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SANTA CRUZ BIOTECHNOLOGY, INC.

TBG siRNA (m): sc-45383

BACKGROUND

The serine proteinase inhibitors (serpins) compose a superfamily of proteins with a diverse set of functions, including the control of blood coagulation, complement activation, programmed cell death and development. Serpins are secreted glycoproteins that contain a stretch of peptide that mimics a true substrate for a corresponding serine protease. Serpin family members include Thyroxine-binding globulin precursor (TBG). TBG is a serum protein that transports Thyroxine, carrying approximately 75% of circulating T4. Inherited defects in TBG are associated with three phenotypes based on the level of TBG in serum of affected hemizygous males: complete TBG deficiency (TBG-CD), partial TBG deficiency (TBG-PD) and TBG excess (TBG-E). TBG is expressed by the liver and secreted in plasma.

REFERENCES

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2. Rivas, M.L., et al. 1971. Genetic variants of thyroxine-binding globulin (TBG). Birth Defects Orig. Artic. Ser. 7: 34-41.
3. Omenn, G.S. 1971. Studies of serum thyroxine-binding globulin (TBG). Birth Defects Orig. Artic. Ser. 7: 42.
4. Wahner, H.W., et al. 1971. Thyroid overactivity and TBG deficiency simulating "T3 hyperthyroidism". J. Clin. Endocrinol. Metab. 33: 93-97.
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6. Bhatkar, S.V., et al. 2004. Thyroid hormone binding protein abnormalities in patients referred for thyroid disorders. Indian J. Med. Res. 120: 160-165.
7. Lanting, C.I., et al. 2005. Clinical effectiveness and cost-effectiveness of the use of the thyroxine/thyroxine-binding globulin ratio to detect congenital hypothyroidism of thyroidal and central origin in a neonatal screening program. Pediatrics 116: 168-173.
8. van den Beld, A.W., et al. 2005. Thyroid hormone concentrations, disease, physical function and mortality in elderly men. J. Clin. Endocrinol. Metab. 90: 6403-6409.
9. McKinnon, B., et al. 2005. Synthesis of thyroid hormone binding proteins transthyretin and albumin by human trophoblast. J. Clin. Endocrinol. Metab. 90: 6714-6720.

CHROMOSOMAL LOCATION

Genetic locus: Serpina7 (mouse) mapping to X F1.

PROTOCOLS

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

PRODUCT

TBG siRNA (m) 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 TBG shRNA Plasmid (m): sc-45383-SH and TBG shRNA (m) Lentiviral Particles: sc-45383-V as alternate gene silencing products.

For independent verification of TBG (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-45383A, sc-45383B and sc-45383C.

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

TBG siRNA (m) is recommended for the inhibition of TBG 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 TBG gene expression knockdown using RT-PCR Primer: TBG (m)-PR: sc-45383-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.