SANTA CRUZ BIOTECHNOLOGY, INC.

ZW10 (3363C4a): sc-81430

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

ZW10 is the human homolog of the *Drosophila melanogaster* ZW10 protein and is involved in proper chromosome segregation and kinetochore function during cell division. An essential component of the mitotic checkpoint, ZW10 binds to centromeres during prophase and anaphase and to kinetochrore microtubules during metaphase, thereby preventing the cell from prematurely exiting mitosis. ZW10 localization varies throughout the cell cycle, beginning in the cytoplasm during interphase, then moving to the kinetochore and spindle midzone during metaphase and late anaphase, respectively. A widely expressed protein, ZW10 is also involved in membrane trafficking between the Golgi and the endoplasmic reticulum (ER) via interaction with the SNARE complex. Both overexpression and silencing of ZW10 disrupts the ER-Golgi transport system, as well as the morphology of the ER-Golgi intermediate compartment. This suggests that ZW10 plays a critical role in proper inter-compartmental protein transport.

REFERENCES

1. Starr, D.A., et al. 1998. ZW10 helps recruit Dynactin and Dynein to the kinetochore. J. Cell Biol. 142: 763-774.
2. Scaërou, F., et al. 2001. The ZW10 and Rough Deal checkpoint proteins function together in a large, evolutionarily conserved complex targeted to the kinetochore. J. Cell Sci. 114: 3103-3114.
3. Hirose, H., et al. 2004. Implication of ZW10 in membrane trafficking between the endoplasmic reticulum and Golgi. EMBO J. 23: 1267-1278.
4. Kops, G.J., et al. 2005. ZW10 links mitotic checkpoint signaling to the structural kinetochore. J. Cell Biol. 169: 49-60.
5. Varma, D., et al. 2006. Role of the kinetochore/cell cycle checkpoint protein ZW10 in interphase cytoplasmic Dynein function. J. Cell Biol. 172: 655-662.
6. Arasaki, K., et al. 2006. RINT-1 regulates the localization and entry of ZW10 to the Syntaxin 18 complex. Mol. Biol. Cell 17: 2780-2788.
7. Lin, Y.T., et al. 2006. Hec1 sequentially recruits Zwint-1 and ZW10 to kinetochores for faithful chromosome segregation and spindle checkpoint control. Oncogene 25: 6901-6914.

CHROMOSOMAL LOCATION

Genetic locus: ZW10 (human) mapping to 11q23.2.

SOURCE

ZW10 (3363C4a) is a mouse monoclonal antibody raised against a recombinant protein corresponding to an internal region of ZW10 of human origin.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 1.0% stabilizer protein.

APPLICATIONS

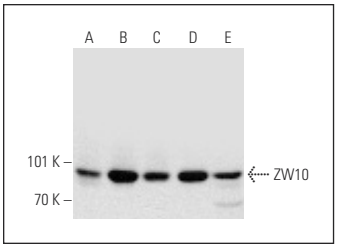
ZW10 (3363C4a) is recommended for detection of ZW10 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and flow cytometry (1 µg per 1 x 10^6 cells).

Suitable for use as control antibody for ZW10 siRNA (h): sc-63259, ZW10 shRNA Plasmid (h): sc-63259-SH and ZW10 shRNA (h) Lentiviral Particles: sc-63259-V.

Molecular Weight of ZW10: 85 kDa.

Positive Controls: Ramos cell lysate: sc-2216, Jurkat whole cell lysate: sc-2204 or K-562 whole cell lysate: sc-2203.

DATA



ZW10 (3363C4a): sc-81430. Western blot analysis of ZW10 expression in HeLa (**A**), K-562 (**B**), Ramos (**C**), Jurkat (**D**) and U-937 (**E**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Dharan, A., et al. 2017. Bicaudal D2 facilitates the cytoplasmic trafficking and nuclear import of HIV-1 genomes during infection. Proc. Natl. Acad. Sci. USA 114: E10707-E10716.
2. Pagotto, S., et al. 2018. Hsa-miR-155-5p drives aneuploidy at early stages of cellular transformation. Oncotarget 9: 13036-13047.
3. Escudero-Paniagua, B., et al. 2019. PAUF/ZG16B promotes colorectal cancer progression through alterations of the mitotic functions and the Wnt/β-catenin pathway. Carcinogenesis 41: 203-213.
4. Kuhn, J. and Dumont, S. 2019. Mammalian kinetochores count attached microtubules in a sensitive and switch-like manner. J. Cell Biol. 218: 3583-3596.
5. Hirata, Y., et al. 2022. ER-to-Golgi trafficking of procollagen III via conventional vesicular and tubular carriers. Mol. Biol. Cell. E-published.

RESEARCH USE

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