

Ki-67 antibody

Purified Mouse Monoclonal Antibody (Mab)

Catalog # AM8727b

Product Information

Application	WB, IHC-P, E
Primary Accession	P46013
Reactivity	Human
Predicted	Human
Host	Mouse
Clonality	monoclonal
Isotype	IgG1
Clone Names	2179CT8.1.2.1
Calculated MW	358694

Additional Information

Gene ID	4288
Other Names	Proliferation marker protein Ki-67, Antigen identified by monoclonal antibody Ki-67, Antigen KI-67, Antigen Ki67, MKI67 (HGNC:7107)
Target/Specificity	This antibody is generated from a mouse immunized with a KLH conjugated synthetic peptide between 1000-1213 amino acids from human.
Dilution	WB~~1:1000 IHC-P~~1:500 E~~Use at an assay dependent concentration.
Format	Purified monoclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein G column, followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	Ki-67 antibody is for research use only and not for use in diagnostic or therapeutic procedures.

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: 27362226 , PubMed: 32879492 , PubMed: 35513709 , PubMed: 39153474). Required to maintain individual mitotic chromosomes dispersed in the cytoplasm following nuclear envelope

disassembly (PubMed:[27362226](#)). 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:[27362226](#)). 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:[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](#), PubMed:[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](#)). 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

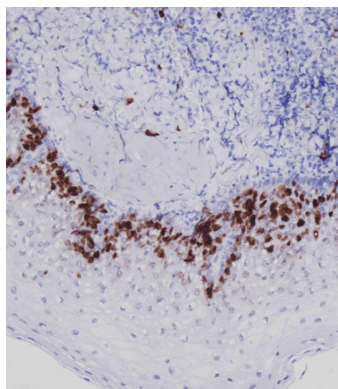
Chromosome. Nucleus. Nucleus, nucleolus. Note=During early mitosis, relocalizes from nucleoli to the surface of the mitotic chromosome, the perichromosomal layer, and covers a substantial fraction of the mitotic chromosome surface (PubMed:[27362226](#)) Associates with satellite DNA in G1 phase (PubMed:[9510506](#)).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

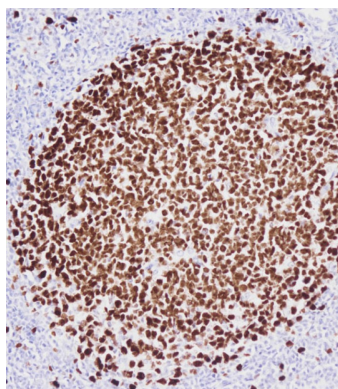
Required to maintain individual mitotic chromosomes dispersed in the cytoplasm following nuclear envelope disassembly (PubMed:[27362226](#)). Associates with the surface of the mitotic chromosome, the perichromosomal layer, and covers a substantial fraction of the chromosome surface (PubMed:[27362226](#)). 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).

References

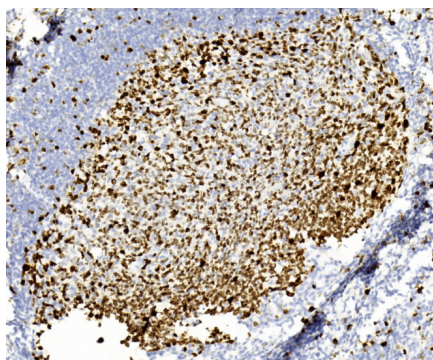
- Schlueter C.,et al.J. Cell Biol. 123:513-522(1993).
 Deloukas P.,et al.Nature 429:375-381(2004).
 Gerdes J.,et al.Submitted (MAR-1997) to the EMBL/GenBank/DDBJ databases.
 Gerdes J.,et al.Int. J. Cancer 31:13-20(1983).
 Gerdes J.,et al.J. Immunol. 133:1710-1715(1984).



Immunohistochemical analysis of P46013 on paraffin-embedded Human tonsil tissue. Tissue was fixed with formaldehyde at room temperature. Heat induced epitope retrieval was performed by EDTA buffer (pH9. 0). Samples were incubated with primary antibody(1:500) for 1 hour at room temperature. Undiluted CRF Anti-Polyvalent HRP Polymer antibody was used as the secondary antibody.



Immunohistochemical analysis of P46013 on paraffin-embedded Human tonsil tissue. Tissue was fixed with formaldehyde at room temperature. Heat induced epitope retrieval was performed by EDTA buffer (pH9. 0). Samples were incubated with primary antibody(1:500) for 1 hour at room temperature. Undiluted CRF Anti-Polyvalent HRP Polymer antibody was used as the secondary antibody.



Immunohistochemical analysis of paraffin-embedded Human tonsil section using Pink1(Cat#AM8727b). AM8727b was diluted at 1:200 dilution. A undiluted biotinylated goat polyvalent antibody was used as the secondary, followed by DAB staining.

Citations

- [Serine Protease-Mediated Cutaneous Inflammation: Characterization of an Ex Vivo Skin Model for the Assessment of Dexamethasone-Loaded Core Multishell-Nanocarriers](#)

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