

#12231 Store at -20°C

# Cyclin B1 (D5C10) XP® Rabbit mAb



**Cell Signaling**  
TECHNOLOGY®

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

**Support:** 877-678-TECH (8324)

**Web:** info@cellsignal.com  
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

**For Research Use Only. Not for Use in Diagnostic Procedures.**

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, W-S, IP, IF-IC, FC-FP	H R	Endogenous	55	Rabbit IgG	#P14635	891

## Product Usage Information

### Application

Western Blotting  
Simple Western™  
Immunoprecipitation  
Immunofluorescence (Immunocytochemistry)  
Flow Cytometry (Fixed/Permeabilized)

### Dilution

1:1000  
1:10 - 1:50  
1:100  
1:400 - 1:1600  
1:200 - 1:800

## Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

For a carrier free (BSA and azide free) version of this product see product #65173.

## Specificity / Sensitivity

Cyclin B1 (D5C10) XP® Rabbit mAb recognizes endogenous levels of total cyclin B1 protein. This antibody also detects a 100 kDa protein of unknown origin in some cell lines.

## Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the amino terminus of human cyclin B1 protein.

## Background

Cyclins are a family of proteins that activate specific cyclin-dependent kinases required for progression through the cell cycle. The entry of all eukaryotic cells into mitosis is regulated by activation of cdc2/cdk1 at the G2/M transition. This activation is a multi-step process that begins with the binding of the regulatory subunit, cyclin B1, to cdc2/cdk1 to form the mitosis-promoting factor (MPF). MPF remains in the inactive state until phosphorylation of cdc2/cdk1 at Thr161 by cdk activating kinase (CAK) (1,2) and dephosphorylation of cdc2/cdk1 at Thr14/Tyr15 by cdc25C (3-5). Five cyclin B1 phosphorylation sites (Ser116, 126, 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, promoting nuclear accumulation and initiation of mitosis (6-9). While MPF itself can phosphorylate Ser126 and Ser128, polo-like kinase 1 (PLK1) phosphorylates cyclin B1 preferentially at Ser133 and possibly at Ser147 (6,10). At the end of mitosis, cyclin B1 is targeted for degradation by the anaphase-promoting complex (APC), allowing for cell cycle progression (11). Research studies have shown that cyclin B1 is overexpressed in breast, prostate, and non-small cell lung cancers (12-14).

## Background References

- Lorca, T. et al. (1992) *EMBO J* 11, 2381-90.
- Harper, J.W. and Elledge, S.J. (1998) *Genes Dev* 12, 285-9.
- Norbury, C. et al. (1991) *EMBO J* 10, 3321-9.
- McGowan, C.H. and Russell, P. (1993) *EMBO J* 12, 75-85.
- Atherton-Fessler, S. et al. (1994) *Mol Biol Cell* 5, 989-1001.
- Toyoshima-Morimoto, F. et al. (2001) *Nature* 410, 215-20.
- Li, J. et al. (1997) *Proc Natl Acad Sci U S A* 94, 502-7.
- Takizawa, C.G. and Morgan, D.O. (2000) *Curr Opin Cell Biol* 12, 658-65.
- Santos, S.D. et al. (2012) *Cell* 149, 1500-13.
- Jackman, M. et al. (2003) *Nat Cell Biol* 5, 143-8.
- Gong, D. and Ferrell, J.E. (2010) *Mol Biol Cell* 21, 3149-61.
- Mashal, R.D. et al. (1996) *Cancer Res* 56, 4159-63.
- Kawamoto, H. et al. (1997) *Am J Pathol* 150, 15-23.
- Soria, J.C. et al. (2000) *Cancer Res* 60, 4000-4.

## Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

**Western Blot Buffer**

**IMPORTANT:** For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

**Applications Key**

**WB:** Western Blotting **W-S:** Simple Western™ **IP:** Immunoprecipitation  
**IF-IC:** Immunofluorescence (Immunocytochemistry) **FC-FP:** Flow Cytometry (Fixed/Permeabilized)

**Cross-Reactivity Key**

**H:** human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **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  
**GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

**Trademarks and Patents**

Cell Signaling Technology is a trademark of Cell Signaling Technology, Inc.  
Alexa Fluor is a registered trademark of Life Technologies Corporation.  
All other trademarks are the property of their respective owners. Visit [cellsignal.com/trademarks](https://cellsignal.com/trademarks) for more information.

**Limited Uses**

Except as otherwise expressly agreed in a writing signed by a legally authorized representative of CST, the following terms apply to Products provided by CST, its affiliates or its distributors. Any Customer's terms and conditions that are in addition to, or different from, those contained herein, unless separately accepted in writing by a legally authorized representative of CST, are rejected and are of no force or effect.

Products are labeled with For Research Use Only or a similar labeling statement and have not been approved, cleared, or licensed by the FDA or other regulatory foreign or domestic entity, for any purpose. Customer shall not use any Product for any diagnostic or therapeutic purpose, or otherwise in any manner that conflicts with its labeling statement. Products sold or licensed by CST are provided for Customer as the end-user and solely for research and development uses. Any use of Product for diagnostic, prophylactic or therapeutic purposes, or any purchase of Product for resale (alone or as a component) or other commercial purpose, requires a separate license from CST. Customer shall (a) not sell, license, loan, donate or otherwise transfer or make available any Product to any third party, whether alone or in combination with other materials, or use the Products to manufacture any commercial products, (b) not copy, modify, reverse engineer, decompile, disassemble or otherwise attempt to discover the underlying structure or technology of the Products, or use the Products for the purpose of developing any products or services that would compete with CST products or services, (c) not alter or remove from the Products any trademarks, trade names, logos, patent or copyright notices or markings, (d) use the Products solely in accordance with CST Product Terms of Sale and any applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.