SANTA CRUZ BIOTECHNOLOGY, INC.

WDFY2 siRNA (h): sc-76912

BACKGROUND

WD repeat and FYVE domain-containing protein 2 (WDFY2), also known as WDF2 and ZFYVE22, is a 400 amino acid protein that localizes to a set of small endosomes that are found within 100 nm from the plasma membrane. Highly conserved between species, WDFY2 consists of one FYVE-type zinc finger and seven WD repeats. The FYVE domain is a cysteine-rich domain of about 70 amino acids. Its primary role is to target signal-transducing proteins to cell membranes through binding to the membrane lipid phosphatidylinositol-3-phosphate with high specificity. WD-repeats are generally found in clusters of seven. They have no intrinsic catalytic activity, but they serve as a platform for protein-protein interactions. WDFY2 is suspected to play a critical role in the endocytic pathway.

REFERENCES

1. Gaullier, J.M., Simonsen, A., D'Arrigo, A., Bremnes, B., Stenmark, H. and Aasland, R. 1998. FYVE fingers bind PtdIns(3)P. Nature 394: 432-433.
2. Patki, V., Lawe, D.C., Corvera, S., Virbasius, J.V. and Chawla, A. 1998. A functional PtdIns(3)P-binding motif. Nature 394: 433-434.
3. Gillooly, D.J., Simonsen, A. and Stenmark, H. 2001. Cellular functions of phosphatidylinositol 3-phosphate and FYVE domain proteins. Biochem. J. 355: 249-258.
4. Hayakawa, A., Hayes, S.J., Lawe, D.C., Sudharshan, E., Tuft, R., Fogarty, K., Lambright, D. and Corvera, S. 2004. Structural basis for endosomal targeting by FYVE domains. J. Biol. Chem. 279: 5958-5966.
5. Fritzius, T., Burkard, G., Haas, E., Heinrich, J., Schweneker, M., Bosse, M., Zimmermann, S., Frey, A.D., Caelers, A., Bachmann, A.S. and Moelling, K. 2006. A WD-FYVE protein binds to the kinases Akt and PKCζ/λ. Biochem. J. 399: 9-20.
6. Hayakawa, A., Leonard, D., Murphy, S., Hayes, S., Soto, M., Fogarty, K., Standley, C., Bellve, K., Lambright, D., Mello, C. and Corvera, S. 2006. The WD40 and FYVE domain containing protein 2 defines a class of early endosomes necessary for endocytosis. Proc. Natl. Acad. Sci. USA 103: 11928-11933.
7. Hayakawa, A., Hayes, S., Leonard, D., Lambright, D. and Corvera, S. 2007. Evolutionarily conserved structural and functional roles of the FYVE domain. Biochem. Soc. Symp. 74: 95-105.
8. Fritzius, T., Frey, A.D., Schweneker, M., Mayer, D. and Moelling, K. 2007. WD-repeat-propeller-FYVE protein, ProF, binds VAMP2 and protein kinase Cζ. FEBS J. 274: 1552-1566.

CHROMOSOMAL LOCATION

Genetic locus: WDFY2 (human) mapping to 13q14.3.

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.

PRODUCT

WDFY2 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 WDFY2 shRNA Plasmid (h): sc-76912-SH and WDFY2 shRNA (h) Lentiviral Particles: sc-76912-V as alternate gene silencing products.

For independent verification of WDFY2 (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-76912A, sc-76912B and sc-76912C.

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

WDFY2 siRNA (h) is recommended for the inhibition of WDFY2 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 WDFY2 gene expression knockdown using RT-PCR Primer: WDFY2 (h)-PR: sc-76912-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.