SANTA CRUZ BIOTECHNOLOGY, INC.

ARV1 siRNA (h): sc-78605

BACKGROUND

ARV1 (ARV1 homolog), also known as hARV1, is a 271 amino acid multi-pass membrane protein that belongs to the ARV1 family. ARV1 contains an N-terminal ARV1 homology domain (AHD), which encompasses a zinc-binding motif and a transmembrane domain, and five central and C-terminal transmembrane domains. Encoded by a gene that maps to human chromosome 1q42.2, ARV1 is conserved in chimpanzee, canine, bovine, mouse, rat, chicken, zebrafish and *Caenorhabditis elegans*, and shares 44% amino acid identity with its yeast homolog. ARV1 plays a role in sphingolipid metabolism, with overexpression likely suppressing lipid metabolic defects. ARV1 may assist with ceramide transport between endoplasmic reticulum and Golgi apparatus, and may also function as a sterol homeostasis mediator.

REFERENCES

1. Sturley, S.L. 2000. Conservation of eukaryotic sterol homeostasis: new insights from studies in budding yeast. Biochim. Biophys. Acta 1529: 155-163.
2. Tinkelenberg, A.H., et al. 2000. Mutations in yeast ARV1 alter intracellular sterol distribution and are complemented by human ARV1. J. Biol. Chem. 275: 40667-40670.
3. Wilcox, L.J., et al. 2002. Transcriptional profiling identifies two members of the ATP-binding cassette transporter superfamily required for sterol uptake in yeast. J. Biol. Chem. 277: 32466-32472.
4. Swain, E., et al. 2002. Yeast cells lacking the ARV1 gene harbor defects in sphingolipid metabolism. Complementation by human ARV1. J. Biol. Chem. 277: 36152-36160.
5. Reiner, S., et al. 2005. *Saccharomyces cerevisiae*, a model to study sterol uptake and transport in eukaryotes. Biochem. Soc. Trans. 33: 1186-1188.
6. Miller, J.P., et al. 2005. Large-scale identification of yeast integral membrane protein interactions. Proc. Natl. Acad. Sci. USA 102: 12123-12128.
7. Kajiwara, K., et al. 2008. Yeast ARV1 is required for efficient delivery of an early GPI intermediate to the first mannosyltransferase during GPI assembly and controls lipid flow from the endoplasmic reticulum. Mol. Biol. Cell 19: 2069-2082.

CHROMOSOMAL LOCATION

Genetic locus: ARV1 (human) mapping to 1q42.2.

PRODUCT

ARV1 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 ARV1 shRNA Plasmid (h): sc-78605-SH and ARV1 shRNA (h) Lentiviral Particles: sc-78605-V as alternate gene silencing products.

For independent verification of ARV1 (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-78605A, sc-78605B and sc-78605C.

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

ARV1 siRNA (h) is recommended for the inhibition of ARV1 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.

GENE EXPRESSION MONITORING

ARV1 (4G12): sc-517099 is recommended as a control antibody for monitoring of ARV1 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ARV1 gene expression knockdown using RT-PCR Primer: ARV1 (h)-PR: sc-78605-PR (20 µl, 505 bp). 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.