

p41-ARCa siRNA (h): sc-89614

BACKGROUND

p41-ARCa, also known as ARPC1A (Actin-related protein 2/3 complex subunit 1A) or SOP2L, is a 370 amino acid cytoplasmic protein that contains six WD repeats and belongs to the WD repeat ARPC1 family. As a possible component of the Arp2/3 complex, p41-ARCa is involved in the regulation of actin polymerization. Working together with an activating nucleation-promoting factor (NPF), p41-ARCa mediates the formation of branched Actin networks. The gene that encodes p41-ARCa consists of nearly 69,000 bases and maps to human chromosome 7q22.1. Chromosome 7 houses over 1,000 genes, comprises nearly 5% of the human genome and has been linked to osteogenesis imperfecta, Pendred syndrome, lissencephaly, citrullinemia and Shwachman-Diamond syndrome. The Lys-172 polymorphism in T2R16 is associated with genetic susceptibility to alcoholism.

REFERENCES

1. Tsiouras, P., et al. 1983. Restriction fragment length polymorphism associated with the pro α 2(I) gene of human type I procollagen. Application to a family with an autosomal dominant form of osteogenesis imperfecta. *J. Clin. Invest.* 72: 1262-1267.
2. Balasubramanian, M.K., et al. 1996. Fission yeast Sop2p: a novel and evolutionarily conserved protein that interacts with Arp3p and modulates profilin function. *EMBO J.* 15: 6426-6437.
3. Welch, M.D., et al. 1997. The human Arp2/3 complex is composed of evolutionarily conserved subunits and is localized to cellular regions of dynamic actin filament assembly. *J. Cell Biol.* 138: 375-384.
4. Online Mendelian Inheritance in Man, OMIM[™]. 1999. Johns Hopkins University, Baltimore, MD. MIM Number: 604220. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Iwasaki, S., et al. 2001. Long-term audiological feature in Pendred syndrome caused by PDS mutation. *Arch. Otolaryngol. Head Neck Surg.* 127: 705-708.
6. Zuo, X., et al. 2006. Exo70 interacts with the Arp2/3 complex and regulates cell migration. *Nat. Cell Biol.* 8: 1383-1388.
7. Reiner, O., et al. 2006. Lissencephaly 1 linking to multiple diseases: mental retardation, neurodegeneration, schizophrenia, male sterility, and more. *Neuromolecular Med.* 8: 547-565.
8. Gilbert-Dussardier, B. 2006. Williams-Beuren syndrome. *Rev. Prat.* 56: 2102-2106.
9. Laurila, E., et al. 2009. Characterization of the 7q21-q22 amplicon identifies ARPC1A, a subunit of the Arp2/3 complex, as a regulator of cell migration and invasion in pancreatic cancer. *Genes Chromosomes Cancer.* 48: 330-339.

CHROMOSOMAL LOCATION

Genetic locus: ARPC1A (human) mapping to 7q22.1.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

PRODUCT

p41-ARCa 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see p41-ARCa shRNA Plasmid (h): sc-89614-SH and p41-ARCa shRNA (h) Lentiviral Particles: sc-89614-V as alternate gene silencing products.

For independent verification of p41-ARCa (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-89614A, sc-89614B and sc-89614C.

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

APPLICATIONS

p41-ARCa siRNA (h) is recommended for the inhibition of p41-ARCa 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 μ M in 66 μ 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 p41-ARCa gene expression knockdown using RT-PCR Primer: p41-ARCa (h)-PR: sc-89614-PR (20 μ 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.