**
2. Fujita M. et al. In vivo interaction of human MCM heterohexameric complexes with chromatin. Possible involvement of ATP. *J Biol Chem.* (1997)272:10928-35. [PMID 9099751](#). **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](#). **WB, IP, IF.**
4. Sugimoto N. et al. Chromatin remodeler sucrose nonfermenting 2 homolog (SNF2H) is recruited onto DNA replication origins through interaction with Cdc10 protein-dependent transcript 1 (Cdt1) and promotes pre-replication complex formation. [Nucleic Acids Res.](#) 2015 Jul 13;43(12):5898-911. PMID: 25990725 **WB, IP, ChIP, Flow Cyt: human**
5. Sugimoto N. et al. Cdt1-binding protein GRWD1 is a novel histone-binding protein that facilitates MCM loading through its influence on chromatin architecture. [Nucleic Acids Res.](#) 2015 Jul 13;43(12):5898-911. PMID:25990725. **WB, ChIP: human**
6. Sugimoto N. et al. Genome-wide analysis of the spatiotemporal regulation of firing and dormant replication origins in human cells. [Nucleic Acids Res.](#) 2018 Jul 27;46(13):6683-6696. PMID: 29893900. **ChIP: human**