SANTA CRUZ BIOTECHNOLOGY, INC.

Hec1 (T-19): sc-26107

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Highly expressed in cancer (Hec1) is a coiled-coil-enriched protein expressed abundantly in the S and M phases of rapidly dividing cells where it localizes to the kinetochores. Hec1 is involved in spindle checkpoint signaling. Hec1 is not expressed in terminal differentiated cells. The 76 kDa Hec1 is expressed in tissues with high mitotic rates including testis, spleen and thymus. Hec1 is also found in the late S to M phases of bladder carcinoma cells. In dividing cells, Hec1 is required for the recruitment of Mps1 kinase and Mad1/Mad2 complexes to the kinetochores. The phosphorylation of Hec1 on Serine 165 by Nek2 is essential for faithful chromosome segregation. The binding of retinoblastoma protein to Hec1 also increases the fidelity of chromosomal segregation. The gene encoding human Hec1 maps to chromosome 18p11.31.

REFERENCES

1. Chen, Y., et al. 1997. HEC, a novel nuclear protein rich in leucine heptad repeats specifically involved in mitosis. Mol. Cell. Biol. 17: 6049-6056.
2. Zheng, L., Chen, Y., Riley, D.J., Chen, P.L, and Lee, W.H. 2000. Retino-blastoma protein enhances the fidelity of chromosome segregation mediated by hsHec1p. Mol. Cell. Biol. 20: 3529-3537.
3. Martin-Lluesma, S., Stucke, V.M. and Nigg, E.A. 2002. Role of Hec1 in spindle checkpoint signaling and kinetochore recruitment of Mad1/Mad2. Science 297: 2267-2270.
4. Chen, Y., et al. 2002. Phosphorylation of the mitotic regulator protein Hec1 by Nek2 kinase is essential for faithful chromosome segregation. J. Biol. Chem. 277: 49408-49416.
5. LocusLink Report (LocusID: 10403) http://www.ncbi.nlm.nih.gov/LocusLink

CHROMOSOMAL LOCATION

Genetic locus: NDC80 (human) mapping to 18p11.32; Ndc80 (mouse) mapping to 17 E2.

SOURCE

Hec1 (T-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Hec1 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-26107 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.

PROTOCOLS

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

APPLICATIONS

Hec1 (T-19) is recommended for detection of Hec1 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Hec1 siRNA (h): sc-37612, Hec1 siRNA (m): sc-145927, Hec1 shRNA Plasmid (h): sc-37612-SH, Hec1 shRNA Plasmid (m): sc-145927-SH, Hec1 shRNA (h) Lentiviral Particles: sc-37612-V and Hec1 shRNA (m) Lentiviral Particles: sc-145927-V.

Molecular Weight of Hec1: 76 kDa.

Positive Controls: F9 cell lysate: sc-2245.

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.

RESEARCH USE

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