SANTA CRUZ BIOTECHNOLOGY, INC.

Chk2 (H-300): sc-9064

SANTA CRUZ BIOTECHNOLOGY

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_2 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 Wee1 *in vitro,* providing evidence that the hyperphosphorylated form of Wee1, seen in cells delayed by Chk1 overexpression, is due to phosphorylation by Chk1.

REFERENCES

1. Gautier, J., et al. 1991. Cdc25 is a specific tyrosine phosphatase that directly activates $p34^{Cdc2}$. Cell 67: 197-211.
2. Barinaga, M. 1995. A new twist to the cell cycle. Science 269: 631-632.

CHROMOSOMAL LOCATION

Genetic locus: CHEK2 (human) mapping to 22q12.1; Chek2 (mouse) mapping to 5 F.

SOURCE

Chk2 (H-300) is a rabbit polyclonal antibody raised against amino acids 1-300 mapping at the N-terminus of Chk2 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.

APPLICATIONS

Chk2 (H-300) is recommended for detection of Chk2 of mouse, rat and 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).

Chk2 (H-300) is also recommended for detection of Chk2 in additional species, including equine and canine.

Suitable for use as control antibody for Chk2 siRNA (h): sc-29271, Chk2 siRNA (m): sc-29272, Chk2 shRNA Plasmid (h): sc-29271-SH, Chk2 shRNA Plasmid (m): sc-29272-SH, Chk2 shRNA (h) Lentiviral Particles: sc-29271-V and Chk2 shRNA (m) Lentiviral Particles: sc-29272-V.

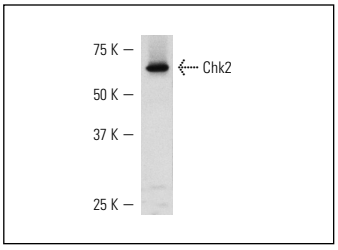
Molecular Weight of Chk2: 66 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, HL-60 whole cell lysate: sc-2209 or CCRF-CEM cell lysate: sc-2225.

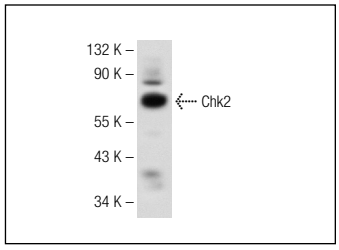
STORAGE

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

DATA



Chk2 (H-300): sc-9064. Western blot analysis of Chk2 expression in HL-60 whole cell lysate.



Chk2 (H-300): sc-9064. Western blot analysis of Chk2 expression in HeLa whole cell lysate.

SELECT PRODUCT CITATIONS

1. Gottifredi, V., et al. 2001. p53 down-regulates Chk1 through p21 and the retinoblastoma protein. Mol. Cell. Biol. 21: 1066-1076.
2. Longe, H.O., et al. 2009. Telomere homolog oligonucleotides induce apoptosis in malignant but not in normal lymphoid cells: mechanism and therapeutic potential. Int. J. Cancer 124: 473-482.
3. Bhonde, M.R., et al. 2010. Mismatch repair system decreases cell survival by stabilizing the tetraploid G_1 arrest in response to SN-38. Int. J. Cancer 126: 2813-2825.
4. Carrassa, L., et al. 2010. Role of Chk1 in the differentiation program of hematopoietic stem cells. Cell. Mol. Life Sci. 67: 1713-1722.
5. Kemp, M.G., et al. 2010. Tipin-replication protein A interaction mediates Chk1 phosphorylation by ATR in response to genotoxic stress. J. Biol. Chem. 285: 16562-16571.
6. Karimi-Busheri, F., et al. 2010. Senescence evasion by MCF-7 human breast tumor-initiating cells. Breast Cancer Res. 12: R31.
7. Jayachandran, G., et al. 2010. NPRL2 sensitizes human non-small cell lung cancer (NSCLC) cells to cisplatin treatment by regulating key components in the DNA repair pathway. PLoS ONE 5: e11994.
8. Horton, J.K., et al. 2011. Requirement for NBS1 in the S phase checkpoint response to DNA methylation combined with PARP inhibition. DNA Repair 10: 225-234.

RESEARCH USE

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