SANTA CRUZ BIOTECHNOLOGY, INC.

CENP-B (C-10): sc-376392

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

A replicated chromosome includes two kinetochores that control chromosome segregation during mitosis. Both centromere proteins CENP-B and CENP-H are contained in the centromeric heterochromatin between kinetochores, and are involved in maintaining sister chromatid cohesion. The highly dispersed CENP-B promotes and maintains the joining of DNA satellites in the centromere. CENP-B targets centromeric α-DNA and protects it from digestion by nucleases as well as preventing DNAse or restriction enzyme digestion from affecting the morphology of centromeres. CENP-H contains a coiled-coil structure and a nuclear localization signal. CENP-H is specifically and constitutively localized to kinetochores and plays a role in the organization and function of kinetochores throughout the cell cycle.

CHROMOSOMAL LOCATION

Genetic locus: CENPB (human) mapping to 20p13; Cenpb (mouse) mapping to 2 F1.

SOURCE

CENP-B (C-10) is a mouse monoclonal antibody raised against amino acids 535-599 mapping at the C-terminus of CENP-B of human origin.

PRODUCT

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

CENP-B (C-10) is available conjugated to agarose (sc-376392 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-376392 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376392 PE), fluorescein (sc-376392 FITC), Alexa Fluor® 488 (sc-376392 AF488), Alexa Fluor® 546 (sc-376392 AF546), Alexa Fluor® 594 (sc-376392 AF594) or Alexa Fluor® 647 (sc-376392 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376392 AF680) or Alexa Fluor® 790 (sc-376392 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

CENP-B (C-10) is recommended for detection of CENP-B 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 CENP-B siRNA (h): sc-37557, CENP-B siRNA (m): sc-37558, CENP-B shRNA Plasmid (h): sc-37557-SH, CENP-B shRNA Plasmid (m): sc-37558-SH, CENP-B shRNA (h) Lentiviral Particles: sc-37557-V and CENP-B shRNA (m) Lentiviral Particles: sc-37558-V.

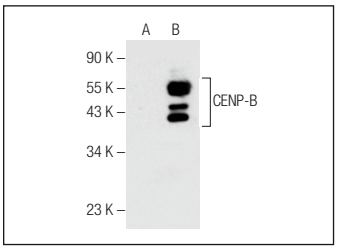
Molecular Weight of CENP-B: 80 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, A-431 whole cell lysate: sc-2201 or CENP-B (h): 293T Lysate: sc-116535.

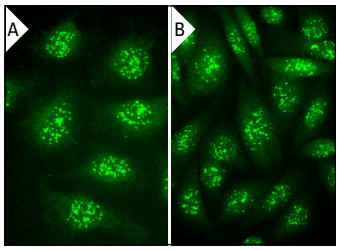
RECOMMENDED SUPPORT REAGENTS

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.

DATA



CENP-B (C-10): sc-376392. Western blot analysis of CENP-B expression in non-transfected: sc-117752 (**A**) and human CENP-B transfected: sc-116535 (**B**) 293T whole cell lysates.



CENP-B (C-10): sc-376392. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization (**A**). CENP-B (C-10) Alexa Fluor® 488: sc-376392 AF488. Direct immunofluorescence staining of formalin-fixed SW480 cells showing nuclear bodies localization. Blocked with UltraCruz® Blocking Reagent: sc-516214 (**B**).

SELECT PRODUCT CITATIONS

1. Gentili, M., et al. 2019. The N-terminal domain of cGAS determines preferential association with centromeric DNA and innate immune activation in the nucleus. Cell Rep. 26: 2377-2393.e13.
2. Traynor, S., et al. 2019. Remodeling and destabilization of chromosome 1 pericentromeric heterochromatin by SSX proteins. Nucleic Acids Res. 47: 6668-6684.
3. Chunduri, N.K., et al. 2021. Systems approaches identify the consequences of monosomy in somatic human cells. Nat. Commun. 12: 5576.
4. Paul, S., et al. 2022. Centromere defects, chromosome instability, and cGAS-STING activation in systemic sclerosis. Nat. Commun. 13: 7074.

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 for detailed protocols and support products.