#4129 Store at –20°C

Cyclin E1 (HE12) Mouse mAb

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rev. 01/19/16

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Entrez-Gene ID # 9134
Swiss-Prot Acc. # O96020

Applications	Species Cross-Reactivity*	Molecular Wt.	Isotype
W Endogenous	H, Mk	48 kDa	Mouse IgG1**

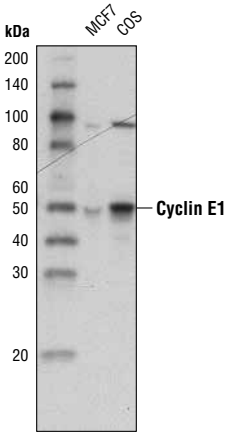
Background: Cyclin E1 and cyclin E2 can associate with and activate CDK2 (1). Upon DNA damage, upregulation/activation of the CDK inhibitors p21 Waf1/Cip1 and p27 Kip1 prevent cyclin E/CDK2 activation, resulting in G1/S arrest. When conditions are favorable for cell cycle progression, cyclin D/CDK4/6 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).

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 recombinant human cyclin E1.

Background References:

(1) Lauper, N. et al. (1998) *Oncogene* 17, 2637–2643.
(2) Lundberg, A.S. and Weinberg, R.A. (1998) *Mol. Cell. Biol.* 18, 753–761.
(3) Ewen, M.E. (2000) *Genes Dev.* 14, 2265–2270.
(4) Won, K.A. and Reed, S.I. (1996) *EMBO J.* 15, 4182–4193.
(5) Koepp, D.M. et al. (2001) *Science* 294, 173–177.
(6) Welcker, M. et al. (2003) *Mol. Cell* 12, 381–392.
(7) Ye, X. et al. (2004) *J. Biol. Chem.* 279, 50110–50119.



Western blot analysis of extracts from various cell types using Cyclin E1 (HE12) Mouse mAb.

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

***Species cross-reactivity is determined by western blot.**

****Anti-mouse secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:

Western blotting	1:1000

For product specific protocols and a complete listing of recommended companion products please see the product web page at www.cellsignal.com

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

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Applications Key: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide
Species Cross-Reactivity Key: **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **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 **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.