Technical Data Sheet

FITC Cyclin B1 Antibody Reagent Set

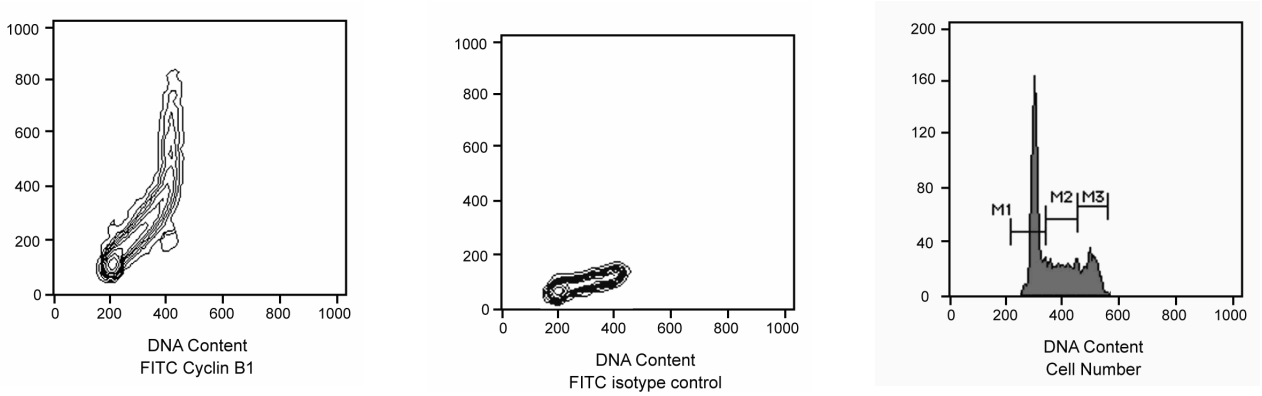
Product Information

Material Number:	**554108**
Component:	**51-13844X**
Description:	FITC Mouse Anti-Human Cyclin B1
Size:	100 tests (1 ea)
Clone Name:	GNS-1
Immunogen:	Human Cyclin B1 Recombinant Protein
Isotype:	Mouse IgG1
Storage Buffer:	Aqueous buffered solution containing BSA and ≤0.09% sodium azide.
Component:	**51-13854X**
Description:	FITC Mouse IgG1, kappa Isotype Control
Size:	100 tests (1 ea)
Clone Name:	MOPC-21
Isotype:	Mouse IgG1, κ
Storage Buffer:	Aqueous buffered solution containing BSA and ≤0.09% sodium azide.

Description

Cyclins and cyclin-dependent kinases (cdks) are evolutionarily conserved proteins that are essential for cell-cycle control in eukaryotes. Cyclins (regulatory subunits) bind to cdks (catalytic subunits) to form complexes that regulate the progression of the cell cycle. The main cyclin-cdks complexes formed in vertebrae cells are cyclin-cdks complexes that regulate the progression of the cell cycle. The main cyclin-cdks complexes formed in vertebrae cells are cyclin D-cdk4 (G0/G1), cyclin E-cdk2 (G1/S), cyclin A-cdk2 (S) and cyclin B1-cdk1 (G2/M). These complexes are regulated by activating and inhibitory phosphorylation events, as well as by interactions with small regulatory proteins including p21 and p27[Kip1]. Specific substrates for cdk-cyclin complexes include nuclear lamins, histones, oncogenes (e.g., c-abl and SV40 large T-Ag), tumor suppressor genes (e.g., retinoblastoma protein, Rb) nucleolin and others. Cyclin B1 is a mitotic cyclin complex; expression is normally low in G0/G1, increases in S, and is maximal during G2/M. Cyclin B1 is rapidly degraded at the end of mitosis and is required for cells to exit from mitosis.

GNS-1 recognizes an epitope between amino acids 1-21 of human Cyclin B1. It crossreacts with hamster and mouse cyclin B1. Recombinant human Cyclin B1 was used as immunogen. The antibody was originally characterized by western blot analysis, immunoprecipitation, immunohistochemical staining of acetone-fixed, frozen tissue sections and of formalin-fixed, paraffin-embedded tissue sections, indirect immunofluorescence microscopy of cultured cells and flow cytometry. MOPC-1 is used as a mouse IgG1 isotype (negative) control. The MOPC-21 antibody has unknown specificity. The GNS-1 and MOPC-21 FITC conjugates are matched in F/P ratios. The optimum F/P ratio was experimentally determined by flow cytometric analysis. MOLT4 human leukemia cells (ATCC CRL-1582) are recommended as a positive control for this application.



Cell cycle expression of cyclin B1. *Proliferating MOLT-4 human leukemia cells, fixed and permeabilized with cold 75% ethanol, were stained with (left) FITC-conjugated cyclin B1 (Cat. No. 51-13844X) (middle), or a FITC conjugated isotype control (Cat. No. 51-13854X) DNA was stained with propidium iodide. Cyclin B1 expression was low in G0/G1, increased in S and was maximal in G2/M. (right) Marker 1 (M1): G0/G1. Marker 2 (M2): S. Marker 3 (M3): G2/M.*

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Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.
The antibody was conjugated with FITC under optimum conditions, and unreacted FITC was removed.
Store undiluted at 4°C and protected from prolonged exposure to light. Do not freeze.

Application Notes

Application

Intracellular staining (flow cytometry)	Routinely Tested

Product Notices

1. This antibody has been optimized and preassayed with its matched isotype control to be used at the recommended volume of 20 ul/test. Titration of the reagents or substituting with other (non-matched) isotype control is NOT recommended.
2. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
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.

References

Cao L, Faha B, Dembski M, Tsai LH, Harlow E, Dyson N. Independent binding of the retinoblastoma protein and p107 to the transcription factor E2F. *Nature.* 1992; 355(6356):176-179. (Biology)
Gong J, Traganos F, Darzynkiewicz Z. Discrimination of G2 and mitotic cells by flow cytometry based on different expression of cyclins A and B1. *Exp Cell Res.* 1995; 220(1):226-231. (Biology)
Sherr CJ. Mammalian G1 cyclins. *Cell.* 1993; 73(6):1059-1065. (Biology)