

**Phospho-Cyclin D3 (Thr283) (E1V6W)
Rabbit mAb****Orders:** 877-616-CELL (2355)
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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications: W	Reactivity: H	Sensitivity: Endogenous	MW (kDa): 31	Source/Isotype: Rabbit IgG	UniProt ID: #P30281	Entrez-Gene Id: 896
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**Product Usage
Information****Application**

Western Blotting

Dilution

1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

Specificity/Sensitivity

Phospho-Cyclin D3 (Thr283) (E1V6W) Rabbit mAb recognizes endogenous levels of cyclin D3 protein only when phosphorylated at Thr283. Bands of unknown origin are detected at 140 kDa and higher.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic phospho-peptide corresponding to residues surrounding Thr283 of human cyclin D3 protein.

Background

Activity of the cyclin-dependent kinases CDK4 and CDK6 is regulated by T-loop phosphorylation, by the abundance of their cyclin partners (the D-type cyclins), and by association with CDK inhibitors of the Cip/Kip or INK family of proteins (1). The inactive ternary complex of cyclin D/CDK4 and p27 Kip1 requires extracellular mitogenic stimuli for the release and degradation of p27 concomitant with a rise in cyclin D levels to affect progression through the restriction point and Rb-dependent entry into S-phase (2). The active complex of cyclin D/CDK4 targets the retinoblastoma protein for phosphorylation, allowing the release of E2F transcription factors that activate G1/S-phase gene expression (3). Levels of cyclin D protein drop upon withdrawal of growth factors through downregulation of protein expression and phosphorylation-dependent degradation (4).

Although the D-type cyclins are not fully redundant, cyclin D3, like D1, plays a prominent role in differentiation and proliferation, which correlates with higher expression levels of cyclin D3 in various cancers (5). Burkitt lymphoma can carry mutations in the cyclin D3 gene that can affect phosphorylation at Thr283, stability of the protein, and cell cycle progression (6).

Background References

1. Hirai, H. et al. (1995) *Mol Cell Biol* 15, 2672-81.
2. Sherr, C.J. (1996) *Science* 274, 1672-7.
3. Lukas, J. et al. (1996) *Mol Cell Biol* 16, 6917-25.
4. Diehl, J.A. et al. (1997) *Genes Dev* 11, 957-72.
5. Bartkova, J. et al. (1998) *Oncogene* 17, 1027-37.
6. Schmitz, R. et al. (2012) *Nature* 490, 116-20.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key**W:** Western Blotting**Cross-Reactivity Key****H:** Human**Trademarks and Patents**

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