

#3300 Store at -20°C

Phospho-Cyclin D1 (Thr286) (D29B3) XP® Rabbit mAb


Cell Signaling
TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IP, IF-IC, FC-FP	H Mk	Endogenous	36	Rabbit IgG	#P24385	595

Product Usage Information

Application

Western Blotting
Immunoprecipitation
Immunofluorescence (Immunocytochemistry)
Flow Cytometry (Fixed/Permeabilized)

Dilution

1:1000
1:50
1:2000
1:1600

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.

For a carrier free (BSA and azide free) version of this product see product #94159.

Specificity / Sensitivity

Phospho-Cyclin D1 (Thr286) (D29B3) XP® Rabbit mAb detects endogenous levels of cyclin D1 only when phosphorylated at Thr286. The antibody does not cross-react with other cyclin D family members.

Species predicted to react based on 100% sequence homology:

Monkey

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Thr286 of cyclin D1.

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). Aberrant expression of cyclin D1 is associated with many forms of cancer, including B cell lymphomas. Gene translocation or amplification of the cyclin D1 gene can directly contribute to oncogenesis (2). Cyclin D1 also plays a critical role in mammary tissue maturation (5). Phosphorylation of cyclin D1 at Thr286 by glycogen synthase kinase 3β (4) or through the Ras/Raf/MEK/MAPK pathway (6) enhances its ubiquitination and proteasomal degradation.

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. Sicinski, P. et al. (1995) *Cell* 82, 621-630.
6. Shao, J. et al. (2000) *J Biol Chem* 275, 22916-24.

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 BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting **IP:** Immunoprecipitation **IF-IC:** Immunofluorescence (Immunocytochemistry)
FC-FP: Flow Cytometry (Fixed/Permeabilized)

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
X: Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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