SANTA CRUZ BIOTECHNOLOGY, INC.

Chk2 (C-18): sc-8813

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.

SOURCE

Chk2 (C-18) is available as either goat (sc-8813) or rabbit (sc-8813-R) polyclonal affinity purified antibody raised against a peptide mapping near the C-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.

Blocking peptide available for competition studies, sc-8813 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as agarose conjugate for immunoprecipitation, sc-8813 AC, 500 µg/ 0.25 ml agarose in 1 ml.

APPLICATIONS

Chk2 (C-18) is recommended for detection of Chk2 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).

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

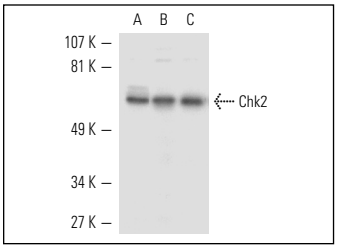
Molecular Weight of Chk2: 66 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, CCRF-CEM cell lysate: sc-2225 or Saos-2 cell lysate: sc-2235.

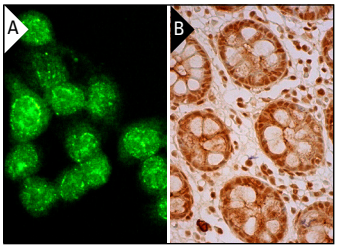
STORAGE

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

DATA



Chk2 (C-18): sc-8813. Western blot analysis of Chk2 expression in HeLa (**A**), CCRF-CEM (**B**) and Saos-2 (**C**) whole cell lysates.



Chk2 (C-18): sc-8813. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear staining (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human colon tissue showing nuclear and cytoplasmic staining of glandular cells and nuclear staining of endothelial cells (**B**).

SELECT PRODUCT CITATIONS

1. Parsels, L.A., et al. 2004. 5-fluoro-2'-deoxyuridine-induced Cdc25A accumulation correlates with premature mitotic entry and clonogenic death in human colon cancer cells. Cancer Res. 64: 6588-6594.
2. Aliouat-Denis, C.M., et al. 2005. p53-independent regulation of $p21^{Waf1/Cip1}$ expression and senescence by Chk2. Mol. Cancer Res. 3: 627-634.
3. Andersen, J.L., et al. 2005. ATR and GADD45α mediate HIV-1 Vpr-induced apoptosis. Cell Death Differ. 12: 326-334.
4. Yang, S., et al. 2006. Promyelocytic leukemia activates Chk2 by mediating Chk2 autophosphorylation. J. Biol. Chem. 281: 26645-26654.
5. Liu, T., et al. 2012. Rock2 regulates Cdc25A through ubiquitin proteasome system in hepatocellular carcinoma cells. Exp. Cell Res. 318: 1994-2003.
6. Mak, J.P., et al. 2015. Pharmacological inactivation of CHK1 and WEE1 induces mitotic catastrophe in nasopharyngeal carcinoma cells. Oncotarget 6: 21074-21084.

RESEARCH USE

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

PROTOCOLS

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