SANTA CRUZ BIOTECHNOLOGY, INC.

IFT88 siRNA (h): sc-75329

BACKGROUND

The tetratricopeptide repeat (TPR) motif is a degenerate, 34 amino acid sequence found in many proteins and acts to mediate protein-protein interactions in various pathways. IFT88 (intraflagellar transport protein 88), also known as TG737 or TTC10 (TPR repeat protein 10), is an 833 amino acid protein that contains 12 TPR repeats and belongs to the TPR family. Expressed in lung, heart, liver, brain, pancreas, kidney and skeletal muscle, IFT88 is thought to interact with other intraflagellar transport proteins and may play a role in the assembly and maintenance of the vertebrate outer segment. Additionally, IFT88 is thought to function as a centrosomal protein that may regulate the G_1 to S phase cell cycle transition in non-ciliated cells. Defects in the gene encoding IFT88 may be associated with the pathogenesis of polycystic kidney disease, a genetic disorder that is characterized by the presence of cysts within the kidneys. IFT88 expression is downregulated in hepatocellular carcinomas, suggesting a role for IFT88 in tumor suppression. Multiple isoforms of IFT88 exist due to alternative splicing events.

REFERENCES

1. Moyer, J.H., et al. 1994. Candidate gene associated with a mutation causing recessive polycystic kidney disease in mice. Science 264: 1329-1333.
2. Onuchic, L.F., et al. 1995. Sequence analysis of the human hTG737 gene and its polymorphic sites in patients with autosomal recessive polycystic kidney disease. Mamm. Genome 6: 805-808.
3. Isfort, R.J., et al. 1997. The tetratricopeptide repeat containing TG737 gene is a liver neoplasia tumor suppressor gene. Oncogene 15: 1797-1803.
4. Bonura, C., et al. 1999. Structure and expression of TG737, a putative tumor suppressor gene, in human hepatocellular carcinomas. Hepatology 30: 677-681.
5. Murcia, N.S., et al. 1999. New insights into the molecular pathophysiology of polycystic kidney disease. Kidney Int. 55: 1187-1197.
6. Taulman, P.D., et al. 2001. Polaris, a protein involved in left-right axis patterning, localizes to basal bodies and cilia. Mol. Biol. Cell 12: 589-599.
7. Lehner, B., et al. 2004. Analysis of a high-throughput yeast two-hybrid system and its use to predict the function of intracellular proteins encoded within the human MHC class III region. Genomics 83: 153-167.

CHROMOSOMAL LOCATION

Genetic locus: IFT88 (human) mapping to 13q12.11.

PRODUCT

IFT88 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 IFT88 shRNA Plasmid (h): sc-75329-SH and IFT88 shRNA (h) Lentiviral Particles: sc-75329-V as alternate gene silencing products.

For independent verification of IFT88 (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-75329A, sc-75329B and sc-75329C.

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

IFT88 siRNA (h) is recommended for the inhibition of IFT88 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 IFT88 gene expression knockdown using RT-PCR Primer: IFT88 (h)-PR: sc-75329-PR (20 µl, 411 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Seo, Y.M., et al. 2017. Copine-7 binds to the cell surface receptor, nucleolin, and regulates ciliogenesis and Dspp expression during odontoblast differentiation. Sci. Rep. 7: 11283.

RESEARCH USE

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

PROTOCOLS

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