SANTA CRUZ BIOTECHNOLOGY, INC.

Chk1 (F-11): sc-515369

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 G2 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 over-expression, 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.
3. Sanchez, Y., et al. 1997. Conservation of the Chk1 checkpoint pathway in mammals: linkage of DNA damage to Cdk regulation through Cdc25. Science 277: 1497-1501.
4. O'Connell, M.J., et al. 1997. Chk1 is a Wee1 kinase in the G_2 DNA damage checkpoint inhibiting Cdc2 by Y15 phosphorylation. EMBO J. 16: 545-554.
5. Peng, C.Y., et al. 1997. Mitotic and G_2 checkpoint control: regulation of 14-3-3 protein binding by phosphorylation of Cdc25C on serine-216. Science 277: 1501-1505.
6. Matsuoka, S., et al. 1998. Linkage of ATM to cell cycle regulation by the Chk2 protein kinase. Science 282: 1893-1897.

CHROMOSOMAL LOCATION

Genetic locus: CHEK1 (human) mapping to 11q24.2; Chek1 (mouse) mapping to 9 A4.

SOURCE

Chk1 (F-11) is a mouse monoclonal antibody raised against amino acids 262-476 mapping at the C-terminus of Chk1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Chk1 (F-11) is available conjugated to agarose (sc-515369 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-515369 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515369 PE), fluorescein (sc-515369 FITC), Alexa Fluor® 488 (sc-515369 AF488), Alexa Fluor® 546 (sc-515369 AF546), Alexa Fluor® 594 (sc-515369 AF594) or Alexa Fluor® 647 (sc-515369 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515369 AF680) or Alexa Fluor® 790 (sc-515369 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

Chk1 (F-11) is recommended for detection of Chk1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Chk1 siRNA (h): sc-29269, Chk1 siRNA (m): sc-29270, Chk1 shRNA Plasmid (h): sc-29269-SH, Chk1 shRNA Plasmid (m): sc-29270-SH, Chk1 shRNA (h) Lentiviral Particles: sc-29269-V and Chk1 shRNA (m) Lentiviral Particles: sc-29270-V.

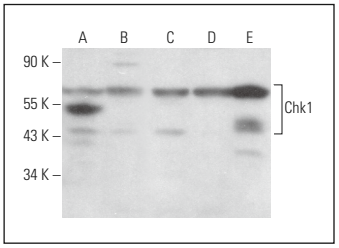
Molecular Weight of Chk1: 56 kDa.

Positive Controls: MOLT-4 cell lysate: sc-2233, HL-60 whole cell lysate: sc-2209 or U-698-M whole cell lysate: sc-364799.

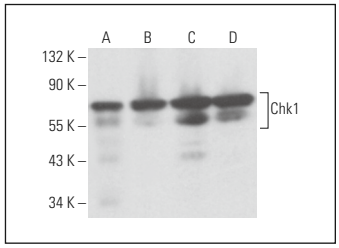
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Chk1 (F-11): sc-515369. Western blot analysis of Chk1 expression in Jurkat (**A**), WEHI-231 (**B**), NIH/3T3 (**C**), Neuro-2A (**D**) and C6 (**E**) whole cell lysates.



Chk1 (F-11): sc-515369. Western blot analysis of Chk1 expression in MOLT-4 (**A**), HL-60 (**B**), U-698-M (**C**) and JAR (**D**) whole cell lysates.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.