SANTA CRUZ BIOTECHNOLOGY, INC.

IFT20 siRNA (m): sc-146174

BACKGROUND

IFT20 (intraflagellar transport 20) is a 132 amino acid protein that localizes to a variety of locations within the cell, including the golgi apparatus, the cilium basal body and the centrosome. Expressed ubiquitously, IFT20 interacts with KIF3B and functions as a component of the intraflagellar transport (IFT), which is comprised of several IFT proteins that work in tandem to mediate ciliary process assembly. Additionally, IFT20 is thought to play a role in the trafficking of ciliary membrane proteins from the golgi to the cilium. Defects in the gene encoding IFT20 are associated with misorientation of the mitotic spindle and cystic kidney disease, which can ultimately lead to renal failure. IFT20 is expressed as three alternatively spliced isoforms and is encoded by a gene that maps to human chromosome 17, which comprises nearly 2.5% of the human genome and houses over 1,200 genes.

REFERENCES

1. Baker, S.A., et al. 2003. IFT20 links kinesin II with a mammalian intraflagellar transport complex that is conserved in motile flagella and sensory cilia. J. Biol. Chem. 278: 34211-34218.
2. Yin, G., et al. 2003. Cloning and characterization of the human IFT20 gene. Mol. Biol. Rep. 30: 255-260.
3. Jurczyk, A., et al. 2004. Pericentrin forms a complex with intraflagellar transport proteins and polycystin-2 and is required for primary cilia assembly. J. Cell Biol. 166: 637-643.
4. Follit, J.A., et al. 2006. The intraflagellar transport protein IFT20 is associated with the Golgi complex and is required for cilia assembly. Mol. Biol. Cell 17: 3781-3792.
5. Jonassen, J.A., et al. 2008. Deletion of IFT20 in the mouse kidney causes misorientation of the mitotic spindle and cystic kidney disease. J. Cell Biol. 183: 377-384.
6. Krock, B.L. and Perkins, B.D. 2008. The intraflagellar transport protein IFT57 is required for cilia maintenance and regulates IFT-particle-kinesin-II dissociation in vertebrate photoreceptors. J. Cell Sci. 121: 1907-1915.
7. Absalon, S., et al. 2008. Intraflagellar transport and functional analysis of genes required for flagellum formation in trypanosomes. Mol. Biol. Cell 19: 929-944.

CHROMOSOMAL LOCATION

Genetic locus: Ift20 (mouse) mapping to 11 B5.

PRODUCT

IFT20 siRNA (m) is a pool of 2 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 IFT20 shRNA Plasmid (m): sc-146174-SH and IFT20 shRNA (m) Lentiviral Particles: sc-146174-V as alternate gene silencing products.

For independent verification of IFT20 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-146174A and sc-146174B.

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

IFT20 siRNA (m) is recommended for the inhibition of IFT20 expression in mouse 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 IFT20 gene expression knockdown using RT-PCR Primer: IFT20 (m)-PR: sc-146174-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.

PROTOCOLS

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