

cdc2 (Tyr15) Control Proteins



✓ 10 mini-blots
(10 western blots)

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Molecular Wt.
32, 34 kDa

Background: The entry of eukaryotic cells into mitosis is regulated by cdc2 kinase activation, a process controlled at several steps including cyclin binding and phosphorylation of cdc2 at Thr161 (1). However, the critical regulatory step in activating cdc2 during progression into mitosis appears to be dephosphorylation of cdc2 at Tyr15 and Thr14 (2). Phosphorylation at Thr14 and Tyr15 resulting in inhibition of cdc2 can be carried out by Wee1 and Myt1 protein kinases (3,4). The cdc25 phosphatase may be responsible for removal of phosphates at Thr14 and Tyr15 and subsequent activation of cdc2 (1,5).

Description: Phosphorylated cdc2 Control Protein: SK-N-MC total cell extracts, treated with hydroxyurea for 22 hours to induce cdc2 (Tyr15) phosphorylation, serve as a positive control for Western blotting experiments.

Nonphosphorylated cdc2 Control Protein: A glutathione S-transferase (GST)-cdc2 fusion protein serves as a negative control for monitoring antibody phosphoselectivity for Western blotting experiments. Molecular weight of GST-cdc2 fusion protein is 32 kDa.

Western Blots: CST recommends using 10 µl of GST-cdc2 negative control protein and 20 µl of the positive control SK-N-MC cell extract.

Note: Boil both negative control and positive control for 2-4 minutes prior to loading on an SDS-PAGE gel.

Directions on Use: As controls, CST recommends using 10 µl of GST-cdc2 negative control protein and 20 µl of the positive control SK-N-MC cell extract.

Background References:

- (1) Atherton-Fessler, S. et al. (1994) *Mol. Biol. Cell.* 5, 989-1001.
- (2) Norbury, C. et al. (1991) *EMBO. J.* 10, 3321-3329.
- (3) McGowan, C.H. and Russell, P. (1993) *EMBO J.* 12, 75-85.
- (4) Wells, N.J. et al. (1999) *J. Cell. Sci.* 112, 3361-3371.
- (5) Hunter, T. (1995) *Cell* 80, 225-236.

Entrez-Gene ID #983
Swiss-Prot Acc. #P06493

Storage: Supplied in SDS Sample Buffer. 62.5 mM Tris-HCl (pH 6.8 at 25°C), 2% w/v SDS, 10% glycerol, 50 mM DTT, 0.01% w/v bromophenol blue or phenol red. Store at -20°C.

Companion Products:

- cdc2 (POH1) Mouse mAb #9116
- PhosphoPlus® cdc2 (Tyr15) Antibody Kit #9110
- Phospho-cdc2 (Tyr15) Antibody #9111
- cdc2 Antibody #9112
- Anti-rabbit IgG, HRP-linked Antibody #7074
- Anti-mouse IgG, HRP-linked Antibody #7076
- Prestained Protein Marker, Broad Range (Premixed Format) #7720
- Biotinylated Protein Ladder Detection Pack #7727
- 20X LumiGLO® Reagent and 20X Peroxide #7003