Technical Data Sheet

BV786 Mouse Anti-Human Ki-67

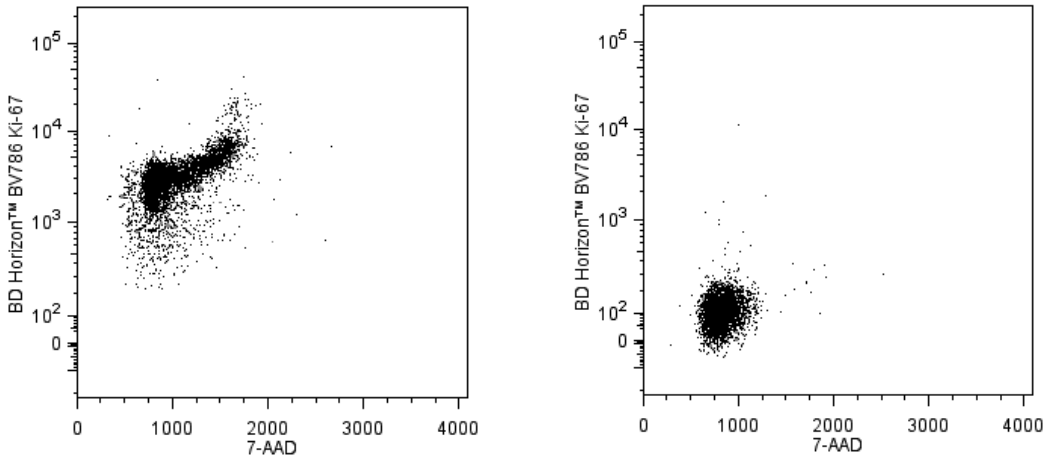
Product Information

Material Number:	**563756**
Alternate Name:	MKI67; Antigen identified by monoclonal antibody Ki-67; KIA
Size:	50 tests
Vol. per Test:	5 µl
Clone:	B56
Immunogen:	Human Ki-67
Isotype:	Mouse IgG1, κ
Reactivity:	QC Testing: Human Tested in Development: Mouse, Pig Reported Reactivity: Rat, Rhesus
Storage Buffer:	Aqueous buffered solution containing BSA and ≤0.09% sodium azide.

Description

The B56 monoclonal antibody specifically binds to the Ki-67 antigen that is expressed in the nucleus of cycling cells (G1, S, G2, M cell cycle phases). During the G0 phase, the antigen cannot be detected. During interphase of the cell cycle, it is associated with nucleolar components, and it is on the surface of the chromosomes during M phase. Ki-67 is a large protein having 2 alternatively spliced isoforms, an N-terminal forkhead-associated domain, a C-terminal domain that binds to heterochromatin proteins, and multiple phosphorylation sites, the functions of which are still unclear. Because of the strict association of Ki-67 expression with cell proliferation, anti-Ki-67 antibodies are useful for the identification, quantification, and monitoring of growing cell populations.

The antibody was conjugated to BD Horizon™ BV786 which is part of the BD Horizon™ Brilliant Violet™ family of dyes. This dye is a tandem fluorochrome of BD Horizon™ BV421 with an Ex Max of 405-nm and an acceptor dye with an Em Max at 786-nm. BD Horizon™ BV786 can be excited by the violet laser and detected in a filter used to detect Cy™7-like dyes (eg, 780/60-nm filter).



Two-color flow cytometric analysis of Ki-67 expression by proliferating MOLT-4 and noncycling human peripheral blood mononuclear cells. *Proliferating cells from the human MOLT-4 (T lymphoblastic leukemia, ATCC CRL-1582) cell line and noncycling peripheral blood mononuclear cells (PBMC) were fixed and permeabilized with 70% ice cold ethanol. The cells were washed twice with BD Pharmingen™ Stain Buffer (FBS) (Cat. No. 554656) and stained with BD Horizon™ BV786 Mouse Anti-Human Ki-67 antibody (Cat. No. 563756) according to the BD Biosciences support protocol, "Flow Cytometry Staining Protocol for Detection of Ki-67." The cells were then counterstained with BD Via-Probe™ [Cat. No. 555815/555816; contains 7-Amino-Actinomycin D (7-AAD)] to stain DNA. Two-color flow cytometric dot plots showing the correlated expression patterns of 7-AAD staining versus Ki-67 were derived from gated events with the forward and side light-scatter characteristics of intact MOLT-4 cells (Left Panel) or PBMC (Right Panel). Flow cytometric analysis was performed using a BD LSRFortessa™ Cell Analyzer System.*

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Preparation and Storage

Store undiluted at 4°C and protected from prolonged exposure to light. Do not freeze.

