Phospho-Cyclin E1 (Thr62) Antibody

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: Phospho-Cyclin E1 (Thr62) Antibody detects endogenous levels of cyclin E only when phosphorylated at threonine 62 (cyclin E1 isoform 2) or threonine 77 (cyclin E1 isoform 1).

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Thr62 of human cyclin E1. Antibodies are purified by protein A and peptide affinity chromatography.

Background References:

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

Recommended Antibody Dilutions:
Western blotting 1:1000
Immunoprecipitation 1:100
Immunohistochemistry (Paraffin) 1:100
Unmasking buffer: Citrate
Antibody diluent: TBST-5%NGS
Flow Cytometry 1:50

For application specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.
Immunohistochemical analysis of paraffin-embedded human breast carcinoma, using Phospho-Cyclin E1 (Thr62) Antibody in the presence of control peptide (left) or antigen-specific peptide (right).

Immunohistochemical analysis of paraffin-embedded human lung carcinoma, using Phospho-Cyclin E1 (Thr62) Antibody.

Immunohistochemical analysis of paraffin-embedded human colon carcinoma, showing nuclear localization, using Phospho-Cyclin E1 (Thr62) Antibody.

Western blot analysis of extracts from 293 cells, untreated or hydroxyurea-treated, using Phospho-Cyclin E1 (Thr62) Antibody.

Flow cytometric analysis of untreated Jurkat cells, using Phospho-Cyclin E1 (Thr62) Antibody versus propidium iodide (DNA content). The boxed population indicates phospho-Cyclin E (Thr62)-positive cells.