

# Cyclin D1 Blocking Peptide



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**Description:** This peptide is used to block Cyclin D1 (92G2) Rabbit mAb #2978 reactivity.

**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).

**Quality Control:** The quality of the peptide was evaluated by reversed-phase HPLC and by mass spectrometry. The peptide blocks Cyclin D1 (92G2) Rabbit mAb #2978 by peptide dot blot.

**Directions for Use:** Use as a blocking reagent to evaluate the specificity of antibody reactivity in peptide dot blot protocols. Recommended antibody dilutions can be found on the relevant product data sheet.

#### Background References:

- (1) Hirai, H. et al. (1995) *Mol. Cell. Biol.* 15, 2672-2681.
- (2) Sherr, C.J. (1996) *Science* 274, 1672-1677.
- (3) Lukas, J. et al. (1996) *Mol. Cell. Biol.* 16, 6917-6925.
- (4) Diehl, J.A. et al. (1997) *Genes Dev.* 11, 957-972.

**Storage:** Supplied in 20 mM potassium phosphate (pH 7.0), 50 mM NaCl, 0.1 mM EDTA, 1 mg/ml BSA and 5% glycerol. 1% DMSO Store at -20°C.