

# Chk1 (DCS-310): sc-56291



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 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: CHEK1 (human) mapping to 11q24.2; Chk1 (mouse) mapping to 9 A4.

## SOURCE

Chk1 (DCS-310) is a mouse monoclonal antibody raised against full length Chk1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Chk1 (DCS-310) is available conjugated to agarose (sc-56291 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-56291 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-56291 PE), fluorescein (sc-56291 FITC), Alexa Fluor® 488 (sc-56291 AF488), Alexa Fluor® 546 (sc-56291 AF546), Alexa Fluor® 594 (sc-56291 AF594) or Alexa Fluor® 647 (sc-56291 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-56291 AF680) or Alexa Fluor® 790 (sc-56291 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

Chk1 (DCS-310) is recommended for detection of Chk1 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).

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.

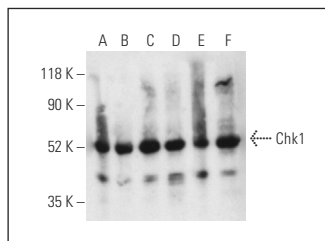
Molecular Weight of Chk1: 56 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, K-562 whole cell lysate: sc-2203 or MDA-MB-231 cell lysate: sc-2232.

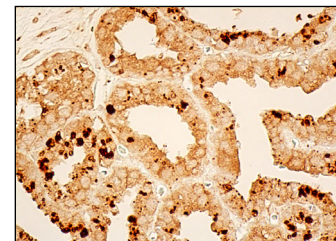
## STORAGE

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

## DATA



Chk1 (DCS-310) HRP: sc-56291 HRP. Direct western blot analysis of Chk1 expression in HeLa (A), K-562 (B), MDA-MB-231 (C), HCT-116 (D), NIH/3T3 (E) and NCI-H1299 (F) whole cell lysates.



Chk1 Antibody (DCS-310): sc-56291. Immunoperoxidase staining of formalin fixed, paraffin-embedded human seminal vesicle tissue showing cytoplasmic and membrane staining of glandular cells. Blocked with 0.25X UltraCruz® Blocking Reagent: sc-516214. Detected with m-IgG Fc BP-B: sc-533652 and ImmunoCruz® ABC Kit: sc-516216.

## SELECT PRODUCT CITATIONS

- Agner, J., et al. 2005. Differential impact of diverse anticancer chemotherapeutics on the Cdc25A-degradation checkpoint pathway. *Exp. Cell Res.* 302: 162-169.
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- Leitch, C., et al. 2016. Hydroxyurea synergizes with valproic acid in wild-type p53 acute myeloid leukaemia. *Oncotarget* 7: 8105-8118.
- Belalcazar, A., et al. 2017. Inhibiting heat shock protein 90 and the ubiquitin-proteasome pathway impairs metabolic homeostasis and leads to cell death in human pancreatic cancer cells. *Cancer* 123: 4924-4933.
- Conde, C.D., et al. 2019. Polymerase δ deficiency causes syndromic immunodeficiency with replicative stress. *J. Clin. Invest.* 129: 4194-4206.
- Zheng, T., et al. 2020. RBMX is required for activation of ATR on repetitive DNAs to maintain genome stability. *Cell Death Differ.* 27: 3162-3176.
- Mayca Pozo, F., et al. 2021. MYO10 drives genomic instability and inflammation in cancer. *Sci. Adv.* 7: eabg6908.
- Martin, C.K., et al. 2022. Vaccinia virus arrests and shifts the cell cycle. *Viruses* 14: 431.
- Wang, F., et al. 2023. A novel sorbicillinoid compound as a potent anti-inflammation agent through inducing NLRP3 protein degradation. *Br. J. Pharmacol.* 180: 1930-1948.

## RESEARCH USE

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