SANTA CRUZ BIOTECHNOLOGY, INC.

ARL7 siRNA (h): sc-94425

BACKGROUND

ADP-ribosylation factors (ARFs) are highly conserved guanine nucleotide binding proteins that enhance the ADP-ribosyltransferase activity of cholera toxin. ARFs are important in eukaryotic vesicular trafficking pathways and play an essential role in the activation of phospholipase D (PC-PLD). ARL7 (ADP ribosylation factor-like protein 7), also known as LAK or ARL4C, is a 192 amino acid nuclear protein belonging to the small GTPase superfamily and the Arf family of proteins. ARL7 is the only ARF- and ARL-family member whose mRNA-expression is induced by liver X-receptor-retinoid X-receptor agonists or cholesterol loading in human macrophages. ARL7 may play a role in the AI (apoA-I)-dependent cholesterol secretion process and may modulate intracellular vesicular transport via interaction with microtubules.

REFERENCES

1. Jacobs, S., et al. 1999. ADP-ribosylation factor (ARF)-like 4, 6, and 7 represent a subgroup of the ARF family characterization by rapid nucleotide exchange and a nuclear localization signal. FEBS Lett. 456: 384-388.
2. Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 604787. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Pasqualato, S., et al. 2002. Arf, Arl, Arp and Sar proteins: a family of GTP-binding proteins with a structural device for "front-back" communication. EMBO Rep. 3: 1035-1041.
4. Helip-Wooley, A. and Thoene, J.G. 2004. Sucrose-induced vacuolation results in increased expression of cholesterol biosynthesis and lysosomal genes. Exp. Cell Res. 292: 89-100.
5. Engel, T., et al. 2004. ADP-ribosylation factor (ARF)-like 7 (ARL7) is induced by cholesterol loading and participates in apolipoprotein AI-dependent cholesterol export. FEBS Lett. 566: 241-246.
6. Kahn, R.A., et al. 2006. Nomenclature for the human ARF family of GTP-binding proteins: ARF, ARL, and SAR proteins. J. Cell Biol. 172: 645-650.
7. Hofmann, I. and Munro, S. 2006. An N-terminally acetylated ARF-like GTPase is localised to lysosomes and affects their motility. J. Cell Sci. 119: 1494-1503.

CHROMOSOMAL LOCATION

Genetic locus: ARL4C (human) mapping to 2q37.1.

PRODUCT

ARL7 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 ARL7 shRNA Plasmid (h): sc-94425-SH and ARL7 shRNA (h) Lentiviral Particles: sc-94425-V as alternate gene silencing products.

For independent verification of ARL7 (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-94425A, sc-94425B and sc-94425C.

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

ARL7 siRNA (h) is recommended for the inhibition of ARL7 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 ARL7 gene expression knockdown using RT-PCR Primer: ARL7 (h)-PR: sc-94425-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.