SANTA CRUZ BIOTECHNOLOGY, INC.

TMCO3 siRNA (h): sc-76681

BACKGROUND

TMCO3 (transmembrane and coiled-coil domain-containing protein 3), also known as putative LAG1-interacting protein, is a 677 amino acid multi-pass membrane protein that probably functions as a Na^+/H^+ antiporter. TMCO3 belongs to the monovalent cation:protein antiporter 2 transporter family, a moderately large family of which members all share a very similar function under normal physiological conditions. The gene encoding TMCO3 maps to human chromosome 13, which comprises nearly 4% of human DNA and contains around 114 million base pairs and 400 genes. Key tumor suppressor genes on chromosome 13 include the breast cancer susceptibility gene, BRCA2, and the RB1 (retinoblastoma) gene. RB1 encodes a crucial tumor suppressor protein which, when defective, leads to malignant growth in the retina and has been implicated in a variety of other cancers. There are three isoforms of TMCO3 that are produced as a result of alternative splicing events.

REFERENCES

1. Ramírez, J., et al. 1998. A *Saccharomyces cerevisiae* mutant lacking a K^+/H^+ exchanger. J. Bacteriol. 180: 5860-5865.
2. Baud, O., et al. 1999. Dysmorphic phenotype and neurological impairment in 22 retinoblastoma patients with constitutional cytogenetic 13q deletion. Clin. Genet. 55: 478-482.
3. Gilbert, F. 2000. Chromosome 13. Genet. Test. 4: 85-94.
4. Inaba, M., et al. 2001. Functional expression in *Escherichia coli* of low-affinity and high-affinity $Na^+(Li^+)/H^+$ antiporters of *Synechocystis*. J. Bacteriol. 183: 1376-1384.
5. Kivelä, T., et al. 2003. Retinoblastoma associated with chromosomal 13q14 deletion mosaicism. Ophthalmology 110: 1983-1988.
6. Fujisawa, M., et al. 2007. Three two-component transporters with channel-like properties have monovalent cation/proton antiport activity. Proc. Natl. Acad. Sci. USA 104: 13289-13294.

CHROMOSOMAL LOCATION

Genetic locus: TMCO3 (human) mapping to 13q34.

PRODUCT

TMCO3 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 TMCO3 shRNA Plasmid (h): sc-76681-SH and TMCO3 shRNA (h) Lentiviral Particles: sc-76681-V as alternate gene silencing products.

For independent verification of TMCO3 (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-76681A, sc-76681B and sc-76681C.

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

TMCO3 siRNA (h) is recommended for the inhibition of TMCO3 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 TMCO3 gene expression knockdown using RT-PCR Primer: TMCO3 (h)-PR: sc-76681-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.