

## TSPAN2 siRNA (h): sc-88080

### BACKGROUND

TSPAN2 (Tetraspanin-2) is a 221 amino acid member of the tetraspanin (TM4SF) family. Tetraspanins are a group of hydrophobic membrane proteins that interact with a wide variety of proteins including intracellular signaling molecules, integrins and membrane receptors. Members of the tetraspanin family are characterized by the presence of four hydrophobic domains and play a role in cell development, activation, growth and motility. It is believed TSPAN2 plays a role in signalling in oligodendrocytes in the early stages of their terminal differentiation into myelin-forming glia and may also function in stabilizing the mature sheath. TSPAN2 is encoded by a gene located on Chromosome 1 which is the largest human chromosome spanning about 260 million base pairs and making up 8% of the human genome. There are about 3,000 genes on chromosome 1, and considering the great number of genes there are also a large number of diseases associated with chromosome 1. Notably, the rare aging disease Hutchinson-Gilford progeria is associated with the LMNA gene which encodes lamin A. When defective, the LMNA gene product can build up in the nucleus and cause characteristic nuclear blebs. The mechanism of rapidly enhanced aging is unclear and is a topic of continuing exploration.

### REFERENCES

1. Todd, S.C., et al. 1998. Sequences and expression of six new members of the tetraspanin/TM4SF family. *Biochim. Biophys. Acta* 1399: 101-104.
2. Chen, L., et al. 2008. Clinicopathological significance of overexpression of TSPAN1, Ki67 and CD34 in gastric carcinoma. *Tumori* 94: 531-538.
3. Scholz, C.J., et al. 2009. Tspan-1 is a tetraspanin preferentially expressed by mucinous and endometrioid subtypes of human ovarian carcinomas. *Cancer Lett.* 275: 198-203.
4. Scholz, C.J., et al. 2009. Glycosylation of tetraspanin Tspan-1 at four distinct sites promotes its transition through the endoplasmic reticulum. *Protein Pept. Lett.* 16: 1244-1248.
5. Chen, L., et al. 2009. TSPAN1 protein expression: a significant prognostic indicator for patients with colorectal adenocarcinoma. *World J. Gastroenterol.* 15: 2270-2276.

### CHROMOSOMAL LOCATION

Genetic locus: TSPAN2 (human) mapping to 1p13.2.

### PRODUCT

TSPAN2 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 TSPAN2 shRNA Plasmid (h): sc-88080-SH and TSPAN2 shRNA (h) Lentiviral Particles: sc-88080-V as alternate gene silencing products.

For independent verification of TSPAN2 (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-88080A, sc-88080B and sc-88080C.

### 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

TSPAN2 siRNA (h) is recommended for the inhibition of TSPAN2 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 TSPAN2 gene expression knockdown using RT-PCR Primer: TSPAN2 (h)-PR: sc-88080-PR (20  $\mu$ 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](http://www.scbt.com) for detailed protocols and support products.