abcam

ab21700

Anti-Ki67 antibody [SP6], prediluted

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.6 Preservative: 0.1% Sodium azide Constituents: Tris buffered saline, 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	SP6
Purification technique	Affinity purification Protein A
Specificity	ab21700 recognises Ki67.

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	If fixing cells in 4% PFA (10 min, room temp), it is recommended to permeabilized cells with 0.1% Triton-X for 5 min

Expected

Species	Mouse
Dilution info	-
Notes	If fixing cells in 4% PFA (10 min, room temp), it is recommended to permeabilized cells with 0.1% Triton-X for 5 min

Predicted

Species	Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Rat
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human

Dilution info	1/1
Notes	Antigen retrieval: Heat mediated antigen retrieval with sodium citrate buffer (pH 6.0).

Expected

Species	Mouse
Dilution info	1/1
Notes	Antigen retrieval: Heat mediated antigen retrieval with sodium citrate buffer (pH 6.0).

Predicted

Species	Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Rat
Dilution info	-
Notes	-

Target data

See full target information MKI67

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).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C

Notes

This product was switched from hybridoma to recombinant format on 25th October 2019.

Patented technology

Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Ki67 is a nuclear protein often referred to as MKI67 with a molecular weight of approximately 345 kDa. This protein is strongly associated with cell proliferation. Scientists commonly use Ki67 staining techniques to identify and quantify proliferating cells in tissues. Ki67 is expressed in the nucleus during active cell cycle phases—G1 S G2 and M—but not in resting cells in G0 phase. It is detectable through methods such as Ki67 immunofluorescence and Ki67 flow cytometry which are important for analyzing cell division.
Biological function summary	The Ki67 protein plays an essential role in cellular proliferation processes. It does not form part of a stable complex but interacts transiently with other cell cycle-related proteins. Research indicates that Ki67 maintains the structure of the perichromosomal layer during mitosis impacting chromosome separation. It is particularly active in tissues with high cell turnover such as bone marrow and lymphoid organs.
Pathways	Ki67 influences several key cellular pathways that control cell proliferation and differentiation. The protein acts within the regulation of the cell cycle and the PI3K/AKT signaling pathway important for cell growth and survival. Within these pathways Ki67 interacts with proteins like cyclin-dependent kinases (CDKs) which regulate transitions between different phases of the cell cycle.
Associated diseases and disorders	Ki67 has significant implications in oncology and can be used as a biomarker for cancer prognosis. Its expression levels help determine the aggressiveness of tumors especially in breast cancer and prostate cancer. High Ki67 levels correlate with poor prognosis as it indicates rapid cell division. In cancer Ki67 associates with p53 a protein that regulates the cell cycle and function as a tumor suppressor.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

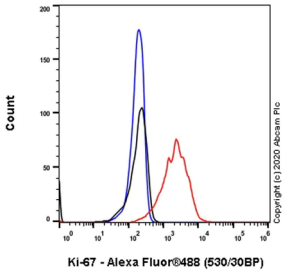
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

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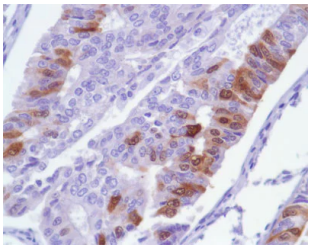
8 product images



Flow Cytometry (Intracellular) - Anti-Ki67 antibody [SP6], prediluted (ab21700)

Ki67 Flow Cytometry (Intracellular) staining of HAP1 cells using rabbit Anti-Ki67 antibody

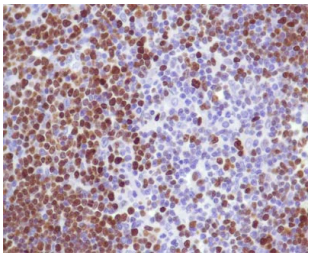
Intracellular flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized parental HAP1 (Wildtype controlHuman chronic myelogenous leukemianear-haploid cell line) cells labelling Ki67 with ab16667 at 1/500 dilution (0.1ug) (Red) compared with a Rabbit monoclonal IgG (ab172730)(Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat anti rabbit IgG (Alexa Fluor® 488 ab150077) at 1/2000 dilution was used as the secondary antibody.
This data was developed using ab16667, the same antibody clone in a different buffer formulation.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Ki67 antibody [SP6], prediluted (ab21700)

Ki67 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Ki67 antibody

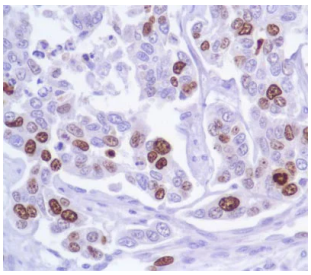
Immunohistochemical analysis of formalin-fixed, paraffin-embedded Human endometrial adenocarcinoma tissue, staining Ki67 with ab21700.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Ki67 antibody [SP6], prediluted (ab21700)

