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#4129

Cyclin E1 (HE12) Mouse mAb

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

Applications: W	Reactivity: H Mk	Sensitivity: Endogenous	MW (kDa): 48	Source/Isotype: Mouse IgG1	UniProt ID: #P24864	Entrez-Gene Id: 898
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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.

For a carrier free (BSA and azide free) version of this product see product #85718.

Specificity/Sensitivity

Cyclin E1 (HE12) Mouse mAb detects endogenous levels of total cyclin E1 protein. It does not cross react with cyclin E2.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a recombinant human cyclin E1 protein. The epitope has been mapped to residues surrounding Ile360.

Background

Cyclin E1 and cyclin E2 can associate with and activate CDK2 (1). Upon DNA damage, upregulation/activation of the CDK inhibitors p21 Waf1/Cip1 and p27 Kip1 prevent cyclin E/CDK2 activation, resulting in G1/S arrest. When conditions are favorable for cell cycle progression, cyclin D/CDK4/6 phosphorylates Rb and is thought to reduce the activity of p21 Waf1/Cip1 and p27 Kip1, allowing subsequent activation of cyclin E/CDK2 (1,2). Cyclin E/CDK2 further phosphorylates Rb to allow progression into S-phase, where cyclin E/CDK2 is thought to phosphorylate and activate multiple proteins involved in DNA synthesis (2,3). Turnover of cyclin E is largely controlled by phosphorylation that results in SCFFbw7-mediated ubiquitination and proteasome-dependent degradation (4,5). Cyclin E1 is phosphorylated at multiple sites *in vivo* including Thr62, Ser88, Ser72, Thr380, and Ser384, and is controlled by at least two kinases, CDK2 and GSK-3 (6,7).

Background References

1. Lauper, N. et al. (1998) *Oncogene* 17, 2637-43.
2. Lundberg, A.S. and Weinberg, R.A. (1998) *Mol Cell Biol* 18, 753-61.
3. Ewen, M.E. (2000) *Genes Dev* 14, 2265-70.
4. Won, K.A. and Reed, S.I. (1996) *EMBO J* 15, 4182-93.
5. Koepp, D.M. et al. (2001) *Science* 294, 173-7.
6. Welcker, M. et al. (2003) *Mol Cell* 12, 381-92.
7. Ye, X. et al. (2004) *J Biol Chem* 279, 50110-9.

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 **Mk:** Monkey

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