

# CENP-B (2D-7): sc-32285

## 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  $\alpha$ -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.

## REFERENCES

1. Cooke, C.A., et al. 1990. CENP-B: a major human centromere protein located beneath the kinetochore. *J. Cell Biol.* 110: 1475-1488.
2. Rieder, C.L., et al. 1998. The vertebrate cell kinetochore and its roles during mitosis. *Trends Cell Biol.* 8: 310-318.
3. Barbosa-Cisneros, O., et al. 1998. Localization of the centromere protein CENP-B using scleroderma sera and evidence for a role in centromere survival. *Rev. Rhum. Engl. Ed* 65: 15-20.
4. Sugata, N., et al. 1999. Characterization of a novel kinetochore protein, CENP-H. *J. Biol. Chem.* 274: 27343-27346.
5. Choo, K.H. 2000. Centromerization. *Trends Cell Biol.* 10: 182-188.
6. Ohzeki, J., et al. 2002. CENP-B box is required for *de novo* centromere chromatin assembly on human alphoid DNA. *J. Cell Biol.* 159: 765-775.
7. Suzuki, N., et al. 2004. CENP-B interacts with CENP-C domains containing Mif2 regions responsible for centromere localization. *J. Biol. Chem.* 279: 5934-5946.

## CHROMOSOMAL LOCATION

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

## SOURCE

CENP-B (2D-7) is a mouse monoclonal antibody raised against human CENP-B peptide.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## 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](http://www.scbt.com) for detailed protocols and support products.

## APPLICATIONS

CENP-B (2D-7) is recommended for detection of CENP-B of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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.

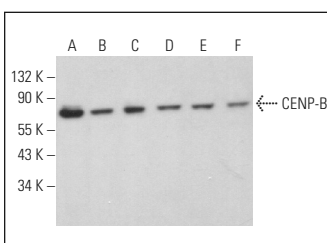
Molecular Weight of CENP-B: 80 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, Jurkat whole cell lysate: sc-2204 or HeLa whole cell lysate: sc-2200.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



CENP-B (2D-7): sc-32285. Western blot analysis of CENP-B expression in A-431 (A), Jurkat (B), HeLa (C), RAW 264.7 (D), 3T3-L1 (E) and J774.A1 (F) whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Leman, A.R., et al. 2010. Human Timeless and Tipin stabilize replication forks and facilitate sister-chromatid cohesion. *J. Cell Sci.* 123: 660-670.
2. Yeh, C.W., et al. 2014. Phosphorylation at threonine 288 by cell cycle checkpoint kinase 2 (CHK2) controls human monopolar spindle 1 (Mps1) kinetochore localization. *J. Biol. Chem.* 289: 15319-15327.
3. Kumon, T., et al. 2021. Parallel pathways for recruiting effector proteins determine centromere drive and suppression. *Cell* 184: 4904-4918.e11.

## RESEARCH USE

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