

# A1Up siRNA (h): sc-78764

## BACKGROUND

A1Up (Ataxin-1 ubiquitin-like-interacting protein), also known as UBQLN4 (ubiquilin 4), C1orf6 or UBIN, is a 601 amino acid protein that localizes to both the cytoplasm and the nucleus and is thought to associate with the endoplasmic reticulum (ER). Expressed at high levels in kidney, pancreas, heart, brain and skeletal muscle and at lower levels in liver, lung and placenta, A1Up functions as a homodimer that binds to signal sequences on proteins that are targeted to the ER. Additionally, A1Up is thought to link Ataxin-1 with ubiquitin/proteasome pathways, possibly assisting in the Ataxin-1-associated formation of multimeric protein complexes within the nucleus. A1Up contains one ubiquitin-like domain and one UBA domain and may be phosphorylated in response to DNA damage.

## REFERENCES

1. Fogli, A., et al. 1999. Identification of two paralogous regions mapping to the short and long arms of human chromosome 2 comprising LIS1 pseudogenes. *Cytogenet. Cell Genet.* 86: 225-232.
2. Davidson, J.D., et al. 2000. Identification and characterization of an Ataxin-1-interacting protein: A1Up, a ubiquitin-like nuclear protein. *Hum. Mol. Genet.* 9: 2305-2312.
3. Matsuda, M., et al. 2001. Molecular cloning of a novel ubiquitin-like protein, UBIN, that binds to ER targeting signal sequences. *Biochem. Biophys. Res. Commun.* 280: 535-540.
4. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 605440. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Riley, B.E., et al. 2004. The effects of the poly-glutamine repeat protein Ataxin-1 on the UbL-UBA protein A1Up. *J. Biol. Chem.* 279: 42290-42301.
6. Matsuoka, S., et al. 2007. ATM and ATR substrate analysis reveals extensive protein networks responsive to DNA damage. *Science* 316: 1160-1166.

## CHROMOSOMAL LOCATION

Genetic locus: UBQLN4 (human) mapping to 1q22.

## PRODUCT

A1Up 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see A1Up shRNA Plasmid (h): sc-78764-SH and A1Up shRNA (h) Lentiviral Particles: sc-78764-V as alternate gene silencing products.

For independent verification of A1Up (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-78764A, sc-78764B and sc-78764C.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support 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

A1Up siRNA (h) is recommended for the inhibition of A1Up 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  $\mu$ 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.

## GENE EXPRESSION MONITORING

A1Up (A333): sc-136145 is recommended as a control antibody for monitoring of A1Up 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 $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor A1Up gene expression knockdown using RT-PCR Primer: A1Up (h)-PR: sc-78764-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.