SANTA CRUZ BIOTECHNOLOGY, INC.

ARL1 siRNA (h): sc-106957

BACKGROUND

ADP-ribosylation factors (ARFs) are highly conserved guanine nucleotide-binding proteins that enhance the ADP-ribosyltransferase activity of cholera toxin. ARF's may also participate in vesicular transport in both exocytic and endocytic pathways. ARL1 is a member of the ARF-like protein (ARL) subfamily of small GTPases. On subcellular fractionation, ARL1, similar to ARF1, localizes to the soluble fraction. ARL1 associates with the *trans* side of the Golgi apparatus, where it aids in the regulation of membrane traffic as well as the structure and function of the Golgi apparatus. In addition, the yeast ARL1 gene plays an important role in the formation of central vacuoles and in the progression of programmed cell death induced by cell-cycle arrest or Bax.

REFERENCES

1. Lowe, S.L., Wong, S.H. and Hong, W. 1996. The mammalian ARF-like protein 1 (ARL1) is associated with the Golgi complex. J. Cell Sci. 109: 209-220.
2. Lee, F.J., Huang, C.F., Yu, W.L., Buu, L.M., Lin, C.Y., Huang, M.C., Moss, J. and Vaughan, M. 1997. Characterization of an ADP-ribosylation factor-like 1 protein in *Saccharomyces cerevisiae*. J. Biol. Chem. 272: 30998-31005.
3. Lu, L., Horstmann, H., Ng, C. and Hong, W. 2001. Regulation of Golgi structure and function by ARF-like protein 1 (ARL1). J. Cell Sci. 114: 4543-4555.
4. Rosenwald, A.G., Rhodes, M.A., Van Valkenburgh, H., Palanivel, V., Chapman, G., Boman, A., Zhang, C.J. and Kahn, R.A. 2002. ARL1 and membrane traffic in *Saccharomyces cerevisiae*. Yeast 19: 1039-1056.
5. Abudugupur, A., Mitsui, K., Yokota, S. and Tsurugi, K. 2002. An ARL1 mutation affected autophagic cell death in yeast, causing a defect in central vacuole formation. Cell Death Differ. 9: 158-168.

CHROMOSOMAL LOCATION

Genetic locus: ARL1 (human) mapping to 12q23.2.

PRODUCT

ARL1 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 ARL1 shRNA Plasmid (h): sc-106957-SH and ARL1 shRNA (h) Lentiviral Particles: sc-106957-V as alternate gene silencing products.

For independent verification of ARL1 (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-106957A, sc-106957B and sc-106957C.

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

ARL1 siRNA (h) is recommended for the inhibition of ARL1 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

ARL1 (B-2): sc-393785 is recommended as a control antibody for monitoring of ARL1 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 ARL1 gene expression knockdown using RT-PCR Primer: ARL1 (h)-PR: sc-106957-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Kim, H.J., Kim, B., Byun, H.J., Yu, L., Nguyen, T.M., Nguyen, T.H., Do, P.A., Kim, E.J., Cheong, K.A., Kim, K.S., Huy Phùng, H., Rahman, M., Jang, J.Y., Rho, S.B., Kang, G.J., Park, M.K., Lee, H., Lee, K., Cho, J., Han, H.K., et al. 2021. Resolvin D1 suppresses H_2O_2-induced senescence in fibroblasts by inducing autophagy through the miR-1299/ARG2/ARL1 axis. Antioxidants 10: 1924.

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.