Technical Data Sheet

Purified Mouse Anti-Human Cyclin D1

Product Information

Material Number:	**554181**
Size:	0.25 mg
Concentration:	0.5 mg/ml
Clone:	G124-326
Immunogen:	Recombinant full-length human cyclin D1
Isotype:	Mouse IgG1
Reactivity:	QC Testing: Human
Target MW:	36 kDa
Storage Buffer:	Aqueous buffered solution containing ≤0.09% sodium azide.

Description

Cyclins and cyclin-dependent kinases (cdks) are evolutionarily conserved proteins that are essential for cell-cycle control in eukaryotes. Cyclins contain a conserved amino acid sequence motif, the cyclin box, which allows their binding to cdks to form active complexes that regulate the progression of the cell cycle. The synthesis and degradation of cyclins is tightly controlled in a cell cycle specific manner. Several classes of cyclins (A-E) have been described. Cyclins have been placed into functional groups as follows: Group 1 (cyclins A, B, D1, D2, D3, E and F) functions primarily in cell cycle reguation; Group 2 (cyclins C and H) also plays a role in transcriptional regulation; Group 3 (cyclins G1, G2 and I) may play a role distinct from other cyclins. Specific substrates for cyclin-cdk complexes include nuclear lamins, histones, oncogenes (c-src, c-abl, SV40 large-T Ag), tumor suppressor genes (Rb and p53), and others. The D-type cyclins are involved in regulating the passage of mammalian cells through G1. The reduced molecular weights of cyclin D1 is ~36 kD.

G124-326 recognizes human cyclin D1 and cross-reacts with the mouse homolog (Cyl1) of human cyclin D1. It does not cross-react with human cyclins D2 and D3. Recombinant full-length human cyclin D1 was used as immunogen. The antibody was originally evaluated by ELISA, western blot analysis and immunohistochemistry of frozen and paraffin-embedded tissue sections.

Preparation and Storage

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

Application Notes

Application

Western blot	Routinely Tested
Immunoprecipitation	Tested During Development
Flow cytometry	Tested During Development
Immunohistochemistry	Tested During Development

Recommended Assay Procedure:

D-type cyclins are differentially expressed in distinct cell types, therefore cell types which have been documented to express high levels of a given D-type cyclin are suggested as positive controls. WI-38 human diploid fibroblasts (ATCC CCL 75), and U-118 human glioblastoma cells (ATCC HTB 15) are suggested for detecting cyclin D1. For flow cytometric analysis, T-47D (ATCC HTB 133) and MCF7 (ATCC HTB 22) human breast carcinoma cell lines are suggested as positive controls. G124-326 can also be used for immunohistochemistry of frozen and paraffin-embedded tissue sections (5-20 µg/ml). For immunohistochemistry, normal colon tissue and the HT-29 colon adenocarcinoma cells (ATCC HTB 38) are suggested as positive controls for detecting cyclin D1. Scattered cells are stained, and staining is nuclear and/or cytoplasmic. However, users are cautioned that the differential expression of cyclin D1 remains to be fully characterized in the literature. Shapiro et al (1995) found many positive cells in non-small cell lung cancer and small lung cancer specimens that overexpress cyclin D1. This suggests that they may also be useful as positive controls for immunohistochemical detection of cyclin D1.

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

Bates S, Rowan S, Vousden KH. Characterisation of human cyclin G1 and G2: DNA damage inducible genes. *Oncogene.* 1996; 13(5):1103-1109.(Biology)
Gong J, Traganos F, Darzynkiewicz Z. Threshold expression of cyclin E but not D type cyclins characterizes normal and tumour cells entering S phase. *Cell Prolif.* 1995; 28(6):337-346.(Clone-specific: Flow cytometry, Western blot)

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Meyerson M, Harlow E. Identification of G1 kinase activity for cdk6, a novel cyclin D partner. *Mol Cell Biol.* 1994; 14(3):2077-2086.(Biology)
Shapiro GI, Edwards CD, Kobzik L, et al. Reciprocal Rb inactivation and p16INK4 expression in primary lung cancers and cell lines. *Cancer Res.* 1995; 55(3):505-509.(Clone-specific: Flow cytometry, Immunohistochemistry, Western blot)
Sherr CJ. Mammalian G1 cyclins. *Cell.* 1993; 73(6):1059-1065.(Biology)