



PhosphoSolutions®
Antibodies that work™

Colorado Biosciences Park
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Anti-Phospho-Tyr¹⁵ cdc2

Catalog Number: p135-15

Size: 100 µl

Product Description: Affinity purified rabbit polyclonal antibody

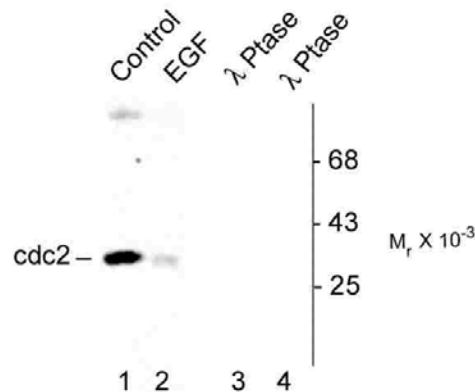
Applications: WB: 1:1000

Antigen: Phosphopeptide corresponding to amino acid residues surrounding the phospho-Tyr¹⁵ of rat cdc2.

Species reactivity: The antibody has been directly tested for reactivity in Western blots with human and *Xenopus* tissue. It is anticipated that the antibody will also react with mouse, rat and zebra fish based on the fact that these species have 100% homology with the amino acid sequence used as antigen.

Biological Significance: Cdc2 is a highly conserved protein serine kinase that plays a key role in regulation of the cell cycle (Maller, 1991). The ability of cdc2 to exercise control over the cell cycle is dependent upon the phosphorylation of Tyr¹⁵ in cdc2 (Nakamizo et al., 2002). cdc2 expression in brain has been linked to both neurogenesis and apoptosis (Konishi and Bonni, 2003; Dranovsky et al., 2001; Okano et al., 1996).

Anti-Phospho Tyr¹⁵ cdc2



Western blot of human T47D cells showing specific immunolabeling of the ~34k cdc2 phosphorylated at Tyr¹⁵ (Control). Treatment with EGF (30 ng per ml for 30 min) caused dephosphorylation of the Tyr¹⁵ on cdc2 (Lane 2). The phosphospecificity of this labeling is also shown in the third and fourth lanes (*lambda*-phosphatase: λ-Ptase). These blots are identical to the control except that they were incubated in λ-Ptase (1200 units for 30 min) before being exposed to the Anti-Phospho-Tyr¹⁵ cdc2. The immunolabeling is completely eliminated by treatment with λ-Ptase.

Page 1 of 2

WB = Western Blot **IF** = Immunofluorescence **IHC** = Immunohistochemistry **IP** = Immunoprecipitation

Packaging: 100 µl in 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 µg BSA per ml and 50% glycerol. Adequate amount of material to conduct 10-mini Western Blots.

Storage and Stability. For long term storage -20°C is recommended. Stable at -20°C for at least 1 year.

Shipment: Domestic - Blue Ice; International - Blue Ice or Dry Ice.

Purification Method: Prepared from rabbit serum by affinity purification via sequential chromatography on phospho- and dephosphopeptide affinity columns.

Antibody Specificity: Specific for the ~38k cdc2 protein phosphorylated at Tyr¹⁵. Immunolabeling is blocked by the λ -phosphatase treatment.

Quality Control Tests: Western blots performed on each lot.

References:

- Dranovsky A, Vincent I, Gregori L, Schwarzman A, Colflesh D, Enghild J, Strittmatter W, Davies P, Goldgaber D (2001) cdc2 phosphorylation of nucleolin demarcates mitotic stages and Alzheimer's disease pathology. *Neurobiol Aging* 22:517-528.
- Konishi Y, Bonni A (2003) The E2F-cdc2 cell-cycle pathway specifically mediates activity deprivation-induced apoptosis of postmitotic neurons. *J Neurosci* 23:1649-1658.
- Maller JL (1991) Mitotic control. *Curr Opin Cell Biol* 3:269-275.
- Nakamizo A, Inamura T, Inoha S, Amano T, Ochi H, Ikezaki K, Fukui M (2002) Suppression of cdc2 dephosphorylation at the tyrosine 15 residue during nitrosourea-induced G₂M phase arrest in glioblastoma cell lines. *J Neurooncol* 59:7-13.
- Okano HJ, Pfaff DW, Gibbs RB (1996) Expression of EGFR-, p75NGFR-, and PSTAIR (cdc2)-like immunoreactivity by proliferating cells in the adult rat hippocampal formation and forebrain. *Dev Neurosci* 18:199-209.

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