SANTA CRUZ BIOTECHNOLOGY, INC.

Hus1 (E-21): sc-30543

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

DNA damage or incomplete replication of DNA results in inhibition of cell cycle progression at the G_1-S or G_2-M checkpoints by conserved regulatory mechanisms. Chk1, Rad9 and Hus1 are involved in regulation of cell cycle arrest at the G_2 checkpoint. Chk1 functions as an essential component in the G_2 DNA damage checkpoint by phosphorylating Cdc25C in response to DNA damage, which inhibits mitosis. Hus1 and Rad9 exhibit conserved function in fission yeast and higher eukaryotes. Hus1 has been shown to be phosphorylated in response to DNA damage, a process which requires Rad checkpoint genes. Rad9 is thought to be a candidate tumor suppressor gene because it is localized to human chromosome 11q13.1-13.2, which is a region containing a number of tumor suppressor loci.

REFERENCES

1. Carr, A.M., et al. 1995. The chk1 pathway is required to prevent mitosis following cell-cycle arrest at "start". Curr. Biol. 5: 1179-1190.
2. Lieberman, H.B., et al. 1996. A human homolog of the *Schizosaccharomyces pombe* Rad9+ checkpoint control gene. Proc. Natl. Acad. Sci. USA 93: 13890-13895.
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. Kostrub, C.F., et al. 1998. Hus1p, a conserved fission yeast checkpoint protein, interacts with Rad1p and is phosphorylated in response to DNA damage. EMBO J. 17: 2055-2066.

CHROMOSOMAL LOCATION

Genetic locus: HUS1 (human) mapping to 7p13-p12; Hus1 (mouse) mapping to 11 A1.

SOURCE

Hus1 (E-21) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Hus1 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-30543 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

Hus1 (E-21) is recommended for detection of Hus1 of human and, to a lesser extent, mouse and rat 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

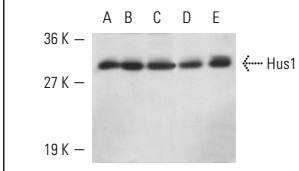
Molecular Weight of Hus1: 34 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, HeLa whole cell lysate: sc-2200 or A-431 + PMA cell lysate: sc-2261.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



Hus1 (E-21): sc-30543. Western blot analysis of Hus1 expression in K-562 (**A**), HeLa (**B**), PMA-treated A-431 (**C**) and UV-treated HeLa (**D**) whole cell lysates and HeLa nuclear extract (**E**).

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.