

# arfaptin 1 siRNA (m): sc-41191

## BACKGROUND

ADP-ribosylation factors, or ARFs, enhance the ADP ribosyltransferase activity of cholera toxin and are implicated in vesicle transport between endoplasmic reticulum and the Golgi complex. Arfaptin 1 is recruited from the cytosol to Golgi membranes by ARFs in a guanosine 5-prime-O-(3-thiotriphosphate)-dependent and brefeldin A-sensitive manner but is not a constituent of coatamer. Arfaptin 1 binds to nonmyristoylated GTP-bound ARF3, but not to GDP-bound ARF3, and also to ARF1, another class I ARF. It binds with lower affinity to ARF5, a class II ARF, and with very little affinity to ARF6, a class III ARF. POR1 (also designated Arfaptin 2) was first isolated as a Rac 1 binding protein necessary for Rac mediated actin polymerization and the subsequent formation of membrane ruffles and lamellipodia. POR1 has also been shown to interact with the ADP ribosylation factor ARF6, a GTPase that associates with the plasma membrane and intracellular endosome vesicles, in a GTP dependent manner. The association of POR1 with ARF6 stimulates induction of actin polymerization. POR1 appears to play a regulatory role through multiple signaling pathways in the reorganization of the cytoskeletal structure.

## REFERENCES

1. Joneson, T., et al. 1996. Rac regulation of actin polymerization and proliferation by a pathway distinct from Jun kinase. *Science* 274: 1374-1376.
2. Van Aelst, L., et al. 1996. Identification of a novel Rac 1-interacting protein involved in membrane ruffling. *EMBO J.* 15: 3778-3786.
3. Kanoh, H., et al. 1997. Arfaptin 1, a putative cytosolic target protein of ADP-ribosylation factor, is recruited to Golgi membranes. *J. Biol. Chem.* 272: 5421-5429.
4. D'Souza-Schorey, C., et al. 1997. A role for POR1, a Rac 1-interacting protein, in ARF6-mediated cytoskeletal rearrangements. *EMBO J.* 16: 5445-5454.
5. D'Souza-Schorey, C., et al. 1998. ARF6 targets recycling vesicles to the plasma membrane: insights from an ultrastructural investigation. *J. Cell Biol.* 140: 603-616.
6. Gauthier-Rouviere, C., et al. 1998. RhoG GTPase controls a pathway that independently activates Rac1 and Cdc42Hs. *Mol. Biol. Cell* 9: 1379-1394.
7. Radhakrishna, H., et al. 1999. ARF6 requirement for Rac ruffling suggests a role for membrane trafficking in cortical actin rearrangements. *J. Cell Sci.* 112: 855-866.
8. LocusLink Report (LocusID: 605928). <http://www.ncbi.nlm.nih.gov/LocusLink/>

## CHROMOSOMAL LOCATION

Genetic locus: Arfp1 (mouse) mapping to 3 F1.

## PRODUCT

arfaptin 1 siRNA (m) is a target-specific 19-25 nt siRNA designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see arfaptin 1 shRNA Plasmid (m): sc-41191-SH and arfaptin 1 shRNA (m) Lentiviral Particles: sc-41191-V as alternate gene silencing products.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

arfaptin 1 siRNA (m) is recommended for the inhibition of arfaptin 1 expression in mouse 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  $\mu$ M in 66  $\mu$ l. 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 arfaptin 1 gene expression knockdown using RT-PCR Primer: arfaptin 1 (m)-PR: sc-41191-PR (20  $\mu$ l). 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](http://www.scbt.com) for detailed protocols and support products.