SANTA CRUZ BIOTECHNOLOGY, INC.

Hus1 (G-3): sc-166440

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.

CHROMOSOMAL LOCATION

Genetic locus: HUS1 (human) mapping to 7p12.3; Hus1 (mouse) mapping to 11 A1.

SOURCE

Hus1 (G-3) is a mouse monoclonal antibody raised against amino acids 1-281 representing full length Hus1 of mouse 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.

Hus1 (G-3) is available conjugated to agarose (sc-166440 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-166440 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166440 PE), fluorescein (sc-166440 FITC), Alexa Fluor® 488 (sc-166440 AF488), Alexa Fluor® 546 (sc-166440 AF546), Alexa Fluor® 594 (sc-166440 AF594) or Alexa Fluor® 647 (sc-166440 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166440 AF680) or Alexa Fluor® 790 (sc-166440 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

STORAGE

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

APPLICATIONS

Hus1 (G-3) is recommended for detection of Hus1 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), 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 Hus1 siRNA (h): sc-37545, Hus1 siRNA (m): sc-37546, Hus1 shRNA Plasmid (h): sc-37545-SH, Hus1 shRNA Plasmid (m): sc-37546-SH, Hus1 shRNA (h) Lentiviral Particles: sc-37545-V and Hus1 shRNA (m) Lentiviral Particles: sc-37546-V.

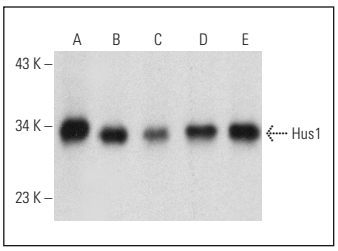
Molecular Weight of Hus1: 34 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, CTLL-2 cell lysate: sc-2242 or BYDP whole cell lysate: sc-364368.

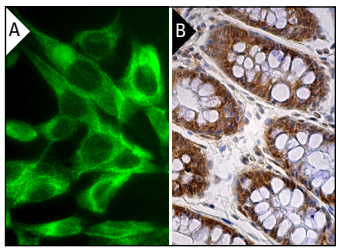
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Hus1 (G-3): sc-166440. Western blot analysis of Hus1 expression in NIH/3T3 (**A**), BYDP (**B**), CTLL-2 (**C**), RBL-1 (**D**) and KNRK (**E**) whole cell lysates.



Hus1 (G-3): sc-166440. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human rectum tissue showing nuclear and cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Li, D.Q., et al. 2010. Requirement of MTA1 in ATR-mediated DNA damage checkpoint function. J. Biol. Chem. 285: 19802-19812.

RESEARCH USE

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