SANTA CRUZ BIOTECHNOLOGY, INC.

ASL siRNA (m): sc-61999

BACKGROUND

ASL (argininosuccinate lyase), also known as ASAL or arginosuccinase, is a member of the lyase 1 family of proteins and is predominantly expressed in the liver. Localizing to the cytoplasm and existing as a homotetramer, ASL catalyzes the hydrolytic cleavage of argininosuccinic acid (ASA) to fumarate and arginine, an essential step of the urea cycle which is crucial for the detoxification of ammonia. This reaction is also involved in the biosynthesis of arginine. In addition, ASL shares high sequence homology with the avian and reptilian eye lens protein, δ-crystallin. Mutations in the gene encoding ASL leads to an accumulation of ASA in body fluids and results in Arginosuccinic aciduria (ASAuria), an autosomal recessive disorder that is characterized by hyperammonemia, liver enlargement, convulsions, physical and mental retardation, episodic unconsciousness and dry and brittle hair showing trich-orrhexis nodosa (weak points or nodes in the hair shaft).

REFERENCES

1. Turner, M.A., et al. 1997. Human argininosuccinate lyase: a structural basis for intragenic complementation. Proc. Natl. Acad. Sci. USA 94: 9063-9068.
2. Yu, B., et al. 2000. Intragenic complementation and the structure and function of argininosuccinate lyase. Cell. Mol. Life Sci. 57: 1637-1651.
3. Sampaleanu, L.M., et al. 2001. Three-dimensional structure of the argininosuccinate lyase frequently complementing allele Q286R. Biochemistry 40: 15570-15580.
4. Yu, B., et al. 2001. Mechanisms for intragenic complementation at the human argininosuccinate lyase locus. Biochemistry 40: 15581-15590.
5. Linnebank, M., et al. 2002. Argininosuccinate lyase (ASL) deficiency: mutation analysis in 27 patients and a completed structure of the human ASL gene. Hum. Genet. 111: 350-359.
6. Tanaka, T., et al. 2002. A novel stop codon mutation (X465Y) in the argininosuccinate lyase gene in a patient with argininosuccinic aciduria. Tohoku J. Exp. Med. 198: 119-124.

CHROMOSOMAL LOCATION

Genetic locus: Asl (mouse) mapping to 5 G1.3.

PRODUCT

ASL 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ASL shRNA Plasmid (m): sc-61999-SH and ASL shRNA (m) Lentiviral Particles: sc-61999-V as alternate gene silencing products.

For independent verification of ASL (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-61999A, sc-61999B and sc-61999C.

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

ASL siRNA (m) is recommended for the inhibition of ASL 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

ASL (B-1): sc-166787 is recommended as a control antibody for monitoring of ASL 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 ASL gene expression knockdown using RT-PCR Primer: ASL (m)-PR: sc-61999-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.