SANTA CRUZ BIOTECHNOLOGY, INC.

WDR7 siRNA (h): sc-76913

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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, which 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 involving signal transduction, apoptosis, transcriptional regulation, cell cycle control. WD repeats serve as sites for protein-protein interaction and some seem to mediate the assembly of protein complexes. With 9 WD repeats, WDR7 (WD repeat-containing protein 7), also known as TGFβ resistance-associated protein (TRAG) and Rabconnectin-3 β, is a 1,490 amino acid protein that is abundantly expressed in brain and colocalizes with rabconnectin-3 on synaptic vesicles. Unlike rabconnectin-3, WDR7 binds directly to Rab3 GDP/GTP exchange protein and may therefore play a role in cell proliferation and survival. There are two isoforms of WDR7 that are produced as a result of alternative splicing events.

REFERENCES

1. Neer, E.J., et al. 1994. The ancient regulatory-protein family of WD-repeat proteins. Nature 371: 297-300.
2. Garcia-Higuera, I., et al. 1996. Folding of proteins with WD-repeats: comparison of six members of the WD-repeat superfamily to the G protein β subunit. Biochemistry 35: 13985-13994.
3. Smith, T.F., et al. 1999. The WD repeat: a common architecture for diverse functions. Trends Biochem. Sci. 24: 181-185.
4. Sanders, S., et al. 2000. Assignment of WDR7 (alias TRAG, TGF-β resistance associated gene) to orthologous regions of human chromosome 18q21.1→q22 and mouse chromosome 18D.1-E.3 by fluorescence *in situ* hybridization. Cytogenet. Cell Genet. 88: 324-325.
5. Yu, L., et al. 2000. Thirty-plus functional families from a single motif. Protein Sci. 9: 2470-2476.
6. Li, D. and Roberts, R. 2001. WD-repeat proteins: structure characteristics, biological function, and their involvement in human diseases. Cell. Mol. Life Sci. 58: 2085-2097.
7. Kawabe, H., et al. 2003. A novel rabconnectin-3-binding protein that directly binds a GDP/GTP exchange protein for Rab3A small G protein implicated in Ca^{2+}-dependent exocytosis of neurotransmitter. Genes Cells 8: 537-546.
8. van Nocker, S. and Ludwig, P. 2003. The WD-repeat protein superfamily in *Arabidopsis:* conservation and divergence in structure and function. BMC Genomics 4: 50.
9. Hudson, A.M. and Cooley, L. 2008. Phylogenetic, structural and functional relationships between WD- and Kelch-repeat proteins. Subcell. Biochem. 48: 6-19.

CHROMOSOMAL LOCATION

Genetic locus: WDR7 (human) mapping to 18q21.31.

RESEARCH USE

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

PRODUCT

WDR7 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 WDR7 shRNA Plasmid (h): sc-76913-SH and WDR7 shRNA (h) Lentiviral Particles: sc-76913-V as alternate gene silencing products.

For independent verification of WDR7 (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-76913A, sc-76913B and sc-76913C.

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

WDR7 siRNA (h) is recommended for the inhibition of WDR7 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 WDR7 gene expression knockdown using RT-PCR Primer: WDR7 (h)-PR: sc-76913-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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