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

The antibody was conjugated with BD Horizon™ BV786 under optimum conditions, and unconjugated antibody and free BD Horizon™ BV786 were removed.

Application Notes

Application

Intracellular staining (flow cytometry)	Routinely Tested

Suggested Companion Products

Catalog Number	Name	Size	Clone
554656	Stain Buffer (FBS)	500 ml	(none)
563330	BV786 Mouse IgG1, k Isotype Control	50 µg	X40
555815	Cell Viability Solution	500 tests	(none)
555816	Cell Viability Solution	100 tests	(none)

Product Notices

1. This reagent has been pre-diluted for use at the recommended Volume per Test. We typically use 1 × 10^6 cells in a 100-µl experimental sample (a test).
2. An isotype control should be used at the same concentration as the antibody of interest.
3. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
4. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
5. Species testing during development may have been performed with a different format of the same clone. Selected applications have been tested for cross-reactivity.
6. Cy is a trademark of Amersham Biosciences Limited.
7. Brilliant Violet™ 421 is a trademark of Sirigen.
8. Brilliant Violet™ 786 is a trademark of Sirigen.
9. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
10. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.

References

Benson MJ, Elgueta R, Schpero W, Molloy M, Zhang W, Usherwood E, Noelle RJ. Distinction of the memory B cell response to cognate antigen versus bystander inflammatory signals. *J Exp Med.* 2009; 206(9):2013-2025. (Clone-specific: Flow cytometry)

Bigley V, Haniffa M, Doulatov S, et al. The human syndrome of dendritic cell, monocyte, B and NK lymphoid deficiency. *J Exp Med.* 2011; 208(2):227-234. (Clone-specific: Flow cytometry)

Bruno S, Crissman HA, Bauer KD, Darzynkiewicz Z. Changes in cell nuclei during S phase: progressive chromatin condensation and altered expression of the proliferation-associated nuclear proteins Ki-67, cyclin (PCNA), p105, and p34. *Exp Cell Res.* 1991; 196(1):99-106. (Biology: Flow cytometry)

Bruno S, Darzynkiewicz Z. Cell cycle dependent expression and stability of the nuclear protein detected by Ki-67 antibody in HL-60 cells. *Cell Prolif.* 1992; 25(1):31-40. (Biology: Flow cytometry)

Kill IR. Localisation of the Ki-67 antigen within the nucleolus: evidence for a fibrillarin-deficient region of the dense fibrillar component. *J Cell Sci.* 1996; 109(6):1253-1263. (Biology)

Kouro T, Medina KL, Oritani K, Kincade PW. Characteristics of early murine B-lymphocyte precursors and their direct sensitivity to negative regulators. *Blood.* 2001; 97(9):2708-2715. (Clone-specific: Flow cytometry)

Picker LJ, Hagen SI, Lum R, et al. Insufficient production and tissue delivery of CD4+ memory T cells in rapidly progressive simian immunodeficiency virus infection. *J Exp Med.* 2004; 200(10):1299-1314. (Clone-specific: Flow cytometry)

Scholzen T, Gerdes J. The Ki-67 protein: from the known and the unknown. *J Cell Physiol.* 2000; 182(3):311-322. (Biology)

Starborg M, Gell K, Brundell E, Höög C. The murine Ki-67 cell proliferation antigen accumulates in the nucleolar and heterochromatic regions of interphase cells and at the periphery of the mitotic chromosomes in a process essential for cell cycle progression. *J Cell Sci.* 1996; 109(1):143-153. (Biology)

Valenti LM, Mathieu J, Chancerelle Y, De Sousa M, Levacher M, Dinh-Xuan AT, Florentin I. High levels of endogenous nitric oxide produced after burn injury in rats arrest activated T lymphocytes in the first G1 phase of the cell cycle and then induce their apoptosis. *Exp Cell Res.* 2005; 306(1):150-167. (Clone-specific: Flow cytometry)

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