SANTA CRUZ BIOTECHNOLOGY, INC.

Bub2 (yV-19): sc-23574

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The mitotic checkpoint blocks cell cycle progression before anaphase in case of mistakes in the alignment of chromosomes on the mitotic spindle. In budding yeast, the Mad1-3, and Bub1-3 proteins mediate this arrest. Unlike the other Mad and Bub proteins, Bub2 localizes at the spindle pole body (SPB) throughout the cell cycle. In the presence of kinetochore or spindle damage, Bub2 cells initiate a preanaphase delay but do not maintain it. The continuous presence of Bub2 protein is required for maintaining spindle damage-induced arrest. Cell-cycle arrest depends upon inhibition of the G-protein Tem1 that appears to be regulated by Bfa1/Bub2, a two-component GTPase-activating protein, and the exchange factor Lte1. Bub2 and Bfa1 physically associate across the entire cell cycle and bind to Tem1 during mitosis and early G1. Bfa1 is multiply phosphorylated in a cell-cycle-dependent manner with the major phosphorylation occurring in mitosis and this Bfa1 phosphorylation is Bub2-dependent. Bfa1 also can play a role in the regulation of mitotic exit by directly inhibiting the interaction between Tem1 and Cdc15 even in the absence of Bub2.

REFERENCES

1. Fraschini, R., et al. 1999. Budding yeast Bub2 is localized at spindle pole bodies and activates the mitotic checkpoint via a different pathway from Mad2. J. Cell Biol. 145: 979-991.
2. Pereira, G., et al. 2000. The Bub2p spindle checkpoint links nuclear migration with mitotic exit. Mol. Cell 6: 1-10.
3. Krishnan, R., et al. 2000. *Saccharomyces cerevisiae* BUB2 prevents mitotic exit in response to both spindle and kinetochore damage. Genetics 156: 489-500.
4. Lee, S.E., et al. 2001. The Bub2-dependent mitotic pathway in yeast acts every cell cycle and regulates cytokinesis. J. Cell Sci. 114: 2345-2354.
5. Ro, H.S., et al. 2002. Bfa1 can regulate Tem1 function independently of Bub2 in the mitotic exit network of *Saccharomyces cerevisiae*. Proc. Natl. Acad. Sci. U.S.A. 99: 5436-5441.

SOURCE

Bub2 (yV-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Bub2 of *Saccharomyces cerevisiae* origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-23574 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

Bub2 (yV-19) is recommended for detection of Bub2 of Saccaromyces cerevisiae origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

PROTOCOLS

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