**BACKGROUND**

GTPase-activating proteins (GAPs) accelerate the intrinsic rate of GTP hydrolysis of Ras-related proteins, resulting in downregulation of their active form. ARHGAP12 (Rho GTPase activating protein 12) is a 846 amino acid protein that contains one N-terminal SH3 domain, two WW domains, one PH (pleckstrin homology) domain and one C-terminal Rho-GAP domain. The GAP domain of ARHGAP12 is most closely related to the GAP domain of ARHGAP9. ARHGAP12 functions as a GTPase activator for Rho-type GTPases by converting them to an inactive GDP-bound state. Conserved in chimpanzee, canine, bovine, mouse, rat, chicken and zebrafish, ARHGAP12 contains 20 exons, the first 2 of which are noncoding and the final contains 2 alternate polyadenylation signals. Encoded by a gene that maps to human chromosome 10p11.22, ARHGAP12 is expressed in lung, kidney, liver, brain and pancreas, and exists as three alternatively spliced isoforms.

**REFERENCES**


**CHROMOSOMAL LOCATION**


**PRODUCT**

ARHGAP12 shRNA Plasmid (m) is a pool of 3 target-specific lentiviral vector plasmids each encoding 19-25 nt (plus hairpin) shRNAs designed to knock down gene expression. Each plasmid contains a puromycin resistance gene for the selection of cells stably expressing shRNA. Each vial contains 20 µg of lyophilized shRNA plasmid DNA. Suitable for up to 20 transfections. Also see ARHGAP12 siRNA (m): sc-141202 and ARHGAP12 shRNA (m) Lentiviral Particles: sc-141202-V as alternate gene silencing products.

**STORAGE AND RESUSPENSION**

Store lyophilized shRNA plasmid DNA at 4°C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at 4°C for short term storage or -80°C for long term storage. Avoid repeated freeze thaw cycles.

Resuspend lyophilized shRNA plasmid DNA in 200 µl of the deionized water provided. Resuspension of the shRNA plasmid DNA in 200 µl of deionized water makes a 0.1 µg/µl solution in 10 mM Tris, 1 mM EDTA buffered solution.

**APPLICATIONS**

ARHGAP12 shRNA Plasmid (m) is recommended for the inhibition of ARHGAP12 expression in mouse cells.

**SUPPORT REAGENTS**

For optimal shRNA Plasmid transfection efficiency, Santa Cruz Biotechnology's shRNA Plasmid Transfection Reagent: sc-108061 (0.2 ml) and shRNA Plasmid Transfection Medium: sc-108062 (20 ml) are recommended. Control shRNAs are available as 20 µg lyophilized plasmid DNA. Each encodes a scrambled shRNA sequence that will not lead to the specific degradation of any known cellular mRNA. Control shRNA Plasmids include: sc-108060, sc-108065 and sc-108066.

**RT-PCR REAGENTS**

Semi-quantitative RT-PCR may be performed to monitor ARHGAP12 gene expression knockdown using RT-PCR Primer: ARHGAP12 (m)-PR: sc-141202-PR (20 µl). Annealing temperature for the primers should be 55-60°C and the extension temperature should be 68-72°C.

**PROTOCOLS**

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