SANTA CRUZ BIOTECHNOLOGY, INC.

Arylsulfatase K siRNA (m): sc-141286

BACKGROUND

Sulfatases hydrolyze sulfate esters from sulfated steroids, carbohydrates, proteoglycans and glycolipids, and are involved in hormone biosynthesis, cell signal modulation and macromolecule degradation. Arylsulfatase K, also known as ARSK (arylsulfatase family, member K), ASK or TSULF (telethon sulfatase), is a 536 amino acid protein belonging to the sulfatase family. Encoded by a gene that maps to human chromosome 5q15, Arylsulfatase K is conserved in chimpanzee, canine, bovine, mouse, rat, chicken, zebrafish, *Kluyveromyces lactis, Magnaporthe grisea and Neurospora crassa*. Arylsulfatase K, like all human sulfatases, contains nine regions of strong evolutionary conservation, most of which encompass residues involved in sulfatase hydrolysis reactions. Arylsulfatase K participates in arylsulfatase activity, hydrolase activity and metal ion binding, and likely associates with cellular organelles or membrane structures.

REFERENCES

1. Sardiello, M., Annunziata, I., Roma, G. and Ballabio, A. 2005. Sulfatases and sulfatase modifying factors: an exclusive and promiscuous relationship. Hum. Mol. Genet. 14: 3203-3217.
2. Obaya, A.J. 2006. Molecular cloning and initial characterization of three novel human sulfatases. Gene 372 : 110-117.
3. Bojarová, P. and Williams, S.J. 2008. Sulfotransferases, sulfatases and formylglycine-generating enzymes: a sulfation fascination. Curr. Opin. Chem. Biol. 12: 573-581.
4. Mitsunaga-Nakatsubo, K., Kusunoki, S., Kawakami, H., Akasaka, K. and Akimoto, Y. 2009. Cell-surface Arylsulfatase A and B on sinusoidal endothelial cells, hepatocytes, and Kupffer cells in mammalian livers. Med. Mol. Morphol. 42: 63-69.
5. Oshikawa, M., Usami, R. and Kato, S. 2009. Characterization of the arylsulfatase I (ARSI) gene preferentially expressed in the human retinal pigment epithelium cell line ARPE-19. Mol. Vis. 15 : 482-494.
6. Burridge, K.A. and Friedman, M.H. 2010. Environment and vascular bed origin influence differences in endothelial transcriptional profiles of coronary and iliac arteries. Am. J. Physiol. Heart Circ. Physiol. 299: H837-H846.
7. Buono, M. and Cosma, M.P. 2010. Sulfatase activities towards the regulation of cell metabolism and signaling in mammals. Cell. Mol. Life Sci. 67: 769-780.
8. Ratzka, A., Mundlos, S. and Vortkamp, A. 2010. Expression patterns of sulfatase genes in the developing mouse embryo. Dev. Dyn. 239: 1779-1788.
9. Hill, M., Parízek, A., Cibula, D., Kancheva, R., Jirásek, J.E., Jirkovská, M., Velíková, M., Kubátová, J., Klímková, M., Pašková, A., Zižka, Z., Kancheva, L., Kazihnitková, H., Zamrazilová, L. and Stárka, L. 2010. Steroid metabolome in fetal and maternal body fluids in human late pregnancy. J. Steroid Biochem. Mol. Biol. 122: 114-132.

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: Arsk (mouse) mapping to 13 C1.

PRODUCT

Arylsulfatase K 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 Arylsulfatase K shRNA Plasmid (m): sc-141286-SH and Arylsulfatase K shRNA (m) Lentiviral Particles: sc-141286-V as alternate gene silencing 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

Arylsulfatase K siRNA (m) is recommended for the inhibition of Arylsulfatase K 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Arylsulfatase K gene expression knockdown using RT-PCR Primer: Arylsulfatase K (m)-PR: sc-141286-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.