

# Ki 67 Monoclonal Antibody(4A8)

Catalog # AP63318

## Product Information

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Application	IHC, IF, ICC
Primary Accession	<a href="#">P46013</a>
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Calculated MW	358694

## Additional Information

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Gene ID	4288
Other Names	MKI67; Antigen KI-67
Dilution	IHC~~1:100~500 IF~~1:50~200 ICC~~N/A
Format	PBS, pH 7.4, containing 0.09% (W/V) sodium azide as Preservative and 50% Glycerol.
Storage Conditions	-20°C

## Protein Information

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Name	MKI67 ( <a href="#">HGNC:7107</a> )
Function	<p>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:<a href="#">27362226</a>, PubMed:<a href="#">32879492</a>, PubMed:<a href="#">35513709</a>, PubMed:<a href="#">39153474</a>). Required to maintain individual mitotic chromosomes dispersed in the cytoplasm following nuclear envelope disassembly (PubMed:<a href="#">27362226</a>). During early mitosis, relocates from nucleoli to the chromosome surface where it forms extended brush structures that cover a substantial fraction of the chromosome surface (PubMed:<a href="#">27362226</a>). 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:<a href="#">27362226</a>). 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:<a href="#">32879492</a>, PubMed:<a href="#">39153474</a>). 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</p>

chromosome surface, promoting coalescence of neighboring chromosome surfaces and clustering of chromosomes (PubMed:[39153474](#)). Binds premature ribosomal RNAs during anaphase; promoting liquid-liquid phase separation (PubMed:[28935370](#), PubMed:[39153474](#)). Binds DNA, with a preference for supercoiled DNA and AT-rich DNA (PubMed:[10878551](#)). 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:[24867636](#)).

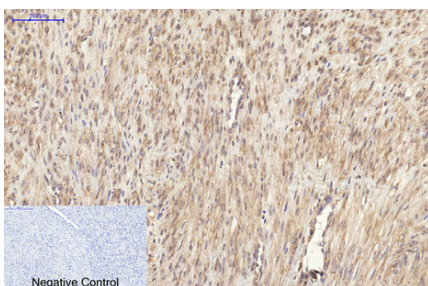
### Cellular Location

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](#))

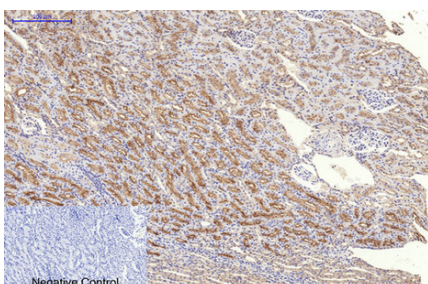
## Background

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](#)). 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:[27362226](#)). Binds DNA, with a preference for supercoiled DNA and AT-rich DNA (PubMed:[10878551](#)). Does not contribute to the internal structure of mitotic chromosomes (By similarity). May play a role in chromatin organization (PubMed:[24867636](#)). It is however unclear whether it plays a direct role in chromatin organization or whether it is an indirect consequence of its function in maintaining mitotic chromosomes dispersed (Probable).

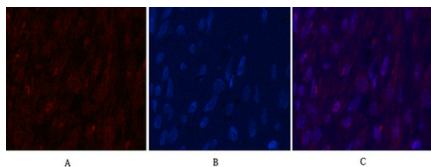
## Images



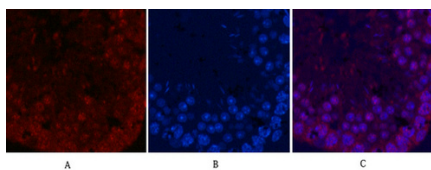
Immunohistochemical analysis of paraffin-embedded Human-uterus-cancer tissue. 1, Ki 67 Monoclonal Antibody(4A8) was diluted at 1:200(4°C, overnight). 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98°C, 20min). 3, Secondary antibody was diluted at 1:200(room temperature, 30min). Negative control was used by secondary antibody only.



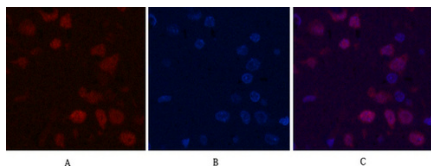
Immunohistochemical analysis of paraffin-embedded Rat-kidney tissue. 1, Ki 67 Monoclonal Antibody(4A8) was diluted at 1:200(4°C, overnight). 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98°C, 20min). 3, Secondary antibody was diluted at 1:200(room temperature, 30min). Negative control was used by secondary antibody only.



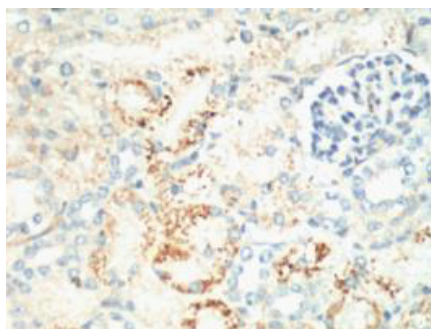
Immunofluorescence analysis of Human-breast-cancer tissue. 1, Ki 67 Monoclonal Antibody(4A8)(red) was diluted at 1:200(4°C, overnight). 2, Cy3 labeled Secondary antibody was diluted at 1:300(room temperature, 50min). 3, Picture B: DAPI(blue) 10min. Picture A: Target. Picture B: DAPI. Picture C: merge of A+B



Immunofluorescence analysis of Mouse-testis tissue. 1, Ki 67 Monoclonal Antibody(4A8)(red) was diluted at 1:200(4°C, overnight). 2, Cy3 labeled Secondary antibody was diluted at 1:300(room temperature, 50min). 3, Picture B: DAPI(blue) 10min. Picture A: Target. Picture B: DAPI. Picture C: merge of A+B



Immunofluorescence analysis of Rat-brain tissue. 1, Ki 67 Monoclonal Antibody(4A8)(red) was diluted at 1:200(4°C, overnight). 2, Cy3 labeled Secondary antibody was diluted at 1:300(room temperature, 50min). 3, Picture B: DAPI(blue) 10min. Picture A: Target. Picture B: DAPI. Picture C: merge of A+B



IHC staining of Mouse Kidney tissue, diluted at 1:200.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.