SANTA CRUZ BIOTECHNOLOGY, INC.

Factor XII siRNA (m): sc-62291

BACKGROUND

Hemostasis following tissue injury involves the deployment of essential plasma procoagulants which are involved in a blood coagulation cascade leading to the formation of insoluble fibrin clots and the promotion of platelet aggregation. Factor XII, (FXII) a blood coagulation factor, is a serum glycoprotein that participates in fibrinolysis, as well as the generation of bradykinin and angiotensin. An enzyme of the serine protease (or serine endopeptidase) class, it activates both Factor XI and prekallikrein in the coagulation cascade. Factor XII deficiency, a rare hereditary disorder slightly more prevalent among Asians, does not cause excessive hemorrhaging since other coagulation factors compensate for it. Researchers have still reported Factor XII deficiency to be a risk factor for the development of arterial and venous thromboembolism. The gene for human Factor XII maps to the very end of the long arm of the fifth chromosome (5q35.3).

REFERENCES

1. Zabel, B.A., et al. 2005. Chemerin activation by serine proteases of the coagulation, fibrinolytic, and inflammatory cascades. J. Biol. Chem. 280: 34661-34666.
2. D'Uva, M., et al. 2005. Acquired factor XII deficiency in a woman with recurrent pregnancy loss: working on a differential diagnosis in a single case. J. Transl. Med. 3: 43.
3. Pavlov, V., et al. 2006. Probing single-stranded DNA and its biomolecular interactions through direct catalytic activation of factor XII, a protease of the blood coagulation cascade. Biochem. Biophys. Res. Commun. 349: 1011-1015.
4. Doggen, C.J., et al. 2006. Levels of intrinsic coagulation factors and the risk of myocardial infarction among men: Opposite and synergistic effects of factors XI and XII. Blood 108: 4045-4051.
5. Osborn, N.K., et al. 2006. Factor XII deficiency acquired by orthotopic liver transplantation: case report and review of the literature. Am. J. Transplant. 6: 1743-1745.
6. Kleinschnitz, C., et al. 2006. Targeting coagulation factor XII provides protection from pathological thrombosis in cerebral ischemia without interfering with hemostasis. J. Exp. Med. 203: 513-518.

CHROMOSOMAL LOCATION

Genetic locus: F12 (mouse) mapping to 13 B1.

PRODUCT

Factor XII 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 Factor XII shRNA Plasmid (m): sc-62291-SH and Factor XII shRNA (m) Lentiviral Particles: sc-62291-V as alternate gene silencing products.

For independent verification of Factor XII (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-62291A, sc-62291B and sc-62291C.

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 XII siRNA (m) is recommended for the inhibition of Factor XII 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.

GENE EXPRESSION MONITORING

Factor XII heavy chain (B7C9): sc-59518 is recommended as a control antibody for monitoring of Factor XII 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 XII gene expression knockdown using RT-PCR Primer: Factor XII (m)-PR: sc-62291-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.