abcam

ab156956

Anti-Ki67 antibody [OTI5D7]

Anti-Ki67 antibody [OTI5D7] (ab156956) is a rat monoclonal antibody detecting Ki67 in **Flow Cytometry (Intra), IHC-P**. Suitable for **Human**.

- Over 40 publications

Key facts

Isotype	IgG1
Host species	Rat
Storage buffer	pH: 7.3 Preservative: 0.02% Sodium azide Constituents: PBS, 50% Glycerol (glycerin, glycerine), 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Fragment Protein within Human MKI67 aa 1150 to C-terminus. The exact immunogen used to generate this antibody is proprietary information. Database link P46013
Clone number	OTI5D7
Purification technique	Affinity purification Protein A
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	ab156956 was purified from cell culture supernatant by affinity chromatography.

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/150
Notes	Heat-induced epitope retrieval by 10mM citric buffer, pH6.0, 120 for 3min.

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/100
Notes	ab18407 - Rat monoclonal IgG1, is suitable for use as an isotype control with this antibody.

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	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

What is this antibody validated in?
Anti-Ki67 antibody [OTI5D7] (ab156956) is a rat monoclonal antibody and is validated for use in Flow Cytometry (Intra), Immunohistochemistry (IHC-P) in Human samples.

Trusted by the scientific community
Anti-Ki67 [OTI5D7] (ab156956) was first used in a scientific publication in 2013 and has been cited over 40 times in peer-reviewed journals.

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

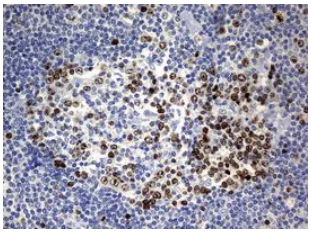
We do not recommend this combination. It is not covered by our product promise.

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.

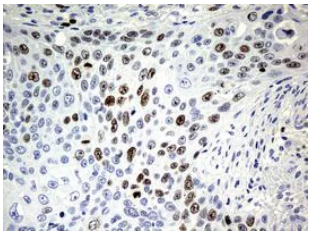
9 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Ki67 antibody [OTI5D7] (ab156956)

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

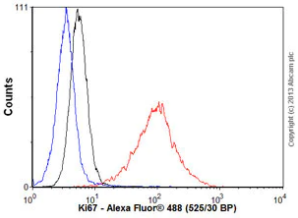
Immunohistochemical analysis of paraffin-embedded Human lymphoma tissue labeling Ki67 with ab156956 at 1/150 dilution. Heat-induced epitope retrieval by 10mM citric buffer, pH6.0, 120C for 3min.



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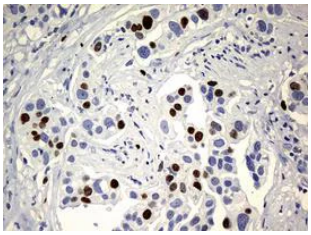
Immunohistochemical analysis of paraffin-embedded Human lung carcinoma tissue labeling Ki67 with ab156956 at 1/150 dilution. Heat-induced epitope retrieval by 10mM citric buffer, pH6.0, 120C for 3min.



Flow Cytometry (Intracellular) - Anti-Ki67 antibody [OTI5D7] (ab156956)

Ki67 Flow Cytometry (Intracellular) staining using rat Anti-Ki67 antibody

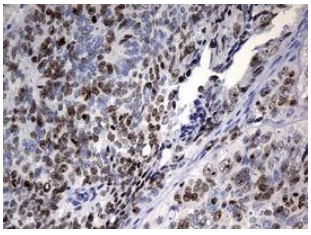
Overlay histogram showing Ramos cells stained with ab156956 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab156956, 1/10000 dilution) for 30 min at 22°C. The secondary antibody used was Alexa Fluor® 488 goat anti-rabbit IgG (H&L) (ab150077) at 1/2000 dilution for 30 min at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) (0.1µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line) was also used as a control. Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter. This antibody gave a positive signal in Ramos cells fixed with 4% paraformaldehyde (10 min)/permeabilized with 0.1% PBS-Tween for 20 min used under the same conditions.



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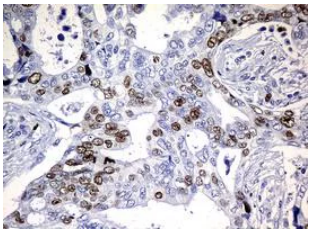
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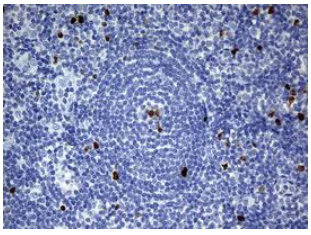
Immunohistochemical analysis of paraffin-embedded Human endometrium adenocarcinoma tissue labeling Ki67 with ab156956 at 1/150 dilution. Heat-induced epitope retrieval by 10mM citric buffer, pH6.0, 120C for 3min.



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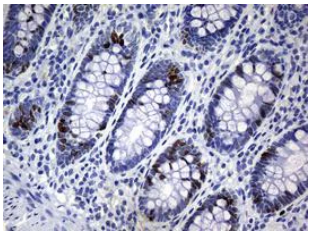
Immunohistochemical analysis of paraffin-embedded Human breast adenocarcinoma tissue labeling Ki67 with ab156956 at 1/150 dilution. Heat-induced epitope retrieval by 10mM citric buffer, pH6.0, 120C for 3min.



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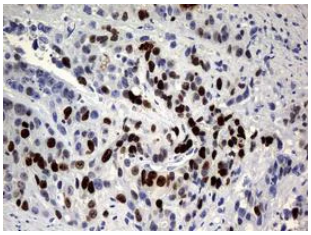
Immunohistochemical analysis of paraffin-embedded Human tonsil tissue labeling Ki67 with ab156956 at 1/150 dilution. Heat-induced epitope retrieval by 10mM citric buffer, pH6.0, 120C for 3min.



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

Immunohistochemical analysis of paraffin-embedded Human colon tissue labeling Ki67 with ab156956 at 1/150 dilution. Heat-induced epitope retrieval by 10mM citric buffer, pH6.0, 120C for 3min.



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Immunohistochemical analysis of paraffin-embedded Human colon adenocarcinoma tissue labeling Ki67 with ab156956 at 1/150 dilution. Heat-induced epitope retrieval by 10mM citric buffer, pH6.0, 120C for 3min.

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