

# Chk1 (C-16): sc-7234



The Power to Question

## BACKGROUND

Cell cycle events are regulated by the sequential activation and deactivation of cyclin dependent kinases (Cdks) and by proteolysis of cyclins. Chk1 and Chk2 are involved in these processes as regulators of Cdks. Chk1 and Chk2 both function as essential components in the G<sub>2</sub> DNA damage checkpoint by phosphorylating Cdc25C in response to DNA damage. Phosphorylation inhibits Cdc25C activity, thereby blocking mitosis. Cdc25A, Cdc25B and Cdc25C protein tyrosine phosphatases function as mitotic activators by dephosphorylating Cdc2 p34 on regulatory tyrosine residues. It has also been shown that Chk1 can phosphorylate Wee 1 *in vitro*, providing evidence that the hyperphosphorylated form of Wee 1, seen in cells delayed by Chk1 overexpression, is due to phosphorylation by Chk1.

## REFERENCES

- Gautier, J., et al. 1991. Cdc25 is a specific tyrosine phosphatase that directly activates p34<sup>cdc2</sup>. Cell 67: 197-211.
- Barinaga, M. 1995. A new twist to the cell cycle. Science 269: 631-632.

## CHROMOSOMAL LOCATION

Genetic locus: CHEK1 (human) mapping to 11q24.2.

## SOURCE

Chk1 (C-16) is available as either goat (sc-7234) or rabbit (sc-7234-R) polyclonal affinity purified antibody raised against a peptide mapping at the C-terminus of Chk1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-7234 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Chk1 (C-16) is recommended for detection of Chk1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Chk1 (C-16) is also recommended for detection of Chk1 in additional species, including equine and canine.

Suitable for use as control antibody for Chk1 siRNA (h): sc-29269, Chk1 shRNA Plasmid (h): sc-29269-SH and Chk1 shRNA (h) Lentiviral Particles: sc-29269-V.

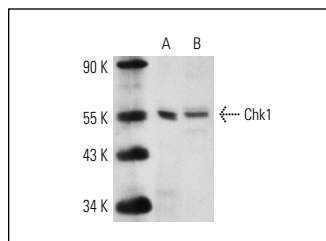
Molecular Weight of Chk1: 56 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, K-562 whole cell lysate: sc-2203 or AML-193 whole cell lysate: sc-364182.

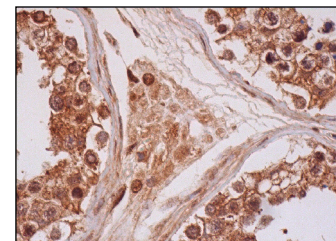
## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## DATA



Chk1 (C-16): sc-7234. Western blot analysis of Chk1 expression in HeLa (A) and AML-193 (B) whole cell lysates.



Chk1 (C-16): sc-7234. Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing nuclear and cytoplasmic staining of cells in seminiferous ducts, Leydig cells and peritubular myoid cells.

## SELECT PRODUCT CITATIONS

- Koniaras, K., et al. 2001. Inhibition of Chk1-dependent G<sub>2</sub> DNA damage checkpoint radiosensitizes p53 mutant human cells. Oncogene 20: 7453-7463.
- Luo, Y., et al. 2001. Blocking Chk1 expression induces apoptosis and abrogates the G<sub>2</sub> checkpoint mechanism. Neoplasia 3: 411-419.
- Nagaya, N., et al. 2004. Intravenous administration of mesenchymal stem cells improves cardiac function in rats with acute myocardial infarction through angiogenesis and myogenesis. Am. J. Physiol. Heart Circ. Physiol. 276: H2670-H2676.
- Zhang, Y., et al. 2006. The Chk1/Cdc25A pathway as activators of the cell cycle in neuronal death induced by camptothecin. J. Neurosci. 26: 8819-8828.
- Leung-Pineda, V., et al. 2009. DDB1 targets Chk1 to the CUL-4 E3 ligase complex in normal cycling cells and in cells experiencing replication stress. Cancer Res. 69: 2630-2637.
- Liu, T., et al. 2012. Rock2 regulates Cdc25A through ubiquitin proteasome system in hepatocellular carcinoma cells. Exp. Cell Res. 318: 1994-2003.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.



Try **Chk1 (G-4): sc-8408** or **Chk1 (F-11): sc-515369**, our highly recommended monoclonal alternatives to Chk1 (C-16). Also, for AC, HRP, FITC, PE, Alexa Fluor<sup>®</sup> 488 and Alexa Fluor<sup>®</sup> 647 conjugates, see **Chk1 (G-4): sc-8408**.