

**Ki 67 Monoclonal Antibody(4A8)**  
**Catalog # AP63318****Specification****Ki 67 Monoclonal Antibody(4A8) - Product Information**

Application	IHC-P, IF
Primary Accession	<a href="#">P46013</a>
Reactivity	Human, Mouse, Rat
Host	Mouse
Clonality	Monoclonal

**Ki 67 Monoclonal Antibody(4A8) - Additional Information****Gene ID** 4288**Other Names**

MKI67; Antigen KI-67

**Dilution**

IHC-P~~N/A

IF~~IHC 1:200 IF 1:50-200

**Format**

PBS, pH 7.4, containing 0.09% (W/V) sodium azide as Preservative and 50% Glycerol.

**Storage Conditions**

-20°C

**Ki 67 Monoclonal Antibody(4A8) - Protein Information****Name** MKI67 ([HGNC:7107](#))**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:<a href="http://www.uniprot.org/citations/27362226" target="\_blank">27362226</a>, PubMed:<a href="http://www.uniprot.org/citations/32879492" target="\_blank">32879492</a>, PubMed:<a href="http://www.uniprot.org/citations/35513709" target="\_blank">35513709</a>, PubMed:<a href="http://www.uniprot.org/citations/39153474" target="\_blank">39153474</a>). Required to maintain individual mitotic chromosomes dispersed in the cytoplasm following nuclear envelope disassembly (PubMed:<a href="http://www.uniprot.org/citations/27362226" target="\_blank">27362226</a>). 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:<a href="http://www.uniprot.org/citations/27362226" target="\_blank">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="http://www.uniprot.org/citations/27362226" target="\_blank">27362226</a>).

[27362226](http://www.uniprot.org/citations/27362226)). 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:[32879492](http://www.uniprot.org/citations/32879492), PubMed:[39153474](http://www.uniprot.org/citations/39153474)). 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:[39153474](http://www.uniprot.org/citations/39153474)). Binds premature ribosomal RNAs during anaphase; promoting liquid-liquid phase separation (PubMed:[28935370](http://www.uniprot.org/citations/28935370), PubMed:[39153474](http://www.uniprot.org/citations/39153474)). Binds DNA, with a preference for supercoiled DNA and AT-rich DNA (PubMed:[10878551](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/24867636)).

#### Cellular Location

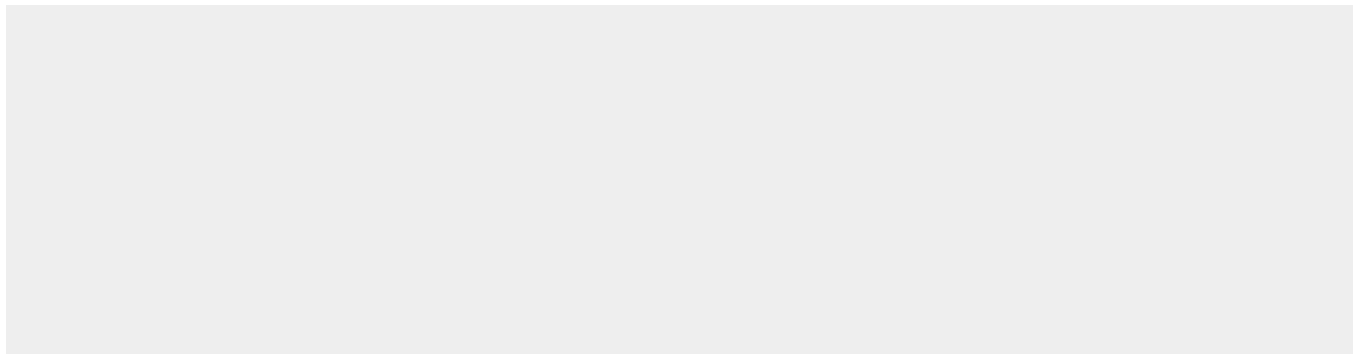
Chromosome. Nucleus. Nucleus, nucleolus. Note=During early mitosis, relocates from nucleoli to the surface of the mitotic chromosome, the perichromosomal layer, and covers a substantial fraction of the mitotic chromosome surface (PubMed:27362226) Associates with satellite DNA in G1 phase (PubMed:9510506). 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)

