

## BACKGROUND

CDC2/CDK1 is a member of the Ser/Thr protein kinase family. This protein is a catalytic subunit of the highly conserved protein kinase complex known as M-phase promoting factor (MPF), which is essential for G1/S and G2/M phase transitions of eukaryotic cell cycle. Mitotic cyclins stably associate with this protein and function as regulatory subunits. The kinase activity of this protein is controlled by cyclin accumulation and destruction through the cell cycle. The phosphorylation and dephosphorylation of this protein also play important regulatory roles in cell cycle control.<sup>1</sup> It is a component of the kinase complex that phosphorylates the repetitive C-terminus of RNA polymerase II.<sup>2</sup> Alternatively spliced transcript variants encoding different isoforms have been found for CDC2.

One important mechanism regulating the activity of CDC2 during the cell cycle is based on phosphorylation/ dephosphorylation. Avian CDC2 is phosphorylated Thr14, Tyr15, Thr161 and Ser277. Dephosphorylation of both Thr14 and Tyr15 is required for activation of CDC2 at the G2/M transition, indicating that phosphorylation of these residues negatively regulates CDC2 activity. Conversely, phosphorylation of Thr161 is required for kinase activity.<sup>3</sup>

### References:

1. Yasuda, H. et al: *Yakugaku Zasshi* 113:829-46, 1993
2. Cisek, S.J. & Gordon, J.L. : *Nature* 339:679-84, 1989
3. Nigg, E.A. et al: *Ciba Found. Symp.* 170:72-84, 1992

## TECHNICAL INFORMATION

### Source:

CDC2/CDK1 Antibody is a mouse monoclonal antibody raised against purified recombinant fragments of human CDC2/CDK1 expressed in *E. Coli*.

### Specificity and Sensitivity:

This antibody detects CDC2/CDK1 proteins without cross-reactivity with other family members.

**Storage Buffer:** PBS and 30% glycerol

### Storage:

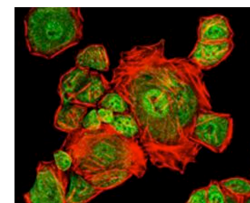
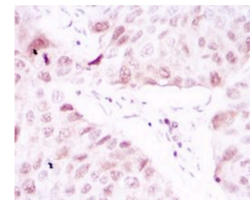
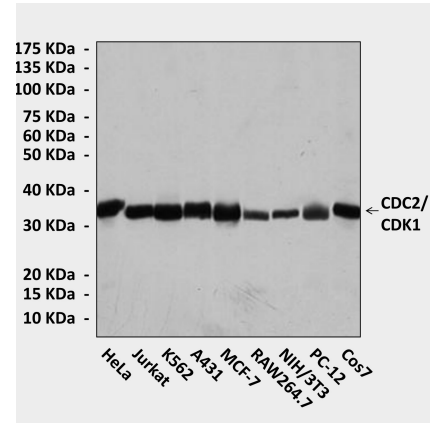
Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

## APPLICATIONS

Application:	*Dilution:
WB	1:1000
IP	n/d
IHC	1:50-200
ICC	1:50-200
FACS	n/d

\*Optimal dilutions must be determined by end user.

## QUALITY CONTROL DATA



**Top:** Western Blot detection of CDC2/CDK1 proteins in various cell lysates using CDC2/CDK1 Antibody.

**Middle:** This antibody stains paraffin-embedded human ovarian cancer tissue in immunohistochemical analysis. **Bottom:** It also stains Eca109 cells in confocal immunofluorescent assay (CDC2/CDK1 Antibody: Green; Actin filaments: Red; DRAQ5 DNA Dye: Blue).

