Technical Data Sheet

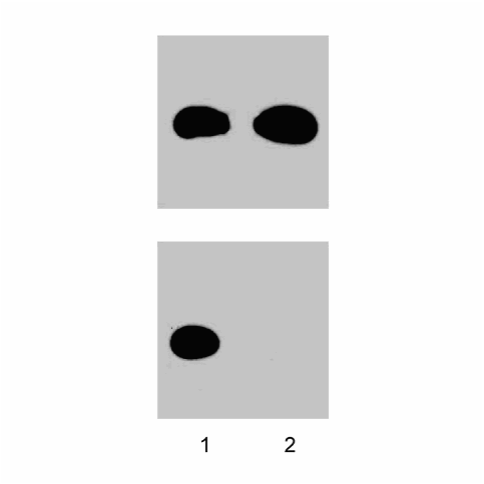
Purified Mouse Anti-Cdk1/Cdc2 (pY15)

Product Information

Material Number:	**612306**
Alternate Name:	p34 [cdc2]
Size:	50 µg
Concentration:	250 µg/ml
Clone:	44/Cdk1/Cdc2 (pY15)
Immunogen:	Phosphorylated Human Cdc2 (pY15) Peptide
Isotype:	Mouse IgG1
Reactivity:	QC Testing: Human Predicted: Mouse, Rat
Target MW:	34 kDa
Storage Buffer:	Aqueous buffered solution containing BSA, glycerol, and ≤0.09% sodium azide.

Description

Progression of the mammalian cell cycle is regulated by phosphorylation of many key proteins. Several classes of cyclins (A-E) act as regulatory subunits for cyclin-dependent kinases (cdks). Cdk1/Cdc2 (p34 [cdc2]) is the catalytic subunit of the maturation promoting factor (MPF), which includes the regulatory subunit cyclin B. During late S and G2 phase, cyclin B synthesis increases, allowing it to bind Cdc2. This begins the transition into M-phase of the mammalian cell cycle by initiating a series of phosphorylation and dephosphorylation events that lead to activation of the Cdc2/cyclin B complex. After binding to cyclin B, cdc2 is phosphorylated on Thr-14, by Myt1, and Tyr-15, by wee1 or mik1, yielding an inactive pre-MPF complex during G2 phase. Phosphorylation of cdc2 on Thr-161 is performed by a cdk7/cyclin H complex and is necessary for activation of the cdc2 complex. Dephosphorylation of Thr-14 and Tyr-15 by CDC25 occurs at the end of G2 phase and completes activation of the cdc2/Cyclin B complex and facilitates entry into mitosis. During mitosis, cyclin B is targeted for degradation and Cdc2 becomes inactive again.



Western blot analysis for Cdk1/Cdc2 (pY15). *Cell lysates were prepared from Saos-2 cells (Human osteosarcoma; ATCC HTB-85) and were either left untreated (lane 1) or treated (lane 2) with 50 µg/ml alkaline phosphatase for 30 minutes at 37°C. The top panel was probed with a mouse anti-Cdk1 antibody (Cat. No. 610037) and the bottom panel was probed with the mouse anti-Cdk1/Cdc2 (pY15) antibody at a 1:250 dilution with an expected band ~ 34 kDa.*

Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.
Store undiluted at -20°C.

Application Notes

Application

Western blot	Routinely Tested
Immunofluorescence	Tested During Development

Recommended Assay Procedure:

Western blot: Please refer to http://www.bdbiosciences.com/pharmingen/protocols/Western_Blotting.shtml

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Suggested Companion Products

Catalog Number	Name	Size	Clone
554002	HRP Goat Anti-Mouse Ig	1.0 ml	(none)
554001	FITC Goat Anti-Mouse Ig	0.5 mg	Polyclonal
610037	Purified Mouse Anti-Cdk1	50 µg	1/Cdk1/Cdc2

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
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

Borgne A, Meijer L. Sequential dephosphorylation of p34(cdc2) on Thr-14 and Tyr-15 at the prophase/metaphase transition. *J Biol Chem.* 1996; 271(44):27847-27854.(Biology)

Uckun FM, Tuel-Ahlgren L, Waddick KG, et al. Physical and functional interactions between Lyn and p34cdc2 kinases in irradiated human B-cell precursors. *J Biol Chem.* 1996; 271(11):6389-6397.(Biology)