

# STS siRNA (h): sc-45269

## BACKGROUND

Steroid sulfatase (STS) is an enzymatic homodimer associated with the endoplasmic reticulum membrane, stimulated by retinoids, and responsible for the conversion of sulfated steroid precursors into bioactive estrogens during pregnancy. Many studies have reported on the effects of reversible and irreversible STS activity inhibition from a wide array of molecules, though the little is known about the regulation of STS expression or activity. Mutations in the STS gene result in X-linked ichthyosis, a diskernization disorder characterized by the presence of prominent scales. High expression levels have been reported in human breast carcinoma and acute promyelocytic leukemia, as STS supports tumor growth. Therefore, STS is currently a potential drug target in the treatment of estrogen- and androgen-dependent diseases.

## REFERENCES

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3. Walter, G., et al. 2004. 2-phenylindole sulfamates: inhibitors of steroid sulfatase with antiproliferative activity in MCF7 breast cancer cells. *J. Steroid Biochem. Mol. Biol.* 88: 409-420.
4. Utsunomiya, H., et al. 2004. Steroid sulfatase and estrogen sulfotransferase in human endometrial carcinoma. *Clin. Cancer Res.* 10: 5850-5856.
5. Billich, A., et al. 2004. Confocal fluorescence detection expanded to UV excitation: the first continuous fluorimetric assay of human steroid sulfatase in nanoliter volume. *Assay Drug Dev. Technol.* 2: 21-30.
6. Reed, M.J., et al. 2005. Steroid sulfatase: molecular biology, regulation, and inhibition. *Endocr. Rev.* 26: 171-202.
7. Hughes, P.J., et al. 2006. Retinoid-mediated stimulation of steroid sulfatase activity in myeloid leukemic cell lines requires RAR $\alpha$  and RXR and involves the phosphoinositide 3-kinase and ERK-MAP kinase pathways. *J. Cell. Biochem.* 97: 327-350.

## CHROMOSOMAL LOCATION

Genetic locus: STS (human) mapping to Xp22.31.

## PRODUCT

STS 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see STS shRNA Plasmid (h): sc-45269-SH and STS shRNA (h) Lentiviral Particles: sc-45269-V as alternate gene silencing products.

For independent verification of STS (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-45269A, sc-45269B and sc-45269C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

STS siRNA (h) is recommended for the inhibition of STS 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  $\mu$ M in 66  $\mu$ l. 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

STS (A-6): sc-518238 is recommended as a control antibody for monitoring of STS 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-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>TM</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor STS gene expression knockdown using RT-PCR Primer: STS (h)-PR: sc-45269-PR (20  $\mu$ l). 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](http://www.scbt.com) for detailed protocols and support products.