SANTA CRUZ BIOTECHNOLOGY, INC.

Factor XI siRNA (h): sc-60625

BACKGROUND

Coagulation Factor XI (FXI) is a glycoprotein produced by platelets and megakaryocytes in the liver and circulates as a zymogen homodimer in plasma. Factor XI is a trypsin-like plasma serine protease that catalyzes the activation of the consolidation phase of blood coagulation through a Thrombin-generated feedback loop. The plasma half-life of Factor XI is about 52 hours, and plasma concentrations are usually 5 mg/l. During hemostasis, the coagulation protease factor (Factor XIa) activates Factor XI. Factor XI deficiency (hemophilia C) is an injury-related bleeding disorder that leads to a variable bleeding tendency which is inherited in an autosomal recessive manner, though is not completely recessive, because heterozygotes also have a mild but definite bleeding tendency.

REFERENCES

1. Podmore, A., et al. 2004. Real-time quantitative PCR analysis of Factor XI mRNA variants in human platelets. J. Thromb. Haemost. 2: 1713-1719.
2. Zivelin, A., et al. 2004. Severe Factor XI deficiency caused by a Gly555 to Glu mutation (Factor XI-Glu555): a cross-reactive material positive variant defective in Factor IX activation. J. Thromb. Haemost. 2: 1782-1789.
3. Dai, L., et al. 2004. The profibrinolytic effect of plasma thrombomodulin in Factor XI deficiency and its implications in hemostasis. J. Thromb. Haemost. 2: 2200-2204.
4. Salomon, O., et al. 2005. Plasma replacement therapy during labor is not mandatory for women with severe Factor XI deficiency. Blood Coagul. Fibrinolysis 16: 37-41.
5. Dossenbach-Glaninger, A. and Hopmeier, P. 2005. Coagulation Factor XI: a database of mutations and polymorphisms associated with Factor XI deficiency. Blood Coagul. Fibrinolysis 16: 231-238.
6. Ghosh, K., et al. 2005. Co-existence of Bernard Soulier syndrome and Factor XI deficiency in a family: a unified pathology? Platelets 16: 85-89.
7. O'Connell, N.M., et al. 2005. Structural interpretation of 42 mutations causing Factor XI deficiency using homology modeling. J. Thromb. Haemost. 3: 127-138.

CHROMOSOMAL LOCATION

Genetic locus: F11 (human) mapping to 4q35.2.

PRODUCT

Factor XI 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 Factor XI shRNA Plasmid (h): sc-60625-SH and Factor XI shRNA (h) Lentiviral Particles: sc-60625-V as alternate gene silencing products.

For independent verification of Factor XI (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-60625A, sc-60625B and sc-60625C.

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

Factor XI siRNA (h) is recommended for the inhibition of Factor XI 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

Factor XI (G-2): sc-365996 is recommended as a control antibody for monitoring of Factor XI 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 Factor XI gene expression knockdown using RT-PCR Primer: Factor XI (h)-PR: sc-60625-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.

PROTOCOLS

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