SANTA CRUZ BIOTECHNOLOGY, INC.

ARSA siRNA (m): sc-141278

BACKGROUND

ARSA is the human homolog of the bacterial arsA, a member of the ATPase superfamily. ARSA and ARSB have been postulated to form a membrane complex which functions as an anion-translocating ATPase with ARSA providing the catalytic energy transducing component of the pump. ARSA hydrolyses ATP in the presence of its anionic substrate antimonite and produces resistance to arsenite and antimonite. The active form of ARSA is a homodimer with four nucleotide binding sites, two from each monomer.

REFERENCES

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2. Rosen, B.P., et al. 1990. Molecular analysis of an ATP-dependent anion pump. Philos. Trans. R. Soc. Lond., B, Biol. Sci. 326: 455-463.
3. Tisa, L.S., et al. 1990. Molecular characterization of an anion pump. The ARSB protein is the membrane anchor for the ARSA protein. J. Biol. Chem. 265: 190-194.
4. Li, J., et al. 1996. Interaction of ATP binding sites in the ARSA ATPase, the catalytic subunit of the Ars pump. J. Biol. Chem. 271: 25247-25252.
5. Rosen, B.P., et al. 1999. Mechanism of the ARSA ATPase. Biochim. Biophys. Acta 1461: 207-215.
6. Walmsley, A.R., et al. 1999. The ATPase mechanism of ARSA, the catalytic subunit of the arsenite pump. J. Biol. Chem. 274: 16153-16161.
7. Walmsley, A.R., et al. 2001. Antimonite regulation of the ATPase activity of ARSA, the catalytic subunit of the arsenical pump. Biochem. J. 360: 589-597.
8. Zhou, T., et al. 2001. Conformational changes in four regions of the *Escherichia coli* ARSA ATPase link ATP hydrolysis to ion translocation. J. Biol. Chem. 276: 30414-30422.
9. Zhou, T., et al. 2002. Unisite and multisite catalysis in the ARSA ATPase. J. Biol. Chem. 277: 23815-23820.

CHROMOSOMAL LOCATION

Genetic locus: Asna1 (mouse) mapping to 8 C3.

PRODUCT

ARSA siRNA (m) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ARSA shRNA Plasmid (m): sc-141278-SH and ARSA shRNA (m) Lentiviral Particles: sc-141278-V as alternate gene silencing products.

PROTOCOLS

See our web site at 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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

ARSA siRNA (m) is recommended for the inhibition of ARSA 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 µM in 66 µl. 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

ARSA (H-7): sc-390568 is recommended as a control antibody for monitoring of ARSA 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 ARSA gene expression knockdown using RT-PCR Primer: ARSA (m)-PR: sc-141278-PR (20 µl). 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.