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# SHBG siRNA (h): sc-44847

## BACKGROUND

Sex hormone-binding globulin (SHBG) precursor is a secreted homodimer that binds steroid hormones. SHBG, also known as testis-specific androgen-binding protein or testosterone-estradiol binding globulin (TeBG), functions as an androgen transport protein and is involved in receptor mediated processes. It is specific for 7- $\beta$ -estradiol and 5- $\alpha$ -dihydrotestosterone and testosterone. By controlling the plasma concentration of steroid hormones, SHBG regulates the plasma metabolic clearance rate of the hormones. Isoforms 1 and 2 of the protein are detected in liver and testis. In testis SHBG is synthesized by the Sertoli cells, secreted into the seminiferous tubule and then transported to the epididymis.

## REFERENCES

- Power, S.G., et al. 1992. Molecular analyses of a human sex hormone-binding globulin variant: evidence for an additional carbohydrate chain. *J. Clin. Endocrinol. Metab.* 75: 1066-1070.
- Hardy, D.O., et al. 1995. Molecular characterization of a genetic variant of the steroid hormone-binding globulin gene in heterozygous subjects. *J. Clin. Endocrinol. Metab.* 80: 1253-1256.
- Cargill, M., et al. 1999. Characterization of single-nucleotide polymorphisms in coding regions of human genes. *Nat. Genet.* 22: 231-238.
- Grishkovskaya, I., et al. 2000. Crystal structure of human sex hormone-binding globulin: steroid transport by a laminin G-like domain. *EMBO. J.* 19: 504-512.
- Fejes, I., et al. 2005. Is semen quality affected by male body fat distribution? *Andrologia* 37: 155-159.
- Joffe, H.V., et al. 2005. Sex hormone-binding globulin and serum testosterone are inversely associated with c-reactive protein levels in post-menopausal women at high risk for cardiovascular disease. *Ann. Epidemiol.* 16: 105-112.

## CHROMOSOMAL LOCATION

Genetic locus: SHBG (human) mapping to 17p13.1.

## PRODUCT

SHBG 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 SHBG shRNA Plasmid (h): sc-44847-SH and SHBG shRNA (h) Lentiviral Particles: sc-44847-V as alternate gene silencing products.

For independent verification of SHBG (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-44847A, sc-44847B and sc-44847C.

## PROTOCOLS

See our web site at [www.scbt.com](http://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  $\mu$ 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

SHBG siRNA (h) is recommended for the inhibition of SHBG 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

SHBG (C-2): sc-377032 is recommended as a control antibody for monitoring of SHBG 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>™</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 SHBG gene expression knockdown using RT-PCR Primer: SHBG (h)-PR: sc-44847-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.