SANTA CRUZ BIOTECHNOLOGY, INC.

Sec31A siRNA (h): sc-89169

BACKGROUND

WD-repeats are motifs that are found in a variety of proteins and are characterized by a conserved core of 40-60 amino acids that commonly form a tertiary propeller structure. While proteins that contain WD-repeats participate in a wide range of cellular functions, they are generally involved in regulatory mechanisms concerning chromatin assembly, cell cycle control, signal transduction, RNA processing, apoptosis and vesicular trafficking. Sec31A, also known as ABP125, ABP130 or SEC31L1, is a 1,220 amino acid protein that contains seven WD repeats and localizes to the cytoplasm and to cytoplasmic vesicles, as well as to the membrane of the endoplasmic reticulum (ER). Expressed ubiquitously at high levels, Sec31A functions as a component of the COP II (coat protein II) complex and, working in tandem with other proteins, promotes the formation of ER transport vesicles and aids in the selection of cargo molecules. Chromosomal aberrations that involve the Sec31A gene are associated with inflammatory myofibroblastic tumors (IMTs), suggesting a role for Sec31A in carcinogenesis. Multiple isoforms of Sec31A exist due to alternative splicing events.

REFERENCES

1. Lippincott-Schwartz, J., et al. 2000. Secretory protein trafficking and organelle dynamics in living cells. Annu. Rev. Cell Dev. Biol. 16: 557-589.
2. Tang, B.L., et al. 2000. Mammalian homologues of yeast sec31p. An ubiquitously expressed form is localized to endoplasmic reticulum (ER) exit sites and is essential for ER-Golgi transport. J. Biol. Chem. 275: 13597-13604.
3. Kirchhausen, T. 2000. Three ways to make a vesicle. Nat. Rev. Mol. Cell Biol. 1: 187-198.
4. Panagopoulos, I., et al. 2006. Fusion of the SEC31L1 and ALK genes in an inflammatory myofibroblastic tumor. Int. J. Cancer 118: 1181-1186.
5. Yamasaki, A., et al. 2006. The Ca^{2+}-binding protein ALG-2 is recruited to endoplasmic reticulum exit sites by Sec31A and stabilizes the localization of Sec31A. Mol. Biol. Cell 17: 4876-4887.
6. Stagg, S.M., et al. 2006. Structure of the Sec13/31 COPII coat cage. Nature 439: 234-238.

CHROMOSOMAL LOCATION

Genetic locus: SEC31A (human) mapping to 4q21.22.

PRODUCT

Sec31A siRNA (h) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Sec31A shRNA Plasmid (h): sc-89169-SH and Sec31A shRNA (h) Lentiviral Particles: sc-89169-V as alternate gene silencing products.

For independent verification of Sec31A (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-89169A, sc-89169B and sc-89169C.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Sec31A siRNA (h) is recommended for the inhibition of Sec31A expression in human 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 µM in 66 µl. 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

Sec31A (H-2): sc-376587 is recommended as a control antibody for monitoring of Sec31A 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 Sec31A gene expression knockdown using RT-PCR Primer: Sec31A (h)-PR: sc-89169-PR (20 µl). 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.