

Protein Z siRNA (h): sc-106450

BACKGROUND

The human Protein Z gene maps to chromosome 13q34 and encodes a vitamin K-dependent plasma protein with a plasma half-life of approximately 2.5 days. Protein Z, protein C and coagulation factors VII, IX and X share a similar structure. Protein Z limits the normal coagulation response by serving as a cofactor for the inhibition of factor Xa by Protein Z-dependent protease inhibitor (PZI). At phospholipid surfaces, Protein Z forms a calcium ion-dependent complex with factor Xa. In the presence of Protein Z, Ca²⁺ and procoagulant phospholipids, PZI generates rapid inhibition of factor Xa by forming a tertiary complex with factor Xa and protein Z. Protein Z deficiency and Protein Z autoantibodies correlate to early fetal loss in women.

REFERENCES

1. Broze, G.J., Jr. and Miletich, J.P. 1984. Human Protein Z. *J. Clin. Invest.* 73: 933-938.
2. Fujimaki, K., Yamazaki, T., Taniwaki, M. and Ichinose, A. 1998. The gene for human Protein Z is localized to chromosome 13 at band q34 and is coded by eight regular exons and one alternative exon. *Biochemistry* 37: 6838-6846.
3. Han, X., Fiehler, R. and Broze, G.J., Jr. 1998. Isolation of a Protein Z-dependent plasma protease inhibitor. *Proc. Natl. Acad. Sci. USA* 95: 9250-9255.
4. Yin, Z.F., Huang, Z.F., Cui, J., Fiehler, R., Lasky, N., Ginsburg, D. and Broze, G.J., Jr. 2000. Prothrombotic phenotype of Protein Z deficiency. *Proc. Natl. Acad. Sci. USA* 97: 6734-6738.
5. Gris, J.C., Amadio, C., Mercier, E., Lavigne-Lissalde, G., Dechaud, H., Hoffet, M., Quere, I., Amiral, J., Dauzat, M. and Mares, P. 2003. Anti-Protein Z antibodies in women with pathological pregnancies. *Blood* 101: 4850-4852.

CHROMOSOMAL LOCATION

Genetic locus: PROZ (human) mapping to 13q34.

PRODUCT

Protein Z 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Protein Z shRNA Plasmid (h): sc-106450-SH and Protein Z shRNA (h) Lentiviral Particles: sc-106450-V as alternate gene silencing products.

For independent verification of Protein Z (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-106450A, sc-106450B and sc-106450C.

PROTOCOLS

See our web site at 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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Protein Z siRNA (h) is recommended for the inhibition of Protein Z 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 μ M in 66 μ 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Protein Z gene expression knockdown using RT-PCR Primer: Protein Z (h)-PR: sc-106450-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Butschkau, A., Wagner, N.M., Genz, B. and Vollmar, B. 2014. Protein Z exerts pro-angiogenic effects and upregulates CXCR4. *PLoS ONE* 9: e113554.

RESEARCH USE

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