

Ordering Information

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HGNC name: MKI67

RRID: [AB_2637051](https://identifiers.org/AB_2637051)

Immunogen: Recombinant construct containing the 2nd, 3rd and 4th Ki67 repeats of the human sequence (amino acids 1,111-1,490) expressed in and purified from *E. coli*.

Format: Affinity purified antibody at 1mg/mL in 50% PBS, 50% glycerol, 5mM azide

Storage: Shipped on ice. Store at 4°C. For long term storage, leave frozen at -20°C. Avoid freeze / thaw cycles

Recommended dilutions:

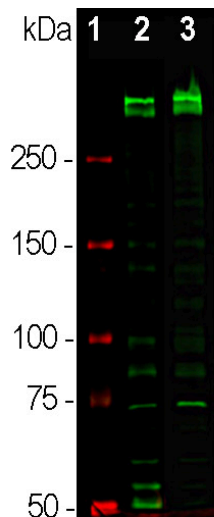
WB: 1:1,000-5,000.

IF 1:2,000-5,000

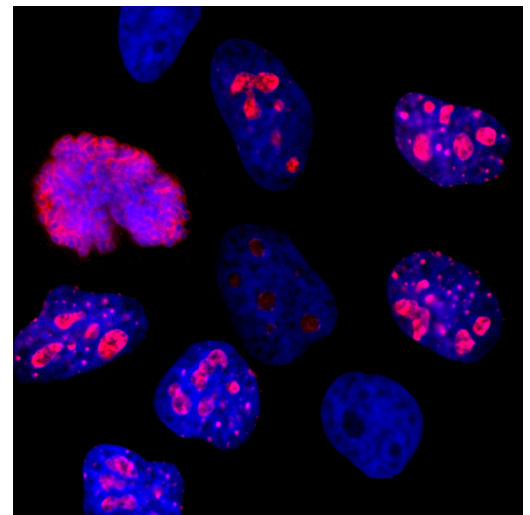
References:

- Gerdes J, Schwab U, Lemke H, and Stein H. Production of a mouse monoclonal antibody reactive with a human nuclear antigen associated with cell proliferation. *Int. J. Cancer* 31:13-20 (1983).
- Kill I R, Faragher RGA, Lawrence K, and Shall S. The expression of proliferation-dependent antigens during the lifespan of normal and progeroid human fibroblasts in culture. *J. Cell Sci.* 107: 571-579 (1994).
- Yerushalmi R, et al. Ki67 in breast cancer: Prognostic and predictive potential. *Lancet Oncol.* 11: 174-183 (2010).
- Josefsson A, et al. Low endoglin vascular density and Ki67 index in Gleason score 6 tumours may identify prostate cancer patients suitable for surveillance. *Scand J Urol Nephrol.* 46: 247-257 (2012).

Applications	Host	Isotype	Molecular Wt.	Species Cross-Reactivity
Western blots, IF/ICC	Mouse	IgG1	345kDa, 395kDa	Hu



Western blot analysis of equal amounts of cell lysates using mouse mAb to Ki67, MCA-6G3, dilution 1:2,000, (green): [1] protein standard (red), [2] HeLa cells, [3] HEK293 cells. Strong double bands above 250kDa correspond to the two major Ki67 isoforms of molecular weight of 345 and 395kDa. Smaller proteolytic fragments of these isoforms are also detected on the blot.



Immunofluorescent analysis of HeLa cells stained with mouse mAb to Ki67, MCA-6G3, dilution 1:2,000 (red). The blue is DAPI staining of nuclear DNA. MCA-6G3 antibody stains Ki67 protein predominantly expressed in the nucleoli of rapidly dividing cells, while nearby quiescent cells express little or no Ki67. The Ki67 protein also coats the surface of condensed chromosomes as seen at the middle left of the image.

Background: The Ki67 protein was first discovered in an attempt to generate cancer specific monoclonal antibodies. Mice were injected with nuclear preparations from Hodgkin's lymphoma cells. The original Ki67 antibody recognizes a very large protein with two isoforms of 345kDa and 395kDa. The two Ki67 proteins were found to be heavily expressed in proliferating cells, but to be absent in quiescent cells. The presence of the Ki67 protein is frequently used as an indicator of cell proliferation and its level of expression is one of the most reliable biomarkers of proliferative status of cancer cells. Much research shows a correlation between Ki67 protein level and prognosis in cancer patients, when high Ki67 levels being associated with poorer outcomes. The original Ki67 antibody and several others have become so widely used that a search for "Ki67" in PubMed in April 2017 produced almost 23,000 results. Recent studies show that Ki67 functions as a "biological surfactant", which is essential for the separation of condensed chromosomal DNA into the two daughter cells during cell division. This presumably explains the highly basic nature of Ki67, allowing a charge-based interaction with nucleic acids, and the lack of this protein in non-dividing cells.

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Abbreviation Key:

mAb—Monoclonal Antibody pAb—Polyclonal Antibody WB—Western Blot IF—Immunofluorescence ICC—Immunocytochemistry IHC—Immunohistochemistry E—ELISA Hu—Human Mo—Monkey Do—Dog Rt—Rat Ms—Mouse Bo—Cow Po—Pig Ho—Horse Ch—Chicken Dr—*D. rerio* Dm—*D. melanogaster* Ce—*C. elegans* Sc—*S. cerevisiae* Sa—*S. aureus* Ec—*E. coli*.