

Ki67 Antibody

Rabbit mAb Catalog # AP90545

## **Product Information**

Application	WB, IHC, IF, FC, ICC, IHF
Primary Accession	<u>P46013</u>
Reactivity	Human
Clonality	Monoclonal
Other Names	MKI67; KIA; Antigen KI-67; Ki-67;
Isotype	Rabbit IgG
Host	Rabbit
Calculated MW	358694

## **Additional Information**

Dilution	WB 1:500~1:2000 IHC 1:50~1:200 ICC/IF 1:50~1:200 FC 1:50
Purification	Affinity-chromatography
Immunogen	A synthesized peptide derived from human Ki67
Description	Required to maintain individual mitotic chromosomes dispersed in the cytoplasm following nuclear envelope disassembly(PubMed:27362226). Associates with the surface of the mitotic chromosome, the perichromosomal layer, and covers a substantial fraction of the chromosome surface (PubMed:27362226).
Storage Condition and Buffer	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle.

## **Protein Information**

Name	MKI67 ( <u>HGNC:7107</u> )
Function	Protein that associates with the surface of mitotic chromosomes and acts both as a chromosome repellent during early mitosis and chromosome attractant during late mitosis (PubMed: <u>27362226</u> , PubMed: <u>32879492</u> , PubMed: <u>35513709</u> , PubMed: <u>39153474</u> ). Required to maintain individual mitotic chromosomes dispersed in the cytoplasm following nuclear envelope disassembly (PubMed: <u>27362226</u> ). During early mitosis, relocalizes from nucleoli to the chromosome surface where it forms extended brush structures that cover a substantial fraction of the chromosome surface (PubMed: <u>27362226</u> ). The MKI67 brush structure prevents chromosomes from collapsing into a single chromatin mass by forming a steric and electrostatic charge barrier: the protein has a high net electrical charge and acts as a surfactant, dispersing chromosomes and enabling independent chromosome motility (PubMed: <u>27362226</u> ). During mitotic anaphase, the MKI67 brush structure collapses and MKI67 switches from a chromosome repellent to a

	chromosome attractant to promote chromosome clustering and facilitate the exclusion of large cytoplasmic particles from the future nuclear space (PubMed: <u>32879492</u> , PubMed: <u>39153474</u> ). Mechanistically, dephosphorylation during mitotic exit and simultaneous exposure of a conserved basic patch induce the RNA-dependent formation of a liquid- like condensed phase on the chromosome surface, promoting coalescence of neighboring chromosome surfaces and clustering of chromosomes (PubMed: <u>39153474</u> ). Binds premature ribosomal RNAs during anaphase; promoting liquid-liquid phase separation (PubMed: <u>28935370</u> , PubMed: <u>39153474</u> ). Binds DNA, with a preference for supercoiled DNA and AT-rich DNA (PubMed: <u>10878551</u> ). Does not contribute to the internal structure of mitotic chromosomes (By similarity). May play a role in chromatin organization; it is however unclear whether it plays a direct role in chromatin organization or whether it is an indirect consequence of its function in mitotic chromosome (PubMed: <u>24867636</u> ).
Cellular Location	Chromosome. Nucleus. Nucleus, nucleolus. Note=During early mitosis, relocalizes from nucleoli to the surface of the mitotic chromosome, the perichromosomal layer, and covers a substantial fraction of the mitotic chromosome surface (PubMed:27362226) Associates with satellite DNA in G1 phase (PubMed:9510506). Binds tightly to chromatin in interphase, chromatin-binding decreases in mitosis when it associates with the surface of the condensed chromosomes (PubMed:15896774, PubMed:22002106). Predominantly localized in the G1 phase in the perinucleolar region, in the later phases it is also detected throughout the nuclear interior, being predominantly localized in the nuclear matrix (PubMed:22002106)

## Images



Western blot analysis of Ki67 expression in Ramos cell lysate.

Image not found : 202311/AP90545-IHC.jpg	Immunohistochemical analysis of paraffin-embedded human tonsil, using Ki67 Antibody .
Image not found : 202311/AP90545-IF.jpg	Immunofluorescent analysis of Hela cells, using Ki67 Antibody.

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