SANTA CRUZ BIOTECHNOLOGY, INC.

ZPI siRNA (h): sc-63257

BACKGROUND

ZPI, also known as SERPINA10 (serpin peptidase inhibitor, clade A (α-1 antiproteinase, antitrypsin), member 10) or PZI, is a 444 amino acid secreted protein that functions as a Protein Z-dependent protease inhibitor. Expressed by the liver, ZPI is secreted into the plasma where, in the presence of calcium, Protein Z and phospholipids, it inhibits the activated pro-coagulation factors X and XI (Factor X and Factor XI). This inhibition helps properly regulate intravenous blood clotting. ZPI, a member of the serpin protein family, contains five potential N-linked glycosylation sites and a tyrosine at position 387 which, when disrupted, renders ZPI inactive. Defects in the gene encoding ZPI may increase susceptibility to venous thrombosis, the formation of blood clots within a vein.

REFERENCES

1. Marin, S. 1967. Bronchial perforation in tuberculosis of the lymph nodes. Med. Glas. 21: 62-66.
2. Han, X., et al. 2000. Characterization of the protein Z-dependent protease inhibitor. Blood 96: 3049-3055.
3. Broze, G.J. 2001. Protein Z-dependent regulation of coagulation. Thromb. Haemost. 86: 8-13.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 605271. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Heeb, M.J., et al. 2005. Down-regulation of factor IXa in the factor Xase complex by protein Z-dependent protease inhibitor. J. Biol. Chem. 280: 33819-33825.
6. Al-Shanqeeti, A., et al. 2005. Protein Z and protein Z-dependent protease inhibitor. Determinants of levels and risk of venous thrombosis. Thromb. Haemost. 93: 411-413.
7. Corral, J., et al. 2006. A nonsense polymorphism in the protein Z-dependent protease inhibitor increases the risk for venous thrombosis. Blood 108: 177-183.

CHROMOSOMAL LOCATION

Genetic locus: SERPINA10 (human) mapping to 14q32.13.

PRODUCT

ZPI 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 ZPI shRNA Plasmid (h): sc-63257-SH and ZPI shRNA (h) Lentiviral Particles: sc-63257-V as alternate gene silencing products.

For independent verification of ZPI (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-63257A, sc-63257B and sc-63257C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

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

ZPI (F-12): sc-393486 is recommended as a control antibody for monitoring of ZPI 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 ZPI gene expression knockdown using RT-PCR Primer: ZPI (h)-PR: sc-63257-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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