SANTA CRUZ BIOTECHNOLOGY, INC.

BUB1 (14H5): sc-47743

The Power to Question

BACKGROUND

Human cells contain two related protein kinases, BUB1 and BUBR1, that appear to have evolved from a single ancestral BUB1 gene. Both kinases are concentrated near the surface of the kinetochore where they monitor kinetochore-microtubule interactions. BUB1 and BUBR1 bind to kinetochores and are postulated to be components of the mitotic checkpoint, which monitors kinetochore activities to determine if chromosomes have achieved alignment at the spindle equator. BUBR1 is essential for normal mitotic progression as it prevents cells from prematurely entering anaphase. BUB3 is a conserved component of the mitotic spindle assembly complex and is also involved with the essential spindle checkpoint pathway that operates during early embryogenesis.

REFERENCES

1. Donadelli, R., et al. 1998. Identification of a novel gene—SSK1—in human endothelial cells exposed to shear stress. Biochem. Biophys. Res. Commun. 246: 881-887.
2. Jablonski, S.A., et al. 1998. The hBUB1 and hBUBR1 kinases sequentially assemble onto kinetochores during prophase with hBUBR1 concentrating at the kinetochore plates in mitosis. Chromosoma 107: 386-396.
3. Chan, G.K., et al. 1999. Human BUBR1 is a mitotic checkpoint kinase that monitors CENP-E functions at kinetochores and binds the cyclosome/APC. J. Cell Biol. 146: 941-954.
4. Li, W., et al. 1999. BUBR1 phosphorylation is regulated during mitotic checkpoint activation. Cell Growth Differ. 10: 769-775.
5. Abrieu, A., et al. 2000. CENP-E as an essential component of the mitotic checkpoint *in vitro*. Cell 102: 817-826.
6. Kalitsis, P., et al. 2000. Bub3 gene disruption in mice reveals essential mitotic spindle checkpoint function during early embryogenesis. Genes Dev. 18: 2277-2282.

CHROMOSOMAL LOCATION

Genetic locus: BUB1 (human) mapping to 2q13.

SOURCE

BUB1 (14H5) is a mouse monoclonal antibody raised against full length BUB1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 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 for detailed protocols and support products.

APPLICATIONS

BUB1 (14H5) is recommended for detection of BUB1 of 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 BUB1 siRNA (h): sc-37538, BUB1 shRNA Plasmid (h): sc-37538-SH and BUB1 shRNA (h) Lentiviral Particles: sc-37538-V.

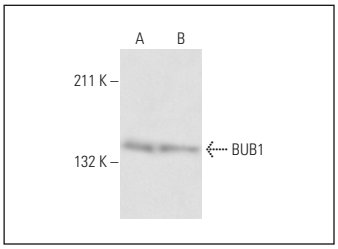
Molecular Weight of BUB1: 150 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, HeLa + Nocodazole cell lysate: sc-2274 or K-562 whole cell lysate: sc-2203.

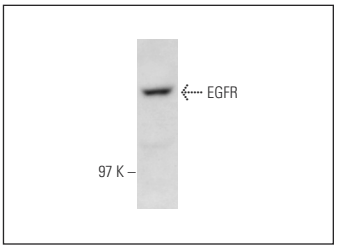
RECOMMENDED SUPPORT REAGENTS

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



BUB1 (14H5): sc-47743. Western blot analysis of BUB1 expression in HeLa (**A**) and Nocodazole treated HeLa (**B**) whole cell lysates.



EGFR (F4): sc-53274. Western blot analysis of EGFR expression in untreated A-431 (**A**), EGF treated A-431 (**B**) and SCC-4 (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Wang, Y.C., et al. 2010. Arecoline arrests cells at prometaphase by deregulating mitotic spindle assembly and spindle assembly checkpoint: implication for carcinogenesis. Oral Oncol. 46: 255-262.
2. Wang, Y.C., et al. 2018. The EGF/hnRNP Q1 axis is involved in tumorigenesis via the regulation of cell cycle-related genes. Exp. Mol. Med. 50: 70.
3. Ma, H., et al. 2019. Super-enhancer-associated hub genes in chronic myeloid leukemia identified using weighted gene co-expression network analysis. Cancer Manag. Res. 11: 10705-10718.

RESEARCH USE

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