Technical Data Sheet

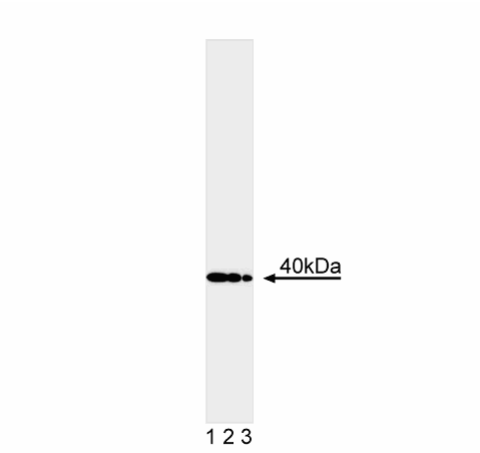
Purified Mouse Anti-Human CDK7

Product Information

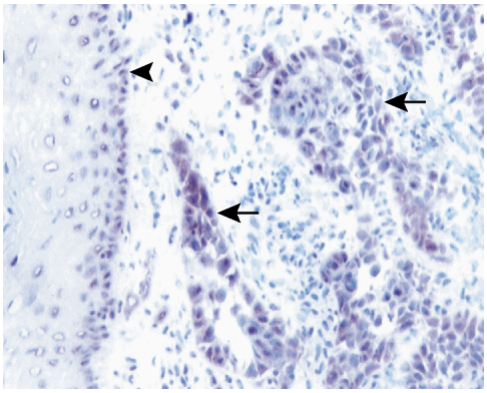
Material Number:	**556345**
Size:	0.1 mg
Concentration:	0.5 mg/ml
Clone:	MO-1
Immunogen:	Recombinant Human Cdk7
Isotype:	Mouse IgG2b, κ
Reactivity:	QC Testing: Human
Target MW:	40 kDa
Storage Buffer:	Aqueous buffered solution containing ≤0.09% sodium azide.

Description

Cyclins and cyclin-dependent kinases (Cdks) are subunits of cell cycle dependent protein kinases that regulate key events during the cell cycle. For orderly progression to take place, Cdks must become fully active only at appropriate times in the cell cycle, and only in appropriate subcellular locations. For example, Cdk2 is activated during the S and G2 phases of the cell cycle and is associated with cyclins A and E. The monomeric form of Cdk2 is inactive as a kinase, its conformation has multiple steric impediments to catalysis. Activation occurs in two steps, and is accompanied by conformational changes that remove the steric hindrances. The first step is the binding of a single Cdk2 monomer to a single molecule of cyclin. This allows for some enzymatic activity, but full activation of Cdk2 and all other known Cdks requires phosphorylation of a conserved threonine residue. Cak (for Cdk-activating kinase) has been shown to phosphorylate the threonine residue and activate Cdk2/cyclin complexes. Cak is itself a cyclin/Cdk complex consisting of cyclin H and Cdk7. Cyclin H is the regulatory subunit of the Cak enzyme, whereas Cdk7 is the catalytic subunit. Thus, Cak functions as a regulator of other cyclin/kinase complexes, suggesting that cyclin/kinase cascades may exist. Cdk7 migrates as a single band at a reduced molecular weight of 36-42 kDa. The MO-1 antibody recognizes human Cdk7.5 Recombinant human Cdk7 was used as an immunogen.



Western blot analysis of Cdk7. *Lysate from A-431 human epidermal carcinoma cells was probed with the MO-1 antibody (Cat. No. 556345). Cdk7 is identified at ~40 kDa.*



Frozen tissue section of human straified squamous carcinoma stained for Cdk7. *A DAB chromogen and Hematoxylin counterstain is used. Cdk7 expression is identified in both normal epithelium (arrowhead) and tumor cells (arrows).*

Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.
Store undiluted at 4°C.

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Application Notes

Application

Western blot	Routinely Tested
Immunofluorescence	Reported
Immunohistochemistry-frozen	Reported
Immunoprecipitation	Reported
Immunohistochemistry-paraffin	Not Recommended

Recommended Assay Procedure:

Applications include western blot analysis (1-2 µg/ml). Other applications not routinely tested at BD Biosciences Pharmingen include immunoprecipitation (1 µg/ml cells), immunohistochemical staining of frozen tissue sections (1 µg/ml), and indirect immunofluorescence of tissue-cultured cells. The antibody is not recommended for immunohistochemical staining of paraffin-embedded tissue sections. HeLa human cervical carcinoma cells (ATCC CCL-2) or A-431 human epidermal carcinoma cells (ATCC CRL-1555) are suggested as positive immunoprecipitation and western blot controls.

Suggested Companion Products

Catalog Number	Name	Size	Clone
554002	HRP Goat Anti-Mouse Ig	1.0 ml	(none)
611447	A431 Cell Lysate	500 µg	(none)
611449	HeLa Cell Lysate	500 µg	(none)

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.

References

Fisher RP, Morgan DO. A novel cyclin associates with MO15/CDK7 to form the CDK-activating kinase. *Cell.* 1994; 78(4):713-724.(Biology)

Makela TP, Tassan JP, Nigg EA, Frutiger S, Hughes GJ, Weinberg RA. A cyclin associated with the CDK-activating kinase MO15. *Nature.* 1994; 371(6494):254-257.(Clone-specific: Immunoprecipitation)

Serizawa H, Makela TP, Conaway JW, Conaway RC, Weinberg RA, Young RA. Association of Cdk-activating kinase subunits with transcription factor TFIIH. *Nature.* 1995; 374(6519):280-282.(Biology)

Solomon MJ. The function(s) of CAK, the p34cdc2-activating kinase. *Trends Biochem Sci.* 1994; 19(11):496-500.(Biology)

Tassan JP, Schultz SJ, Bartek J, Nigg EA. Cell cycle analysis of the activity, subcellular localization, and subunit composition of human CAK (CDK-activating kinase). *J Cell Biol.* 1994; 127(2):467-478.(Clone-specific: Immunofluorescence, Western blot)