SANTA CRUZ BIOTECHNOLOGY, INC.

TAFI siRNA (h): sc-63098

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The Power to Question

BACKGROUND

The Thrombin-activatable fibrinolysis inhibitor (TAFI), also designated procarboxypeptidase B2 or procarboxypeptidase U, is a hepatically secreted zymogen that downregulates fibrinolysis when activated by Thrombin. It is synthesized in the liver and circulates in plasma in its proenzyme form. When activated, TAFI removes C-terminal arginine or lysine residues from biologically active peptides such as kinins or anaphylatoxins. TAFI cleaves the lysine residues from Fibrin, which prevents plasminogen from activation into plasmin and retards the lysis of a Fibrin clot. Elevated concentration of TAFI in blood is considered a risk factor for venous thrombosis, whereas a deficiency might contribute to the severity of bleeding disorders in hemophilias A and B. Decreased levels of TAFI are found in chronic liver disease.

REFERENCES

1. Von dem Borne, P.A., et al. 1997. Thrombin-mediated activation of Factor XI results in a Thrombin-activatable fibrinolysis inhibitor-dependent inhibition of fibrinolysis. J. Clin. Invest. 99: 2323-2327.
2. Zhao, L., et al. 1999. Identification and characterization of two Thrombin-activatable fibrinolysis inhibitor isoforms. Thromb. Haemost. 80: 949-955.
3. Hall, S.W., et al. 1999. Thrombin interacts with thrombomodulin, Protein C and Thrombin-activatable fibrinolysis inhibitor via specific and distinct domains. J. Biol. Chem. 274: 25510-25516.
4. Juhan-Vague, I., et al. 2000. Thrombin-activatable fibrinolysis inhibitor antigen levels and cardiovascular risk factors. Arterioscler. Thromb. Vasc. Biol. 20: 2156-2161.
5. Bajzar, L. 2000. Thrombin-activatable fibrinolysis inhibitor and an antifibrinolytic pathway. Arterioscler. Thromb. Vasc. Biol. 20: 2511-2518.
6. van Tilburg, N.H., et al. 2000. Thrombin-activatable fibrinolysis inhibitor and the risk for deep vein thrombosis. Blood 95: 2855-2859.
7. Silveira, A., et al. 2001. Plasma procarboxypeptidase U in men with symptomatic coronary artery disease. Thromb. Haemost. 84: 364-368.
8. Schroeder, V., et al. 2003. Thrombin-activatable fibrinolysis inhibitor (TAFI) levels in patients with coronary artery disease investigated by angiography. Thromb. Haemost. 88: 1020-1025.

CHROMOSOMAL LOCATION

Genetic locus: CPB2 (human) mapping to 13q14.13.

PRODUCT

TAFI 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 TAFI shRNA Plasmid (h): sc-63098-SH and TAFI shRNA (h) Lentiviral Particles: sc-63098-V as alternate gene silencing products.

For independent verification of TAFI (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-63098A, sc-63098B and sc-63098C.

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

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

TAFI (13H4): sc-59708 is recommended as a control antibody for monitoring of TAFI 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TAFI gene expression knockdown using RT-PCR Primer: TAFI (h)-PR: sc-63098-PR (20 µl, 563 bp). 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.