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Sgo1 siRNA (m): sc-153422

BACKGROUND

Sgo1 (shugoshin-like 1), also known as SGO or NY-BR-85, is a 561 amino acid nuclear and cytoplasmic protein that is widely expressed with highest expression in testis. Sgo1 localizes to the inner centromere throughout prophase until metaphase. Sgo1 is suggested to prevent premature dissociation of the cohesin complex from centromeres after prophase by impeding phosphorylation of the SA-2 subunit of the cohesin complex at the centromere. This ensures cohesin persistence at the centromere until cohesin cleavage is achieved by Separase at the anaphase stage of mitosis. Sgo1 is essential for proper chromosome segregation and for proper attachment of spindle microtubule to the kinetochore. Sgo1 may also play a role in the tension sensing mechanism of the spindle-assembly checkpoint by regulating Plk kinetochore affinity. Sgo1 exists as seven alternatively isoforms one of which (isoform 3) does not localize to kinetochores during any stages of the cell cycle.

REFERENCES

1. Tang, Z., et al. 2004. Human Bub1 protects centromeric sister-chromatid cohesion through Shugoshin during mitosis. *Proc. Natl. Acad. Sci. USA* 101: 18012-18017.
2. Goulding, S.E. and Earnshaw, W.C. 2005. Shugoshin: a centromeric guardian senses tension. *Bioessays* 27: 588-591.
3. Gimenez-Abián, J.F., et al. 2005. Regulated separation of sister centromeres depends on the spindle assembly checkpoint but not on the anaphase promoting complex/cyclosome. *Cell Cycle* 4: 1561-1575.
4. Hamant, O., et al. 2005. A REC8-dependent plant Shugoshin is required for maintenance of centromeric cohesion during meiosis and has no mitotic functions. *Curr. Biol.* 15: 948-954.
5. Vaur, S., et al. 2005. Control of Shugoshin function during fission-yeast meiosis. *Curr. Biol.* 15: 2263-2270.
6. Kiburz, B.M., et al. 2005. The core centromere and Sgo1 establish a 50-kb cohesin-protected domain around centromeres during meiosis I. *Genes Dev.* 19: 3017-3030.
7. Indjeian, V.B., et al. 2005. The centromeric protein Sgo1 is required to sense lack of tension on mitotic chromosomes. *Science* 307: 130-133.

CHROMOSOMAL LOCATION

Genetic locus: Sgo1 (mouse) mapping to 17 C.

PRODUCT

Sgo1 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 Sgo1 shRNA Plasmid (m): sc-153422-SH and Sgo1 shRNA (m) Lentiviral Particles: sc-153422-V as alternate gene silencing products.

For independent verification of Sgo1 (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-153422A, sc-153422B and sc-153422C.

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

Sgo1 siRNA (m) is recommended for the inhibition of Sgo1 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.

GENE EXPRESSION MONITORING

Sgo1 (F-8): sc-393993 is recommended as a control antibody for monitoring of Sgo1 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Sgo1 gene expression knockdown using RT-PCR Primer: Sgo1 (m)-PR: sc-153422-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.