SANTA CRUZ BIOTECHNOLOGY, INC.

plasma kallikrein siRNA (m): sc-40412

BACKGROUND

Plasma prekallikrein is a glycoprotein that is synthesized in the liver and is secreted into the blood as a single polypeptide chain that participates in the surface-dependent activation of blood coagulation, fibrinolysis, kinin generation and inflammation. The human plasma prekallikrein gene maps to chromosome 4q35.2 and encodes a serine proteinase known as Fletcher factor. Plasma prekallikrein converts to plasma kallikrein by factor XIIa through the cleavage of an internal Arg-Ile bond. Plasma kallikrein releases bradykinin when activated by Gram-negative septicemia or irreversible hemorrhagic shock. Plasma prekallikrein activation induces the cleavage of high molecular weight kininogen (HK) and subsequent liberation of bradykinin. Cleaved HK is antiangiogenic, and bradykinin stimulates tPA liberation and nitric oxide formation. Activated plasma kallikrein promotes single-chain urokinase activation and subsequent plasminogen activation. Kininigens and their breakdown products are antithrombin agents.

REFERENCES

1. Mills, I.H. 1979. Kallikrein, kininogen and kinins in control of blood pressure. Nephron 23: 61-71.
2. Colman, R.W., Sartor, R.B., Adam, A.A., DeLa Cadena, R.A. and Stadnicki, A. 1998. The plasma kallikrein-kinin system in sepsis, inflammatory arthritis, and enterocolitis. Clin. Rev. Allergy Immunol. 16: 365-384.
3. Schmaier, A.H. 2000. Plasma kallikrein/kinin system: a revised hypothesis for its activation and its physiologic contributions. Curr. Opin. Hematol. 7: 261-265.
4. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 229000. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. LocusLink Report (LocusID: 3818). http://www.ncbi.nlm.nih.gov/LocusLink/

CHROMOSOMAL LOCATION

Genetic locus: Klkb1 (mouse) mapping to 8 B1.1.

PRODUCT

plasma kallikrein 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 plasma kallikrein shRNA Plasmid (m): sc-40412-SH and plasma kallikrein shRNA (m) Lentiviral Particles: sc-40412-V as alternate gene silencing products.

For independent verification of plasma kallikrein (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-40412A, sc-40412B and sc-40412C.

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 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

plasma kallikrein siRNA (m) is recommended for the inhibition of plasma kallikrein 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor plasma kallikrein gene expression knockdown using RT-PCR Primer: plasma kallikrein (m)-PR: sc-40412-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.