

p16-ARC siRNA (r): sc-270591

BACKGROUND

The Arp2/3 (actin-related protein 2/3) complex consists of seven subunits, all of which are actin-related proteins. The complex is involved in the control of actin polymerization and in mediating the formation of branched actin networks. p16-ARC, also known as ARPC5 (actin-related protein 2/3 complex subunit 5) or ARC16 (Arp2/3 complex 16 kDa subunit), is a 151 amino acid subunit of the Arp2/3 complex. Thought to play a role in maintaining the integrity of Arp2/3, p16-ARC is a substrate for MAPKAPK-2 which, through phosphorylation of p16-ARC, may participate in Arp2/3 regulatory functions and remodeling of the actin cytoskeleton. Two isoforms of p16-ARC exist due to alternative splicing events.

REFERENCES

1. 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.
2. Machesky, L.M., et al. 1997. Mammalian actin-related protein 2/3 complex localizes to regions of lamellipodial protrusion and is composed of evolutionarily conserved proteins. *Biochem. J.* 328: 105-112.
3. Zhao, X., et al. 2001. Interactions among subunits of human Arp2/3 complex: p20-Arc as the hub. *Biochem. Biophys. Res. Commun.* 280: 513-517.
4. Gournier, H., et al. 2001. Reconstitution of human Arp2/3 complex reveals critical roles of individual subunits in complex structure and activity. *Mol. Cell* 8: 1041-1052.
5. Millard, T.H., et al. 2002. Identification and characterisation of a novel human isoform of Arp2/3 complex subunit p16-ARC/ARPC5. *Cell Motil. Cytoskeleton* 54: 81-90.
6. Terasaki, A.G., et al. 2002. Characterization of Arp2/3 complex in chicken tissues. *Cell Struct. Funct.* 27: 383-391.
7. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 604227. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
8. Singh, S., et al. 2003. Identification of the p16-Arc subunit of the Arp 2/3 complex as a substrate of MAPK-activated protein kinase 2 by proteomic analysis. *J. Biol. Chem.* 278: 36410-36417.
9. Beltzner, C.C. and Pollard, T.D. 2008. Pathway of actin filament branch formation by Arp2/3 complex. *J. Biol. Chem.* 283: 7135-7144.

CHROMOSOMAL LOCATION

Genetic locus: Arpc5 (rat) mapping to 13q21.

PRODUCT

p16-ARC siRNA (r) 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see p16-ARC shRNA Plasmid (r): sc-270591-SH and p16-ARC shRNA (r) Lentiviral Particles: sc-270591-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 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

p16-ARC siRNA (r) is recommended for the inhibition of p16-ARC expression in rat 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.

GENE EXPRESSION MONITORING

p16-ARC (C-3): sc-166760 is recommended as a control antibody for monitoring of p16-ARC 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 p16-ARC gene expression knockdown using RT-PCR Primer: p16-ARC (r)-PR: sc-270591-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.

PROTOCOLS

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