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Anti-Mouse/Human Ki-67 Antibody

Catalog Number:	202401, 202402
Size:	100 ug, 500 ug
Target Name:	Ki-67, Ki67
Regulatory Status:	RUO

PRODUCT DETAILS

Clone:	K67AR2b
Application:	Ki-67 Intracellular Flow Cytometry
Reactivity:	Human, Mouse
Format:	Purified
Isotype:	Rat IgG2b
Antibody Type:	Monoclonal
Formulation:	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide
Protein Concentration:	0.5 mg/mL
Storage&Handling:	The antibody solution should be stored between 2°C and 8°C
Recommended Usage:	For flow cytometric staining, it is recommended to use less than 0.25 µg of this reagent per 0.5-1.0 million cells in a 100 µL volume. Optimal reagent performance should be determined by titration for each specific application
Isotype Control:	300301
RRID:	AB_3739090

BACKGROUND INFORMATION

Ki-67 is a nuclear protein strictly associated with cellular proliferation and is widely used as a biomarker in pathology and cancer research. It was first identified in the early 1980s during the search for antigens expressed in proliferating cells. The Ki-67 protein is encoded by the MKI67 gene located on chromosome 10 and is present during all active phases of the cell cycle (G1, S, G2, and M) but absent in resting (G0) cells. Because of this selective expression, Ki-67 serves as a reliable indicator of cell proliferation rates in both normal and tumor tissues.

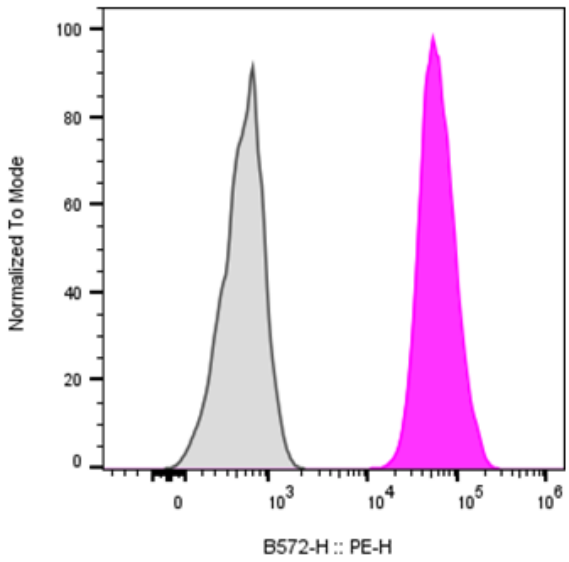
Structurally, Ki-67 is a large protein, approximately 320–360 kDa, composed of multiple functional domains. It contains a forkhead-associated (FHA) domain and a series of tandem repeats known as the Ki-67 repeats, which are recognized by monoclonal antibodies used in immunohistochemistry. The protein is primarily localized within the nucleolus during interphase and associates with the perichromosomal layer during mitosis. Its exact molecular function remains under study, but evidence suggests that Ki-67 contributes to chromatin organization, particularly in maintaining the structural integrity of chromosomes during cell division.

Ki-67 does not have conventional extracellular ligands, as it functions within the nucleus. However, it interacts with chromatin and several nuclear proteins that regulate the cell cycle and mitotic progression. Through these interactions, Ki-67 participates in

organizing heterochromatin and possibly in ribosomal RNA synthesis regulation, facilitating efficient cell proliferation.

Clinically, Ki-67 has substantial value in oncology as a proliferation marker. High Ki-67 labeling indices (a measure of the percentage of Ki-67–positive tumor cells) often correlate with aggressive behavior and poor prognosis in diverse cancers, including breast, prostate, and neuroendocrine tumors. It is routinely used to assess tumor grade, guide therapeutic decisions, and monitor responses to treatment. Although not a direct therapeutic target, Ki-67's presence informs clinicians about tumor growth dynamics and potential responsiveness to cytotoxic therapies. Ongoing research explores whether inhibiting pathways regulating Ki-67 expression or function could complement conventional anticancer strategies, potentially yielding more selective antiproliferative therapies in the future.

PRODUCT DATA



Human 293 cells stained either purified Anti-Mouse/Human Ki-67 clone K67AR2b (color-filled histogram) or an isotype control (gray histogram), followed by PE anti-Rat IgG.