

# BUB3 (31): sc-136217

## BACKGROUND

BUB3 (budding uninhibited by benzimidazoles 3 homolog), also known as BUB3L or hBUB3, is a conserved component of the mitotic spindle assembly complex (MCC). It contains five WD repeat domains and forms cell cycle constitutive complexes with BUB1 and BUBR1. BUB3 is essential for the kinetochore localization of BUB1 and BUBR1. As a component of the MCC, BUB3 is involved in the essential spindle checkpoint pathway that operates during early embryogenesis. The spindle checkpoint pathway functions to postpone the initiation of anaphase until chromosomes are properly attached to the spindle. This acts to ensure accurate chromosome segregation. In addition, BUB3 plays a role in regulating the establishment of correct kinetochore-microtubule attachments. BUB3 is also thought to bind Tctex1L (or DYNLT3), a dynein light chain.

## REFERENCES

- Roberts, B.T., et al. 1994. The *Saccharomyces cerevisiae* checkpoint gene BUB1 encodes a novel protein kinase. *Mol. Cell. Biol.* 14: 8282-8291.
- Guenette, S., et al. 1995. Suppression of a conditional mutation in  $\alpha$ -Tubulin by overexpression of two checkpoint genes. *J. Cell Sci.* 108: 1195-1204.
- Farr, K.A., et al. 1998. Bub1p kinase activates the *Saccharomyces cerevisiae* spindle assembly checkpoint. *Mol. Cell. Biol.* 18: 2738-2747.
- Martinez-Exposito, M.J., et al. 1999. Retention of the BUB3 checkpoint protein on lagging chromosomes. *Proc. Natl. Acad. Sci. USA* 96: 8493-8498.
- Ru, H.Y., et al. 2002. hBUB1 defects in leukemia and lymphoma cells. *Oncogene* 21: 4673-4679.
- Warren, C.D., et al. 2002. Distinct chromosome segregation roles for spindle checkpoint proteins. *Mol. Biol. Cell* 13: 3029-3041.
- Braunstein, I., et al. 2007. Inhibitory factors associated with anaphase-promoting complex/cytosome in mitotic checkpoint. *Proc. Natl. Acad. Sci. USA* 104: 4870-4875.

## CHROMOSOMAL LOCATION

Genetic locus: BUB3 (human) mapping to 10q26.13; Bub3 (mouse) mapping to 7 F3.

## SOURCE

BUB3 (31) is a mouse monoclonal antibody raised against amino acids 4-16 of BUB3 of human origin.

## 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.

## APPLICATIONS

BUB3 (31) is recommended for detection of BUB3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 BUB3 siRNA (h): sc-37540, BUB3 siRNA (m): sc-37541, BUB3 shRNA Plasmid (h): sc-37540-SH, BUB3 shRNA Plasmid (m): sc-37541-SH, BUB3 shRNA (h) Lentiviral Particles: sc-37540-V and BUB3 shRNA (m) Lentiviral Particles: sc-37541-V.

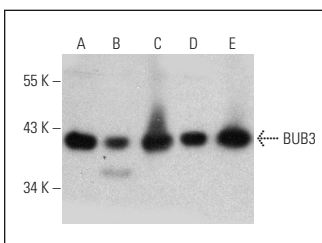
Molecular Weight of BUB3: 40 kDa.

Positive Controls: Jurkat nuclear extract: sc-2132, NIH/3T3 nuclear extract: sc-2138 or MDA-MB-231 cell lysate: sc-2232.

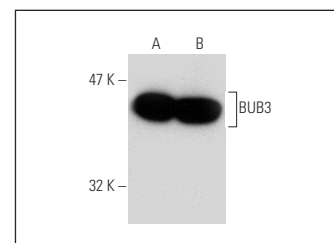
## RECOMMENDED SUPPORT REAGENTS

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™ 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-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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



BUB3 (31): sc-136217. Western blot analysis of BUB3 expression in Jurkat (A), MDA-MB-231 (B), CCRF-CEM (C), F9 (D) and RBL-1 (E) whole cell lysates.



BUB3 (31): sc-136217. Western blot analysis of BUB3 expression in Jurkat (A) and NIH/3T3 (B) nuclear extracts.

## SELECT PRODUCT CITATIONS

- Raab, M., et al. 2018. PLK1 has tumor-suppressive potential in APC-truncated colon cancer cells. *Nat. Commun.* 9: 1106.
- Austria, T., et al. 2018. Mechanism of cytokinesis failure in ovarian cystadenomas with defective BRCA1 and p53 pathways. *Int. J. Cancer.* E-published.

## RESEARCH USE

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