SANTA CRUZ BIOTECHNOLOGY, INC.

Kininogen siRNA (h): sc-40723

BACKGROUND

Kininogen is a 644 amino acid precursor protein that is expressed by the KNG1 gene and is secreted into blood plasma. Due to alternative splicing events, several Kininogen protein derivatives exist, including Kininogen LC (light chain) and Kininogen HC (heavy chain), both of which are produced from the Kininogen precursor and exhibit different functions throughout the cell. Kininogen HC plays an important role in blood coagulation by helping to ensure that prekallikrein and Factor XI (both of which are involved in blood coagulation) are properly situated for interaction with Factor XII. Additionally, Kininogen HC releases a smaller, active protein known as bradykinin, which plays a role in smooth muscle contraction, induction of hypotension, regulation of blood glucose levels, stimulation of nociceptors and overall mediation of inflammatory responses throughout the cell. In contrast to Kininogen HC, which is involved in blood clotting, Kininogen LC is primarily associated with inhibition of thrombocyte aggregation and also functions as a strong inhibitor of cysteine proteinases.

REFERENCES

1. Mills, I.H. 1979. Kallikrein, Kininogen and kinins in control of blood pressure. Nephron 23: 61-71.
2. Kato, H., et al. 1979. Role of bovine high-molecular-weight (HMW) kininogen in contact-mediated activation of bovine Factor XII. Adv. Exp. Med. Biol. 120B: 19-37.
3. Kaplan, A.P. 1979. The role of high molecular weight kininogen in contact activation of coagulation, fibrinolysis and kinin generation. Adv. Exp. Med. Biol. 120B: 71-91.
4. Kitamura, N., et al. 1985. Structural organization of the human kininogen gene and a model for its evolution. J. Biol. Chem. 260: 8610-8617.
5. Cheung, P.P., et al. 1992. Chromosomal mapping of human kininogen gene (KNG) to 3q26→qter. Cytogenet. Cell Genet. 59: 24-26.
6. Greenbaum, L.M. 1992. The T-kininogen, T-kinin system of the rat. Agents Actions Suppl. 36: 215-222.
7. el-Dahr, S.S. and Dipp, S. 1993. Molecular aspects of kallikrein and kininogen in the maturing kidney. Pediatr. Nephrol. 7: 646-651.

CHROMOSOMAL LOCATION

Genetic locus: KNG1 (human) mapping to 3q27.3.

PRODUCT

Kininogen 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 Kininogen shRNA Plasmid (h): sc-40723-SH and Kininogen shRNA (h) Lentiviral Particles: sc-40723-V as alternate gene silencing products.

For independent verification of Kininogen (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-40723A, sc-40723B and sc-40723C.

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

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

Kininogen HC (2B5): sc-23914 is recommended as a control antibody for monitoring of Kininogen 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 Kininogen gene expression knockdown using RT-PCR Primer: Kininogen (h)-PR: sc-40723-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.