SANTA CRUZ BIOTECHNOLOGY, INC.

SULT1A1 siRNA (h): sc-106578

BACKGROUND

The soluble sulfotransferases contribute to the elimination of xenobiotics, the activation of procarcinogens and the regulation of hormones by catalyzing the sulfate conjugation of these substances. Members of the three groups comprising this superfamily (namely SULT1, SULT2 and SULT3) show selectivity to certain substrate compounds. SULT1A1 (sulfotransferase family, cytosolic, 1A, phenol-preferring, member 1), also known as STP or STP1, is a 295 amino acid protein that localizes to the cytoplasm and belongs to the sulfotransferase family. Functioning as a homodimer that is expressed in brain, liver, skin and lung tissue, SULT1A1 catalyzes the sulfate conjugation of catecholamines, phenolic drugs and neurotransmitters and, via this catalytic activity, plays a role in the elimination of a variety of compounds from the body. Additionally, SULT1A1 may be involved in the activation of carcinogenic N-hydroxyarylamines, indicating a possible role in carcinogenesis.

REFERENCES

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2. Dooley, T.P., et al. 1996. Genomic organization and DNA sequences of two human phenol sulfotransferase genes (STP1 and STP2) on the short arm of chromosome 16. Biochem. Biophys. Res. Commun. 228: 134-140.
3. Glatt, H. 2000. Sulfotransferases in the bioactivation of xenobiotics. Chem. Biol. Interact. 129: 141-170.
4. Engelke, C.E., et al. 2000. Association between functional genetic polymorphisms of human sulfotransferases 1A1 and 1A2. Pharmacogenetics 10: 163-169.
5. Kotnis, A., et al. 2008. Case-control study and meta-analysis of SULT1A1 $Arg^{213}His$ polymorphism for gene, ethnicity and environment interaction for cancer risk. Br. J. Cancer 99: 1340-1347.
6. Hirata, H., et al. 2008. CYP1A1, SULT1A1, and SULT1E1 polymorphisms are risk factors for endometrial cancer susceptibility. Cancer 112: 1964-1973.
7. Suzuki, H., et al. 2008. Interaction of the cytochrome P4501A2, SULT1A1 and NAT gene polymorphisms with smoking and dietary mutagen intake in modification of the risk of pancreatic cancer. Carcinogenesis 29: 1184-1191.
8. Chung, Y.T., et al. 2009. Sulfotransferase 1A1 haplotypes associated with oral squamous cell carcinoma susceptibility in male Taiwanese. Carcinogenesis 30: 286-294.

CHROMOSOMAL LOCATION

Genetic locus: SULT1A1 (human) mapping to 16p11.2.

PRODUCT

SULT1A1 siRNA (h) 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 SULT1A1 shRNA Plasmid (h): sc-106578-SH and SULT1A1 shRNA (h) Lentiviral Particles: sc-106578-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

SULT1A1 siRNA (h) is recommended for the inhibition of SULT1A1 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.

GENE EXPRESSION MONITORING

SULT1A1 (214E2Z): sc-517645 is recommended as a control antibody for monitoring of SULT1A1 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 SULT1A1 gene expression knockdown using RT-PCR Primer: SULT1A1 (h)-PR: sc-106578-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.