SANTA CRUZ BIOTECHNOLOGY, INC.

SPNS2 siRNA (h): sc-106749

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

SPNS2 (spinster homolog 2) is a 549 amino acid multi-pass membrane protein that belongs to the spinster subfamily of major facilitator proteins. The gene encoding SPNS2 maps to human chromosome 17, which comprises over 2.5% of the human genome and encodes over 1,200 genes. Two key tumor suppressor genes are associated with chromosome 17, namely, p53 and BRCA1. Tumor suppressor p53 is necessary for maintenance of cellular genetic integrity by moderating cell fate through DNA repair versus cell death. Malfunction or loss of p53 expression is associated with malignant cell growth and Li-Fraumeni syndrome. Like p53, BRCA1 is directly involved in DNA repair, though specifically it is recognized as a genetic determinant of early onset breast cancer and predisposition to cancers of the ovary, colon, prostate gland and fallopian tubes.

REFERENCES

1. Zhang, Z.Y., et al. 2006. Expression of MAC30 in rectal cancers with or without preoperative radiotherapy. Oncology 71: 259-265.
2. Nusbaum, R., et al. 2006-2007. Susceptibility to breast cancer: hereditary syndromes and low penetrance genes. Breast Dis. 27: 21-50.
3. Wilcox, C.B., et al. 2007. Coordinate upregulation of TMEM97 and cholesterol biosynthesis genes in normal ovarian surface epithelial cells treated with progesterone: implications for pathogenesis of ovarian cancer. BMC Cancer 7: 223.
4. Ropolo, A., et al. 2007. The pancreatitis-induced vacuole membrane protein 1 triggers autophagy in mammalian cells. J. Biol. Chem. 282: 37124-37133.
5. Tai, Y.C., et al. 2007. Breast cancer risk among male BRCA1 and BRCA2 mutation carriers. J. Natl. Cancer Inst. 99: 1811-1814.
6. Yan, J., et al. 2007. BLIMP1 regulates cell growth through repression of p53 transcription. Proc. Natl. Acad. Sci. USA 104: 1841-1846.

CHROMOSOMAL LOCATION

Genetic locus: SPNS2 (human) mapping to 17p13.3.

PRODUCT

SPNS2 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 SPNS2 shRNA Plasmid (h): sc-106749-SH and SPNS2 shRNA (h) Lentiviral Particles: sc-106749-V as alternate gene silencing products.

For independent verification of SPNS2 (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-106749A, sc-106749B and sc-106749C.

PROTOCOLS

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

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

SPNS2 siRNA (h) is recommended for the inhibition of SPNS2 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SPNS2 gene expression knockdown using RT-PCR Primer: SPNS2 (h)-PR: sc-106749-PR (20 µl, 553 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Fu, P., et al. 2016. Role of sphingosine kinase 1 and S1P transporter SPNS2 in HGF-mediated lamellipodia formation in lung endothelium. J. Biol. Chem. 291: 27187-27203.
2. Ha, A.W., et al. 2022. Sphingosine kinase 1 regulates lysyl oxidase through STAT3 in hyperoxia-mediated neonatal lung injury. Thorax 77: 47-57.

RESEARCH USE

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