SANTA CRUZ BIOTECHNOLOGY, INC.

Chk2 (A-11): sc-17747

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.

CHROMOSOMAL LOCATION

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

SOURCE

Chk2 (A-11) is a mouse monoclonal antibody raised against amino acids 1-300 of Chk2 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.

Chk2 (A-11) is available conjugated to agarose (sc-17747 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-17747 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-17747 PE), fluorescein (sc-17747 FITC), Alexa Fluor® 488 (sc-17747 AF488), Alexa Fluor® 546 (sc-17747 AF546), Alexa Fluor® 594 (sc-17747 AF594) or Alexa Fluor® 647 (sc-17747 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-17747 AF680) or Alexa Fluor® 790 (sc-17747 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Chk2 (A-11) is available conjugated to TRITC (sc-17747 TRITC, 200 µg/ml), for IF, IHC(P) and FCM.

APPLICATIONS

Chk2 (A-11) is recommended for detection of Chk2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:200-1:1,000), 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 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.

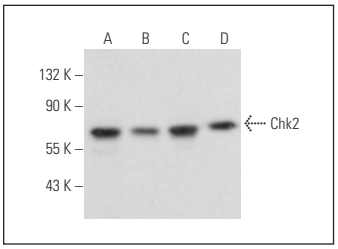
Molecular Weight of Chk2: 66 kDa.

Positive Controls: CCRF-CEM cell lysate: sc-2225, PC-12 cell lysate: sc-2250 or WEHI-231 whole cell lysate: sc-2213.

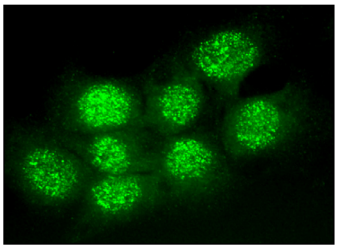
STORAGE

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

DATA



Chk2 (A-11): sc-17747. Western blot analysis of Chk2 expression in CCRF-CEM (**A**), PC-12 (**B**), NIH/3T3 (**C**) and WEHI-231 (**D**) whole cell lysates.



Chk2 (A-11): sc-17747. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Hernández-Hoyos, G., et al. 2003. GATA-3 expression is controlled by TCR signals and regulates CD4/CD8 differentiation. Immunity 19: 83-94.
2. Tomko, R.J., et al. 2009. Nitrosative stress suppresses checkpoint activation after DNA synthesis inhibition. Cell Cycle 8: 299-305.
3. Vempati, R.K., et al. 2010. p300-mediated acetylation of Histone H3 lysine 56 functions in DNA damage response in mammals. J. Biol. Chem. 285: 28553-28564.
4. Makino, N., et al. 2011. Antioxidant therapy attenuates myocardial telomerase activity reduction in superoxide dismutase-deficient mice. J. Mol. Cell. Cardiol. 50: 670-677.
5. Daugaard, M., et al. 2012. LEDGF (p75) promotes DNA-end resection and homologous recombination. Nat. Struct. Mol. Biol. 19: 803-810.
6. Gutiérrez-González , A., et al. 2013. Targeting Chk2 improves gastric cancer chemotherapy by impairing DNA damage repair. Apoptosis 18: 347-360.
7. Liou, J.S., et al. 2014. Inhibition of autophagy enhances DNA damage-induced apoptosis by disrupting CHK1-dependent S phase arrest. Toxicol. Appl. Pharmacol. 278: 249-258.
8. Baude, A., et al. 2015. Hepatoma-derived growth factor-related protein 2 promotes DNA repair by homologous recombination. Nucleic Acids Res. 44: 2214-2226.
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10. Xu, X., et al. 2017. A signature motif in LIM proteins mediates binding to checkpoint proteins and increases tumour radiosensitivity. Nat. Commun. 8: 14059.

RESEARCH USE

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