

# Cyclin B1 (V152) Mouse mAb (Alexa Fluor® 647 Conjugate)

✓ 100 µl  
(50 tests)

New more concentrated formulation

**Orders** ■ 877-616-CELL (2355)  
orders@cellsignal.com

**Support** ■ 877-678-TECH (8324)  
info@cellsignal.com

**Web** ■ www.cellsignal.com

rev. 12/07/09

This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

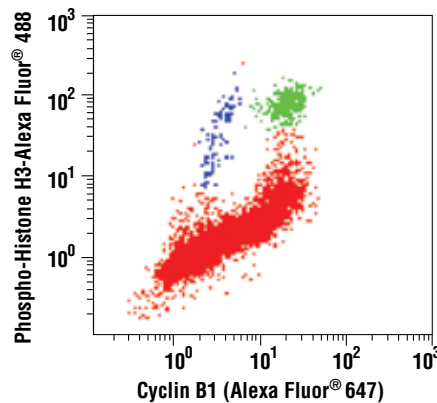
Applications	Species Cross-Reactivity	Source	Isotype
F	H	Mouse	IgG

**Background:** Entry of all eukaryotic cells into mitosis is regulated by activation of cdc2 kinase. Activation of cdc2 is controlled at several steps including cyclin B1 binding, phosphorylation of cdc2 at Thr161 and dephosphorylation of cdc2 at Thr14/Tyr15 (1-5). The protein levels of CDK inhibitors and the CDK-associated cyclins are regulated by phosphorylation, ubiquitination and degradation, allowing for a stoichiometric regulation of cell cycle events (6). Four cyclin B1 phosphorylation sites (Ser126, 128, 133 and 147) are located in the cytoplasmic retention signal (CRS) domain and are thought to regulate the translocation of cyclin B1 to the nucleus at the G2/M checkpoint (8-10). Phosphorylation of cyclin B1 is required for cdc25C-dependent dephosphorylation of Tyr15 within cdc2 and subsequent cdc2/cyclin B1 activation (11). While cdc2/cyclin B1 itself can phosphorylate Ser126 and Ser128 (8), polo-like kinase 1 phosphorylates cyclin B1 preferentially at Ser133 and possibly at Ser147 as well (11-13).

**Description:** Cell Signaling Technology Antibody conjugated to Alexa Fluor®647 fluorescent dye and tested in-house for direct Flow Cytometric analysis of human cells. The unconjugated antibody #4135 reacts with, among others, human, mouse and hamster Cyclin B1. CST expects that Cyclin B1 Mouse mAb (Alexa Fluor®647 conjugate) will also recognize Cyclin B1 in these species.

**Specificity/Sensitivity:** Cyclin B1 (V152) Mouse mAb (Alexa Fluor® 647 Conjugate) detects endogenous levels of cyclin B1 independent of phosphorylation.

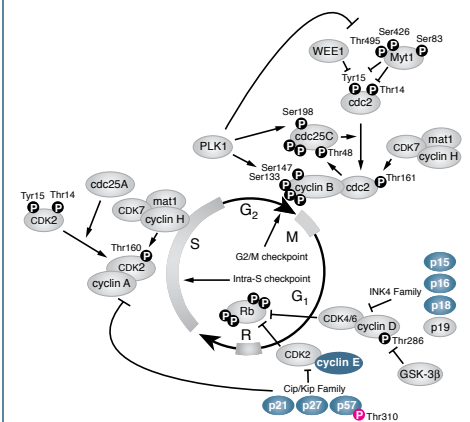
**Source/Purification:** Monoclonal antibody is produced by immunizing mice with a peptide corresponding to a sequence from hamster cyclin B1. The antibody was conjugated to Alexa Fluor® 647 under optimal conditions with an F/P ratio of 2-5. The Alexa Fluor® 647 dye is maximally excited by red light (e.g. 633 nm He-Ne laser). Antibody conjugates of the Alexa Fluor® 647 dye produce bright far-red-fluorescence emission, with a peak at 665 nm.



Two-color flow cytometric analysis of asynchronous Jurkat cells, using Cyclin B1 (V152) Alexa Fluor® 647 Conjugate and Phospho-Histone H3 (Ser10) Alexa Fluor® 488 Conjugate (#9708). Cells represented in green are positive for Cyclin B1 and Phospho-Histone H3, while cells represented in blue are positive for Phospho-Histone H3 and negative for Cyclin B1. Both cell populations (green and blue) correspond to cells undergoing mitosis.

## Background References:

- (1) Norbury, C. and Nurse, P. (1992) *Annu. Rev. Biochem.* 61, 441-470.
- (2) Atherton-Fessler, S. et al. (1993) *Mol. Cell. Biol.* 13, 1675-1685.
- (3) Watanabe, N. et al. (1995) *EMBO J.* 14, 1878-1891.
- (4) Galaktionov, K. et al. (1995) *Genes Dev.* 9, 1046-1058.
- (5) Hunter, T. et al. (1995) *Cell* 80, 225-236.
- (6) Diehl, J.A. et al. (1997) *Genes Dev.* 11, 957-972.
- (7) McGowan, C.H. et al. (1993) *EMBO J.* 12, 75-85.
- (8) Izumi, T. et al. (1991) *Mol. Cell. Biol.* 11, 3860-3867.
- (9) Li, J. et al. (1995) *Mol. Biol. Cell* 6, 1111-1124.
- (10) Li, J. et al. (1997) *Proc. Natl. Acad. Sci. USA* 94, 502-507.
- (11) Toyoshima-Morimoto, F. et al. (2001) *Nature* 410, 215-220.
- (12) Peter, M. et al. (2002) *EMBO Rep.* 3, 551-556.
- (13) Jackman, M. et al. (2003) *Nat. Cell Biol.* 5, 143-148.



The Alexa Fluor® dye antibody conjugates in this product are sold under license from Molecular Probes, Inc., for research use only, except for use in combination with DNA microarrays. The Alexa Fluor® dyes (except for Alexa Fluor® 430 dye) are covered by pending and issued patents.

Alexa Fluor® is a registered trademark of Molecular Probes, Inc.

**Applications Key:** W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide  
**Species Cross-Reactivity Key:** H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine  
 Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected