

# SPNS1 siRNA (h): sc-93215

## BACKGROUND

SPNS1 (spinster homolog 1), also known as LAT, nrs or SPINL, is a 528 amino acid multi-pass membrane protein that localizes to the inner mitochondrial membrane and belongs to the spinster subfamily of the major facilitator superfamily. Existing as four alternatively spliced isoforms, SPNS1 interacts with Bcl-x and Bcl-2 and, via this interaction, is thought to be involved in necrotic or autophagic cell death. The gene encoding SPNS1 maps to human chromosome 16, which encodes over 900 genes and comprises nearly 3% of the human genome. The GAN gene is located on chromosome 16 and, with mutation, may lead to giant axonal neuropathy, a nervous system disorder characterized by increasing malfunction with growth. The rare disorder Rubinstein-Taybi syndrome is also associated with chromosome 16, as is Crohn's disease, which is a gastrointestinal inflammatory condition.

## REFERENCES

1. Gilbert, F. 1999. Disease genes and chromosomes: disease maps of the human genome. *Chromosome 16. Genet. Test.* 3: 243-254.
2. Nakano, Y., Fujitani, K., Kurihara, J., Ragan, J., Usui-Aoki, K., Shimoda, L., Lukacsovich, T., Suzuki, K., Sezaki, M., Sano, Y., Ueda, R., Awano, W., Kaneda, M., Umeda, M. and Yamamoto, D. 2001. Mutations in the novel membrane protein spinster interfere with programmed cell death and cause neural degeneration in *Drosophila melanogaster*. *Mol. Cell. Biol.* 21: 3775-3788.
3. Yanagisawa, H., Miyashita, T., Nakano, Y. and Yamamoto, D. 2003. HSpin1, a transmembrane protein interacting with Bcl-2/Bcl-x<sub>L</sub>, induces a caspase-independent autophagic cell death. *Cell Death Differ.* 10: 798-807.
4. An, H., Morrell, J.L., Jennings, J.L., Link, A.J. and Gould, K.L. 2004. Requirements of fission yeast septins for complex formation, localization, and function. *Mol. Biol. Cell* 15: 5551-5564.
5. Rakha, E.A., Green, A.R., Powe, D.G., Roylance, R. and Ellis, I.O. 2006. Chromosome 16 tumor-suppressor genes in breast cancer. *Genes Chromosomes Cancer* 45: 527-535.
6. Gervasini, C., Castronovo, P., Bentivegna, A., Mottadelli, F., Faravelli, F., Giovannucci-Uzielli, M.L., Pessagno, A., Lucci-Cordisco, E., Pinto, A.M., Salvati, L., Selicorni, A., Tenconi, R., Neri, G. and Larizza, L. 2007. High frequency of mosaic CREBBP deletions in Rubinstein-Taybi syndrome patients and mapping of somatic and germ-line breakpoints. *Genomics* 90: 567-573.

## CHROMOSOMAL LOCATION

Genetic locus: SPNS1 (human) mapping to 16p11.2.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

## PRODUCT

SPNS1 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SPNS1 shRNA Plasmid (h): sc-93215-SH and SPNS1 shRNA (h) Lentiviral Particles: sc-93215-V as alternate gene silencing products.

For independent verification of SPNS1 (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-93215A, sc-93215B and sc-93215C.

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

## APPLICATIONS

SPNS1 siRNA (h) is recommended for the inhibition of SPNS1 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  $\mu$ M in 66  $\mu$ 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 SPNS1 gene expression knockdown using RT-PCR Primer: SPNS1 (h)-PR: sc-93215-PR (20  $\mu$ l, 476 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.