

ZW10 siRNA (m): sc-63260

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 kinetochore 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

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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.
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CHROMOSOMAL LOCATION

Genetic locus: Zw10 (mouse) mapping to 9 A5.3.

PRODUCT

ZW10 siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ZW10 shRNA Plasmid (m): sc-63260-SH and ZW10 shRNA (m) Lentiviral Particles: sc-63260-V as alternate gene silencing products.

For independent verification of ZW10 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-63260A, sc-63260B and sc-63260C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

ZW10 siRNA (m) is recommended for the inhibition of ZW10 expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 μ M in 66 μ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ZW10 gene expression knockdown using RT-PCR Primer: ZW10 (m)-PR: sc-63260-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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

PROTOCOLS

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