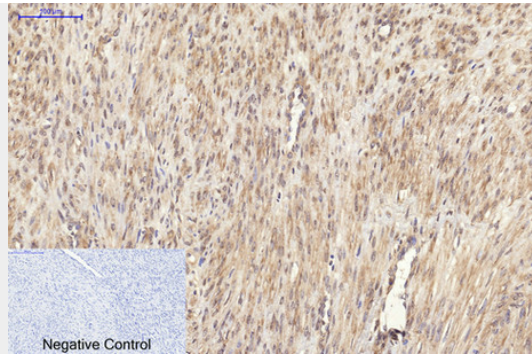
#### Ki 67 Monoclonal Antibody(4A8) - Protocols

Provided below are standard protocols that you may find useful for product applications.

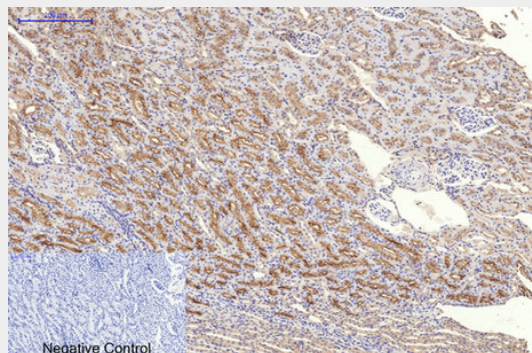
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

#### Ki 67 Monoclonal Antibody(4A8) - Images

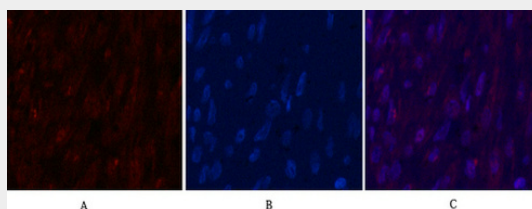




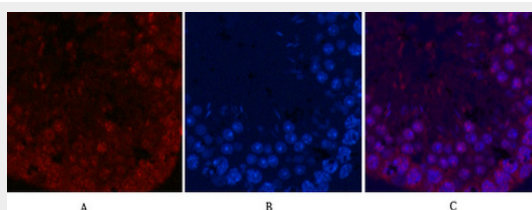
Immunohistochemical analysis of paraffin-embedded Human-uterus-cancer tissue. 1, Ki 67 Monoclonal Antibody(4A8) was diluted at 1:200(4°C, overnight). 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98°C, 20min). 3, Secondary antibody was diluted at 1:200(room temperature, 30min). Negative control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



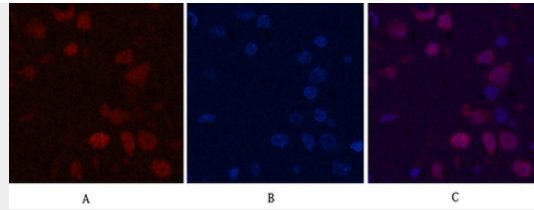
Immunohistochemical analysis of paraffin-embedded Rat-kidney tissue. 1, Ki 67 Monoclonal Antibody(4A8) was diluted at 1:200(4°C, overnight). 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98°C, 20min). 3, Secondary antibody was diluted at 1:200(room temperature, 30min). Negative control was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



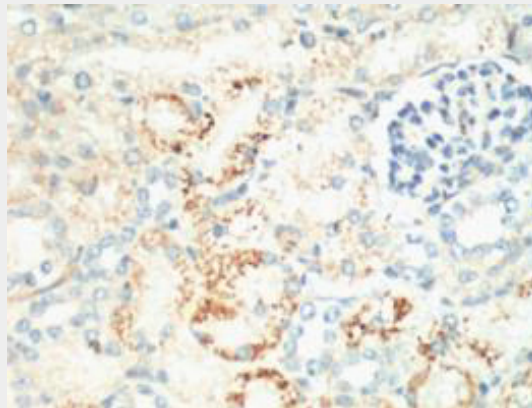
Immunofluorescence analysis of Human-breast-cancer tissue. 1, Ki 67 Monoclonal Antibody(4A8)(red) was diluted at 1:200(4°C, overnight). 2, Cy3 labeled Secondary antibody was diluted at 1:300(room temperature, 50min). 3, Picture B: DAPI(blue) 10min. Picture A: Target. Picture B: DAPI. Picture C: merge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

#### **Ki 67 Monoclonal Antibody(4A8) - 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).