Product Specification Sheet

Product: Protein A Purified Murine Monoclonal Anti-cdc2 Cyclin Dependent Kinase

Code: 200-301-160 **Lot #:** 9834

Size: 100 μg

Clone: POH-1 **Isotype:** IgG_{2a} Kappa

Physical State: Liquid (sterile filtered)

Antibody Concentration: 1.0 mg/ml (by UV absorbance at 280 nm)

Buffer: 0.02 M Potassium Phosphate, 0.5 M Sodium Chloride, pH 7.2

Stabilizer: None **Preservative:** 0.01% (w/v) Sodium Azide

Storage Conditions: Store vial at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use. Expiration date is one (1) year from date of opening.

Background Information: p34 cdc2 is a serine-threonine protein kinase of 34,000 daltons that complexes with cyclin to form maturation promoting factor (MPF). Tthe inactive form of the protein is phosphorylated at threonine (T) and tyrosine (Y) residues. In humans the phosphorylation appears to performed by $p60^{src}$. The active form of the protein is dephosphorylated and it functions by phosphorylating a number of proteins. The phosphorylation activity is coupled to the entry into the M-phase of the cell. p34 cdc2 protein must be associated with a normal cyclin protein for the M-phase to be completed normally. Association with deletion mutants of cyclin halts the M-phase before it is completed.

Application Note(s): This antibody is suitable for immunohistochemistry immunoprecipitation (as active kinase), and immunoblotting. The antibody detects the three bands within the 34kD region corresponding to the p34 protein and its cleavage products. HeLa cell lysate or human colon carcinoma is suggested as a positive control for immunoblotting. LEP fibroblast cell lysate is suggested as a negative control. Paraffin embedded tissue is reactive for immunohistochemistry using high temperature release and 0.1% saponin treatment or other permeabilization method.

Recommended Dilutions: This product was assayed by immunoblot using HRP Goat-anti-Mouse IgG and ECL for detection. A working dilution of 1:500 to 1:1,000 is suggested for this assay. For immunohistochemistry dilute the antibody 1:50. Researchers should determine optimal titers for other applications.

Purity and Specificity: This protein A purified mouse monoclonal antibody reacts specifically with p34 cdc2 in human tissues and cell lines. This antibody is not cross reactive with other cyclin dependent kinases. Cross reactivity with p34 cdc2 from other sources, especially mouse and rat will occur. This reagent has broad interspecies reactivity.

Immunogen: This protein A purified monoclonal antibody was produced by repeated immunizations with recombinant human p34 cdc2 fusion protein.

Hybridoma: Produced by the fusion between BALB/c mouse splenocytes and mouse myeloma P3-X63/AG8.653 cells using conventional hybridoma technology.

Specific Reference(s):

Lukas, J. et al. (1992) Distinct forms of human CDC2 identified by novel monoclonal antibodies. *Eur. J. Biochem.,* **207,** 169-176.

Ye, X.S. et al. (1997) Proteolysis and tyrosine phosphorylation of p34cdc2/cyclin B. The role of MCM2 and initiation of DNA replication to allow tyrosine phosphorylation of p34cdc2. *J. Biol Chem* **272**(52):33384-93.

Palmer, A. et al. (1998) A link between MAP kinase and $p34^{cdc2}$/cyclin B during oocyte maturation: $p90^{rsk}$ phosphorylates the $p34^{cdc2}$ inhibitory kinase Myt1. *EMBO J.* **17**, 5037-5047.

Relevant Link(s):

Evolutionary Homologs of cdc2 transcription

Note: This product is for research use only and is not intended for therapeutic or diagnostic applications. Please contact a technical service representative for more information.