

# ARS2 siRNA (m): sc-141277

## BACKGROUND

ARS2 (arsenate (or arsenite-) resistance protein 2), also known as ASR2, is an 876 amino acid protein that belongs to the ARS2 family. Expressed ubiquitously in mammals and localized to the nucleus, ARS2 is evolutionarily conserved (at least 98% sequence identity among mammals) and appears to be essential for early mammalian development with a likely role in vital cellular processes. Mouse embryos lacking ARS2 exhibit excessive apoptosis and die around the time of implantation. In humans, ARS2 is known to interact with RNPS1, a protein involved in the activation of pre-mRNA splicing. In addition, the gene encoding ARS2 is located on chromosome 7 within the region that is commonly deleted in myeloid leukemia. This suggests a possible role of ARS2 in the development of myeloid leukemia. Due to alternative splicing events, ARS2 exists in four isoforms, namely isoform A, isoform B, isoform 3 and isoform 4.

## REFERENCES

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- Beausoleil, S.A., et al. 2004. Large-scale characterization of HeLa cell nuclear phosphoproteins. *Proc. Natl. Acad. Sci. USA* 101: 12130-12135.
- Ordóñez, E., et al. 2005. Analysis of genes involved in arsenic resistance in *Corynebacterium glutamicum* ATCC 13032. *Appl. Environ. Microbiol.* 71: 6206-6215.
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- Mateos, L.M., et al. 2006. *Corynebacterium glutamicum* as a model bacterium for the bioremediation of arsenic. *Int. Microbiol.* 9: 207-215.
- Szafranski, K., et al. 2007. Violating the splicing rules: TG dinucleotides function as alternative 3' splice sites in U2-dependent introns. *Genome Biol.* 8: R154.

## CHROMOSOMAL LOCATION

Genetic locus: *Srrt* (mouse) mapping to 5 G2.

## PRODUCT

ARS2 siRNA (m) 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 ARS2 shRNA Plasmid (m): sc-141277-SH and ARS2 shRNA (m) Lentiviral Particles: sc-141277-V as alternate gene silencing products.

For independent verification of ARS2 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-141277A, sc-141277B and sc-141277C.

## 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

ARS2 siRNA (m) is recommended for the inhibition of ARS2 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.

## GENE EXPRESSION MONITORING

ARS2 (B-11): sc-376716 is recommended as a control antibody for monitoring of ARS2 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™ Molecular Weight Standards: sc-2035, UltraCruz® 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® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ARS2 gene expression knockdown using RT-PCR Primer: ARS2 (m)-PR: sc-141277-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.