SANTA CRUZ BIOTECHNOLOGY, INC.

# Hec1 (C-11): sc-515550

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. 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.

## CHROMOSOMAL LOCATION

Genetic locus: NDC80 (human) mapping to 18p11.32; Ndc80 (mouse) mapping to 17 E1.3.

## SOURCE

Hec1 (C-11) is a mouse monoclonal antibody raised against amino acids 349-468 mapping within an internal region of Hec1 of human origin.

## PRODUCT

Each vial contains 200 µg $IgG_{2b}$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Hec1 (C-11) is available conjugated to agarose (sc-515550 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-515550 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515550 PE), fluorescein (sc-515550 FITC), Alexa Fluor® 488 (sc-515550 AF488), Alexa Fluor® 546 (sc-515550 AF546), Alexa Fluor® 594 (sc-515550 AF594) or Alexa Fluor® 647 (sc-515550 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515550 AF680) or Alexa Fluor® 790 (sc-515550 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

Hec1 (C-11) is recommended for detection of Hec1 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) 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: Jurkat whole cell lysate: sc-2204, NCI-H292 whole cell lysate: sc-364179 or HeLa whole cell lysate: sc-2200.

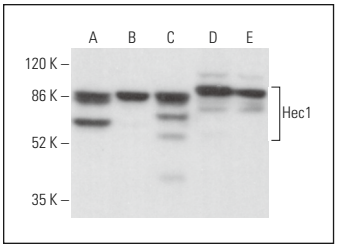
## STORAGE

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

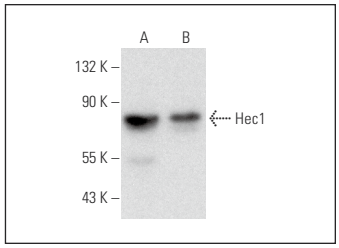
## RESEARCH USE

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

## DATA




Hec1 (C-11): sc-515550. Western blot analysis of Hec1 expression in Jurkat (**A**), NCI-H292 (**B**), Ramos (**C**), RAW 264.7 (**D**) and WEHI-231 (**E**) whole cell lysates.




Hec1 (C-11): sc-515550. Western blot analysis of Hec1 expression in Jurkat (**A**) and HeLa (**B**) whole cell lysates.

## SELECT PRODUCT CITATIONS


1. Juhlen, R., et al. 2018. Triple A patient cells suffering from mitotic defects fail to localize PGRMC1 to mitotic kinetochore fibers. Cell Div. 13: 8.
2. Chinen, T., et al. 2020. NuMA assemblies organize microtubule asters to establish spindle bipolarity in acentrosomal human cells. EMBO J. 39: e102378.
3. Scott, S.J., et al. 2020. Synchronization of human retinal pigment epithelial-1 cells in mitosis. J. Cell Sci. 133: jcs247940.
4. Maier, N.K., et al. 2021. Separase cleaves the kinetochore protein Meikin at the meiosis I/II transition. Dev. Cell 56: 2192-2206.e8.
5. Jeon, H.J. and Oh, J.S. 2021. TRF1 depletion reveals mutual regulation between telomeres, kinetochores, and inner centromeres in mouse oocytes. Front. Cell Dev. Biol. 9: 749116.
6. Edwards, D.M., et al. 2021. Mitotic errors promote genomic instability and leukemia in a novel mouse model of Fanconi anemia. Front. Oncol. 11: 752933.
7. Ryu, K., et al. 2022. PRL stimulates mitotic errors by suppressing kinetochore-localized activation of AMPK during mitosis. Cell Struct. Funct. 47: 75-87.
8. Kucharski, T.J., et al. 2022. Small changes in phospho-occupancy at the kinetochore-microtubule interface drive mitotic fidelity. J. Cell Biol. 221: e202107107.
9. Sobajima, T., et al. 2023. PP6 regulation of Aurora A-TPX2 limits NDC80 phosphorylation and mitotic spindle size. J. Cell Biol. 222: e202205117.
10. Yin, L., et al. 2023. Kinetochore deterioration concommitant with centromere weakening during aging in mouse oocyte meiosis-I. FASEB J. 37: e22922.


## PROTOCOLS

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