Technical Data Sheet

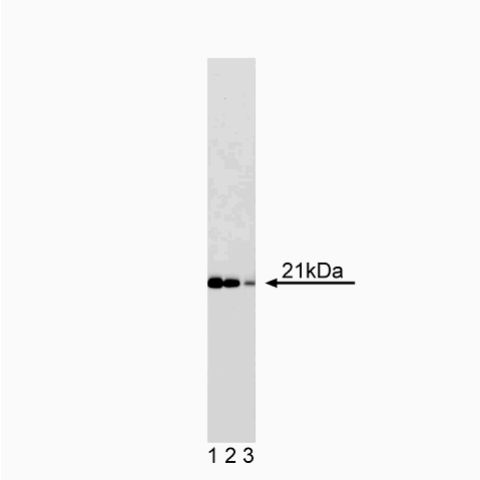
Purified Mouse Anti-Human Cip1

Product Information

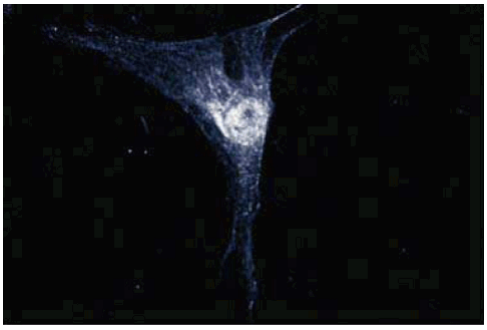
Material Number:	**610234**
Alternate Name:	WAF1
Size:	150 µg
Concentration:	250 µg/ml
Clone:	70/Cip1/WAF1
Immunogen:	Human Cip1 aa. 1-150
Isotype:	Mouse IgG2a
Reactivity:	QC Testing: Human
Target MW:	21 kDa
Storage Buffer:	Aqueous buffered solution containing BSA, glycerol, and ≤0.09% sodium azide.

Description

Cip1 (p21) was identified as an inhibitor of cdk activity in a quaternary complex that also included Cyclin D, Cdk4, and PCNA. It has subsequently been shown that Cip1 can directly bind to and inhibit each member of the cdk family, though the affinities vary for each enzyme. Several studies indicate that Cip1 expression is regulated by the p53 tumor suppressor protein. For example, following DNA damage, *Cip1* becomes transcriptionally induced in a p53-dependent manner. Thus, Cip1 protein may have a prominent role in mediating cell cycle arrest. Cip1 is also a component of active cyclin/cdk kinases. It has been suggested that Cip1-containing enzymes may transition between active and inactive states through changes in Cip1 stoichiometry. Active complexes appear to contain a single Cip1 molecule, while the inactive complexes have multiple Cip1 subunits. When multiple subunits are complexed with a cdk, cyclin, and PCNA, these Cip1 molecules can block the access of cdk-activating kinase (CAK) to cdk, thus preventing its phosphorylation and activation. However, inhibition of cdk activity by Cip1 does not appear to be dependent upon this mechanism. Other studies on DNA replication indicate that Cip1 can inhibit this process in vitro by directly binding to PCNA, a DNA polymerase-δ processivity factor.



Western blot analysis of Cip1 on a WI-38 cell lysate (Human lung fibroblasts; ATCC CCL-75). *Lane 1: 1:250, lane 2: 1:500, lane 3: 1:1000 dilution of the mouse anti-human Cip1 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	Not Recommended
Immunohistochemistry	Not Recommended

Recommended Assay Procedure:

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

Suggested Companion Products

Catalog Number	Name	Size	Clone
611476	WI-38 Cell Lysate	500 µg	(none)
554002	HRP Goat Anti-Mouse Ig	1.0 ml	(none)
554001	FITC Goat Anti-Mouse Ig	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

Carrano AC, Pagano M. Role of the F-box protein Skp2 in adhesion-dependent cell cycle progression. *J Cell Biol.* 2001; 153(7):1381-1389.(Biology: Western blot)

Cheng L, Lloyd RV, Weaver AL. The cell cycle inhibitors p21WAF1 and p27KIP1 are associated with survival in patients treated by salvage prostatectomy after radiation therapy. *Clin Cancer Res.* 2000; 6(5):1896-1899.(Biology: Immunohistochemistry)

Dulic V, Stein GH, Far DF, Reed SI. Nuclear accumulation of p21Cip1 at the onset of mitosis: a role at the G2/M-phase transition. *Mol Cell Biol.* 1998; 18(1):546-557.(Biology: Immunofluorescence, Western blot)

Fima E, Shtutman M, Libros P. PKCeta enhances cell cycle progression, the expression of G1 cyclins and p21 in MCF-7 cells. *Oncogene.* 2001; 20(46):6794-6804.(Biology: Immunoprecipitation, Western blot)

Yan Z, Deng X, Friedman E. Oncogenic Ki-ras confers a more aggressive colon cancer phenotype through modification of transforming growth factor-beta receptor III. *J Biol Chem.* 2001; 276(2):1555-1563.(Biology: Western blot)