Ki67 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Ki67 antibody

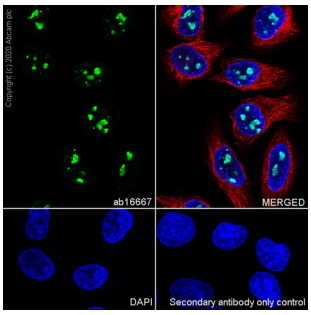
Immunohistochemical analysis of formalin-fixed, paraffin-embedded Human thymus tissue, staining Ki67 with ab21700.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Ki67 antibody [SP6], prediluted (ab21700)

Ki67 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Ki67 antibody

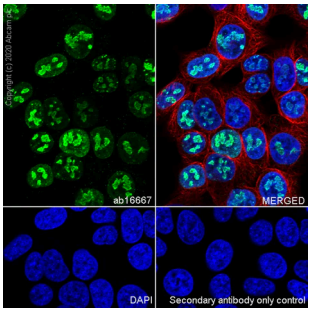
Immunohistochemical analysis of formalin-fixed, paraffin-embedded Human breast adenocarcinoma tissue, staining Ki67 with ab21700.



Immunocytochemistry/ Immunofluorescence - Anti-Ki67 antibody [SP6], prediluted (ab21700)

Ki67 Immunocytochemistry/ Immunofluorescence staining of HeLa cells using rabbit Anti-Ki67 antibody

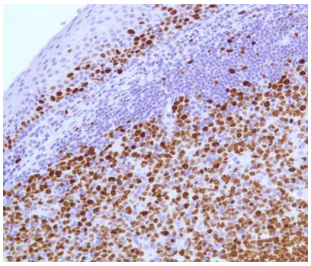
This data was developed using ab16667, the same antibody clone in a different buffer formulation. Immunofluorescent analysis of 100% methanol-fixed None permeabilized HeLa cells labelling Ki67 with ab16667 at 1/1000 dilution followed by ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) antibody at 1/1000 dilution (2 µg/mL) (Green). Confocal image showing nucleolar staining in HeLa cell line ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 dilution (2.5 µg/mL) (Red). The Nuclear counterstain was DAPI (Blue).Secondary antibody only control: Secondary antibody is ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1000 dilution (2 µg/mL).



Immunocytochemistry/ Immunofluorescence - Anti-Ki67 antibody [SP6], prediluted (ab21700)

Ki67 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Ki67 antibody

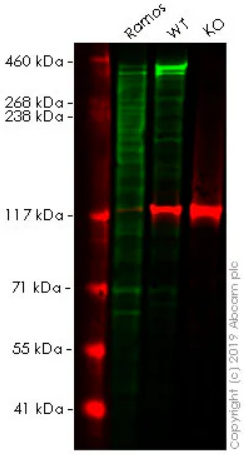
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Secondary antibody only control: Secondary antibody is ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1000 dilution (2 µg/mL).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Ki67 antibody [SP6], prediluted (ab21700)

Ki67 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Ki67 antibody

Immunohistochemical analysis of formalin-fixed, paraffin-embedded Human tonsil tissue, staining Ki67 with ab21700.



Western blot - Anti-Ki67 antibody [SP6], prediluted (ab21700)

Ki67 Western blot staining using rabbit Anti-Ki67 antibody

This data was developed using the same antibody clone in a different buffer formulation (ab16667).
Lanes 1 - 3: Merged signal (red and green). Green - ab16667 observed at 359 kDa. Red - loading control, ab130007 observed at 125 kDa.

ab16667 was shown to react with Ki67 in wild-type HeLa cells. Loss of signal was observed when knockout cell line ab255407 (knockout cell lysate ab263762) was used. Wild-type and Ki67 knockout samples were subjected to SDS-PAGE. ab16667 and Anti-Vinculin antibody [VIN-54] (ab130007) were incubated overnight at 4°C at 1 in 100 dilution and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-Ki67 antibody [SP6] (ab16667) at 1/100 dilution

Lane 1:
Ramos cell lysate at 20 µg

Lane 2:
Wild-type HeLa cell lysate at 20 µg

Lane 3:
Western blot - Human MKI67 (Ki67) knockout HeLa cell lysate (ab263762) at 20 µg

Secondary

All lanes:
Western blot - Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) at 1/20000 dilution

Performed under reducing conditions.

Predicted band size: 358 kDa

Observed band size: 124 kDa, 359 kDa

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