SANTA CRUZ BIOTECHNOLOGY, INC.

Syne-3 siRNA (m): sc-108966

BACKGROUND

Syne-3 (spectrin repeat containing, nuclear envelope family member 3), also known as Nesprin-3 or C14orf49, is a 975 amino acid single-pass type IV membrane protein that is expressed predominately in aortic endothelial cells. Belonging to the nesprin family, Syne-3 contains one KASH domain, which is involved in the binding of SUN1 and SUN2, and two spectrin domains. Syne-3 is a component of the LINC complex, which is involved in the linking of the nucleoskeleton and cytoskeleton by providing nuclear membrane attachments sites to cytoskeletal filaments. The LINC complex is comprised of SUN domain containing proteins SUN1 or SUN2, which couple with KASH domain-containing proteins, Syne-1, Syne-2 and Syne-3. Syne-3 intereacts with Plectin, BPAG1 and Syne-1, and may be involved in the regulation of aortic epithelial cell morphology. Syne-3 is a probable anchoring protein.

REFERENCES

1. Warren, D.T., et al. 2005. Nesprins: intracellular scaffolds that maintain cell architecture and coordinate cell function? Expert Rev. Mol. Med. 7: 1-15.
2. Wilhelmsen, K., et al. 2005. Nesprin-3, a novel outer nuclear membrane protein, associates with the cytoskeletal linker protein plectin. J. Cell Biol. 171: 799-810.
3. Grady, R.M., et al. 2005. Syne proteins anchor muscle nuclei at the neuromuscular junction. Proc. Natl. Acad. Sci. USA 102: 4359-4364.
4. Stewart-Hutchinson, P.J., et al. 2008. Structural requirements for the assembly of LINC complexes and their function in cellular mechanical stiffness. Exp. Cell Res. 314: 1892-1905.
5. Nery, F.C., et al. 2008. TorsinA binds the KASH domain of nesprins and participates in linkage between nuclear envelope and cytoskeleton. J. Cell Sci. 121: 3476-3486.
6. Morgan, J.T., et al. 2011. Nesprin-3 regulates endothelial cell morphology, perinuclear cytoskeletal architecture, and flow-induced polarization. Mol. Biol. Cell 22: 4324-4334.

CHROMOSOMAL LOCATION

Genetic locus: Syne3 (mouse) mapping to 12 E.

PRODUCT

Syne-3 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Syne-3 shRNA Plasmid (m): sc-108966-SH and Syne-3 shRNA (m) Lentiviral Particles: sc-108966-V as alternate gene silencing products.

For independent verification of Syne-3 (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-108966A, sc-108966B and sc-108966C.

RESEARCH USE

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

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

Syne-3 siRNA (m) is recommended for the inhibition of Syne-3 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Syne-3 gene expression knockdown using RT-PCR Primer: Syne-3 (m)-PR: sc-108966-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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