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Bub1 Antibody

Catalog # ASC10542

Product Information

Application	WB, IF, ICC, E
Primary Accession	O43683
Other Accession	O43683, 8134347
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	122375
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	Bub1 antibody can be used for detection of bub1 by Western blot at 2 - 4 g/mL. Antibody can also be used for immunocytochemistry starting at 10 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	699
Other Names	Mitotic checkpoint serine/threonine-protein kinase BUB1, hBUB1, 2.7.11.1, BUB1A, BUB1, BUB1L
Target/Specificity	BUB1;
Reconstitution & Storage	Bub1 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	Bub1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	BUB1
Synonyms	BUB1L
Function	Serine/threonine-protein kinase that performs 2 crucial functions during mitosis: it is essential for spindle-assembly checkpoint signaling and for correct chromosome alignment. Has a key role in the assembly of checkpoint proteins at the kinetochore, being required for the subsequent localization of CENPF, BUB1B, CENPE and MAD2L1. Required for the kinetochore localization of PLK1. Required for centromeric enrichment of AUKRB in prometaphase. Plays an important role in defining SGO1 localization and thereby affects

	sister chromatid cohesion. Promotes the centromeric localization of TOP2A (PubMed:35044816). Acts as a substrate for anaphase-promoting complex or cyclosome (APC/C) in complex with its activator CDH1 (APC/C-Cdh1). Necessary for ensuring proper chromosome segregation and binding to BUB3 is essential for this function. Can regulate chromosome segregation in a kinetochore-independent manner. Can phosphorylate BUB3. The BUB1-BUB3 complex plays a role in the inhibition of APC/C when spindle-assembly checkpoint is activated and inhibits the ubiquitin ligase activity of APC/C by phosphorylating its activator CDC20. This complex can also phosphorylate MAD1L1. Kinase activity is essential for inhibition of APC/CCDC20 and for chromosome alignment but does not play a major role in the spindle-assembly checkpoint activity. Mediates cell death in response to chromosome missegregation and acts to suppress spontaneous tumorigenesis.
Cellular Location	Nucleus. Chromosome, centromere, kinetochore. Note=Nuclear in interphase cells. Accumulates gradually during G1 and S phase of the cell cycle, peaks at G2/M, and drops dramatically after mitosis. Localizes to the outer kinetochore. Kinetochore localization is required for normal mitotic timing and checkpoint response to spindle damage and occurs very early in prophase. AURKB, KNL1 and INCENP are required for kinetochore localization (By similarity)
Tissue Location	High expression in testis and thymus, less in colon, spleen, lung and small intestine. Expressed in fetal thymus, bone marrow, heart, liver, spleen and thymus. Expression is associated with cells/tissues with a high mitotic index

Background

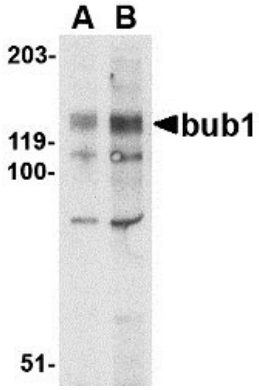
Bub1 Antibody: Bub1 was initially identified as the mammalian homolog to the yeast protein through a cDNA screen. Bub1 encodes a kinase involved in the formation of the spindle checkpoint, an important mechanism that ensures high fidelity mitotic chromosome segregation. It is thought to be required for assembly of a functional inner centromere, sister chromatid cohesion via targeting of the Shugoshim protein and metaphase congression. Bub1 functions by phosphorylating cdc20, a member of the mitotic checkpoint complex and activating the spindle checkpoint. A related protein kinase Bub3 interacts with Bub1 and targets it to kinetochores prior to chromosome alignment. Mutations in bub1 have been associated with aneuploidy and several forms of cancer.

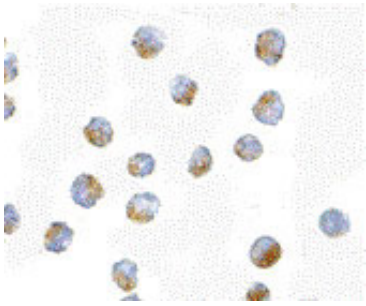
References

Pangilinan F, Li Q, Weaver T, et al. Mammalian BUB1 protein kinases: map positions and in vivo expression. Genomics1997; 46:379-88.
Williams GL, Roberts TM and Gjoerup OV. Bub1: Escapades in a cellular world. Cell Cycle2007; 6:1699-704.
Meraldi P and Sorger PK. A dual role for Bub1 in the spindle checkpoint and chromosome congression. EMBO J.2005; 24:1621-33.
Tang Z, Shu H, Oncel D, et al. Phosphorylation of cdc20 by bub1 provides a catalytic mechanism for APC/C inhibition by the spindle checkpoint. Mol. Cell2004; 16:387-97.

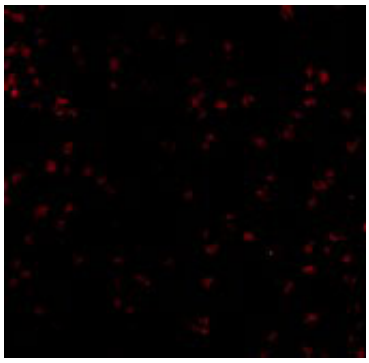
Images

Western blot analysis of bub1 in A-20 lysate with bub1 antibody at (A) 2 and (B) 4 µg/mL.





Immunocytochemistry of Bub1 in A20 cells with Bub1 antibody at 10 µg/mL.



Immunofluorescence of Bub1 in A20 cells with Bub1 antibody at 20 µg/mL.