

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~~1:200 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:<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: 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: <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: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)

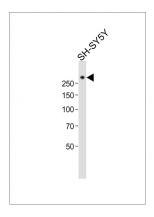
Background

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).

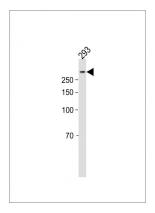
References

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).

Images



All lanes: Anti-Ki-67 antibody at 1:1000 dilution + SH-SY5Y whole cell lysate Lysates/proteins at 20 µg per lane. Secondary: Goat Anti-Mouse IgG, (H+L), Peroxidase conjugated (ASP1613) at 1/8000 dilution. Observed band size: 359 KDa Blocking/Dilution buffer: 5% NFDM/TBST.



All lanes: Anti-Ki-67 antibody at 1:1000 dilution + 293 cell lysate Lysates/proteins at 20 μg per lane. Secondary Goat Anti-Mouse IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size: 359 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

Citations

• <u>Serine Protease-Mediated Cutaneous Inflammation: Characterization of an Ex Vivo Skin Model for the Assessment of Dexamethasone-Loaded Core Multishell-Nanocarriers</u>

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