Technical Data Sheet

Purified Mouse Anti-Cdk4

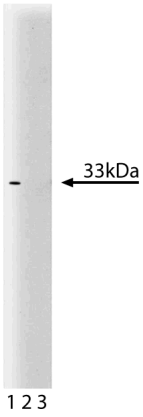
Product Information

Material Number:	**610148**
Size:	150 µg
Concentration:	250 µg/ml
Clone:	97/Cdk4
Immunogen:	Rat Cdk4 aa. 1-303
Isotype:	Mouse IgG1
Reactivity:	QC Testing: Mouse Tested in Development: Human, Rat
Target MW:	33 kDa
Storage Buffer:	Aqueous buffered solution containing BSA, glycerol, and ≤0.09% sodium azide.

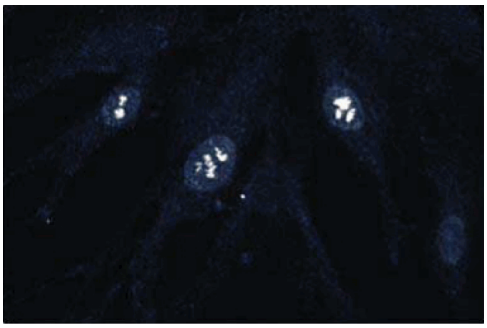
Description

The Cdk4 kinase is a cell cycle-regulated cyclin-dependent kinase that associates with cyclins D1, D2, and D3. In macrophages and fibroblasts, Cdk4-Cyclin D1 complexes are predominant. Much like Cdk2 and Cdc2, the activity of Cdk4 is regulated by association with its respective kinase and by phosphorylation of specific threonine residues. The cdk-activating kinase (CAK) is a regulator of cdk-cyclin activity by virtue of its ability to phosphorylate single threonine residues on Cdk2, Cdc2, and Cdk4. Active Cdk4-Cyclin D1 complexes are capable of phosphorylating the retinoblastoma gene product (pRb), but not histone H1 or casein. Formation of the Cdk4-Cyclin D holoenzyme and phosphorylation of the catalytic subunit appear to be independently regulated. Therefore, other cellular factors may be necessary for stabilization of this protein complex in order to facilitate the phosphorylation of Cdk4. An inhibitor of Cdk4 kinase activity, known as p16, has been identified and partially characterized. The p16 gene appears to be altered in many tumors, suggesting that this is a tumor suppressor gene. It is thought that p16 inhibition of Cdk4-Cyclin D interferes with cell cycle progression by preventing phosphorylation of pRb by Cdk4 and the subsequent release of factors that activate transcription.

This antibody is routinely tested by western blot analysis. Other applications were tested at BD Biosciences Pharmingen during antibody development only or reported in the literature.



Western blot analysis of Cdk4 on a RSV-3T3 lysate. *Lane 1: 1:250, lane 2: 1:500, lane 3: 1:1000 dilution of the anti- Cdk4 antibody.*



Immunofluorescence staining of human fibroblasts.

Preparation and Storage

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

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Application Notes

Application

Western blot	Routinely Tested
Immunofluorescence	Tested During Development
Immunoprecipitation	Tested During Development
Immunohistochemistry-formalin (antigen retrieval required)	Not Recommended

Suggested Companion Products

Catalog Number	Name	Size	Clone
554002	HRP Goat Anti-Mouse Igs	1.0 ml	(none)
554001	FITC Goat Anti-Mouse Igs	0.5 mg	Polyclonal

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

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Kato J, Matsushime H, Hiebert SW, Ewen ME, Sherr CJ. Direct binding of cyclin D to the retinoblastoma gene product (pRb) and pRb phosphorylation by the cyclin D-dependent kinase CDK4. *Genes Dev.* 1993; 7(3):331-342.(Biology)

Saitoh H, Pizzi MD, Wang J. Perturbation of SUMOlation enzyme Ubc9 by distinct domain within nucleoporin RanBP2/Nup358. *J Biol Chem.* 2002; 277(7):4755-4763.(Biology: Immunofluorescence)

Xiong Y, Zhang H, Beach D. D type cyclins associate with multiple protein kinases and the DNA replication and repair factor PCNA. *Cell.* 1992; 71(3):505-514. (Biology)