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IFT140 siRNA (m): sc-146172

BACKGROUND

WD-repeats are motifs that are found in a variety of proteins and are characterized by a conserved core of 40-60 amino acids that commonly form a tertiary propeller structure. While proteins that contain WD-repeats participate in a wide range of cellular functions, they are generally involved in regulatory mechanisms concerning chromatin assembly, cell cycle control, signal transduction, RNA processing, apoptosis and vesicular trafficking. IFT140 (intraflagellar transport 140), also known as WDTC2 or gs114, is a 1,462 amino acid protein that contains nine TPR (tetratricopeptide repeat) repeats and five WD repeats, suggesting a role in regulatory events throughout the cell. The gene encoding IFT140 maps to human chromosome 16, which encodes over 900 genes and comprises nearly 3% of the human genome.

REFERENCES

1. van der Voorn, L., et al. 1992. The WD-40 repeat. *FEBS Lett.* 307: 131-134.
2. Neer, E.J., et al. 1994. The ancient regulatory-protein family of WD-repeat proteins. *Nature* 371: 297-300.
3. Smith, T.F., et al. 1999. The WD repeat: a common architecture for diverse functions. *Trends Biochem. Sci.* 24: 181-185.
4. Tsujikawa, M., et al. 2004. Intraflagellar transport genes are essential for differentiation and survival of vertebrate sensory neurons. *Neuron* 42: 703-716.
5. Insinna, C., et al. 2008. Intraflagellar transport and the sensory outer segment of vertebrate photoreceptors. *Dev. Dyn.* 237: 1982-1992.
6. Luby-Phelps, K., et al. 2008. Spatial distribution of intraflagellar transport proteins in vertebrate photoreceptors. *Vision Res.* 48: 413-423.

CHROMOSOMAL LOCATION

Genetic locus: Ift140 (mouse) mapping to 17 A3.3.

PRODUCT

IFT140 siRNA (m) 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see IFT140 shRNA Plasmid (m): sc-146172-SH and IFT140 shRNA (m) Lentiviral Particles: sc-146172-V as alternate gene silencing products.

For independent verification of IFT140 (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-146172A, sc-146172B and sc-146172C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

IFT140 siRNA (m) is recommended for the inhibition of IFT140 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 μ M in 66 μ 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 IFT140 gene expression knockdown using RT-PCR Primer: IFT140 (m)-PR: sc-146172-PR (20 μ 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 for detailed protocols and support products.