SANTA CRUZ BIOTECHNOLOGY, INC.

Arylsulfatase H siRNA (h): sc-105094

BACKGROUND

Sulfatases hydrolyze sulfate esters from sulfated steroids, carbohydrates, proteoglycans and glycolipids. They are involved in hormone biosynthesis, modulation of cell signaling and degradation of macromolecules. Arylsulfatase H, also known as ARSH, is a 562 amino acid protein that belongs to the sulfatase family of bone and cartilage matrix proteins. Localized to the plasma membrane, Arylsulfatase H uses calcium as a cofactor to hydrolyze sulfate esters. The gene encoding Arylsulfatase D maps to human chromosome X, which contains nearly 153 million base pairs and houses over 1,000 genes. In conjunction with chromosome Y, chromosome X is responsible for sex determination. There are a number of conditions related to an abnormal number and combination of sex chromosomes, some of which include Turner's syndrome, color blindness, hemophilia and Duchenne muscular dystrophy.

REFERENCES

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2. Franco, B., et al. 1995. A cluster of sulfatase genes on Xp22.3: mutations in chondrodysplasia punctata (CDPX) and implications for warfarin embryopathy. Cell 81: 15-25.
3. Meroni, G., et al. 1996. Characterization of a cluster of sulfatase genes on Xp22.3 suggests gene duplications in an ancestral pseudoautosomal region. Hum. Mol. Genet. 5: 423-431.
4. Puca, A.A., et al. 1997. Identification by shotgun sequencing, genomic organization, and functional analysis of a fourth arylsulfatase gene (ARSF) from the Xp22.3 region. Genomics 42: 192-199.
5. Dooley, T.P., et al. 2000. Expression profiling of human sulfotransferase and sulfatase gene superfamilies in epithelial tissues and cultured cells. Biochem. Biophys. Res. Commun. 277: 236-245.
6. Urbitsch, P., et al. 2000. Arylsulfatase D gene in Xp22.3 encodes two protein isoforms. DNA Cell Biol. 19: 765-773.
7. Sardiello, M., et al. 2005. Sulfatases and sulfatase modifying factors: an exclusive and promiscuous relationship. Hum. Mol. Genet. 14: 3203-3217.

CHROMOSOMAL LOCATION

Genetic locus: ARSH (human) mapping to Xp22.33.

PRODUCT

Arylsulfatase H 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Arylsulfatase H shRNA Plasmid (h): sc-105094-SH and Arylsulfatase H shRNA (h) Lentiviral Particles: sc-105094-V as alternate gene silencing products.

For independent verification of Arylsulfatase H (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-105094A, sc-105094B and sc-105094C.

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 H siRNA (h) is recommended for the inhibition of Arylsulfatase H 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 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 H gene expression knockdown using RT-PCR Primer: Arylsulfatase H (h)-PR: sc-105094-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.

PROTOCOLS

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