

KLK2 siRNA (h): sc-41531

BACKGROUND

Kallikreins (KLKs) belong to the serine protease family of proteolytic enzymes. Human pancreatic/renal KLK encodes for the KLK1 enzyme, which is involved in post-translational processing of polypeptide precursors. The function of the other members of KLK gene family is currently unknown, but evidence suggests that many KLKs are implicated in carcinogenesis. The human KLK gene family consists of 15 serine proteases. The human KLK genes are clustered on chromosome 19q13. Unlike other kallikreins, the KLK4-15 encoded proteases are less related and do not contain a conventional KLK loop. Clusters of genes exhibit high prostatic (KLK2-4, KLK15) or pancreatic (KLK6-13) expression. KLK2 is also known as glandular kallikrein 2, tissue kallikrein, or HGK-1 and KLK3 is known as prostate-specific antigen (PSA). Both KLK2 and KLK3 have important applications in prostate cancer and breast cancer diagnostics. KLK4, KLK5, KLK9, KLK13, KLK12 and KLK14 have been previously known as KLK-L1, KLK-L2, KLK-L3, KLK-L4, KLK-L5 and KLK-L6, respectively. Many of the KLKs are regulated by steroid hormones and a few of them, specifically KLK3, KLK6 and KLK10, are known to be down regulated in breast and other cancers.

REFERENCES

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2. Diamandis, E.P., Yousef, G.M., Luo, L.Y., Magklara, A. and Obiezu, C.V. 2000. The new human kallikrein gene family: implications in carcinogenesis. *Trends Endocrinol. Metab.* 11: 54-60.
3. Yousef, G.M., Magklara, A., Chang, A., Jung, K., Katsaros, D. and Diamandis, E.P. 2001. Cloning of a new member of the human kallikrein gene family, KLK14, which is down regulated in different malignancies. *Cancer Res.* 61: 3425-3431.
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6. Shimizu-Okabe, C., Yousef, G.M., Diamandis, E.P., Yoshida, S., Shiosaka, S. and Fahnstock, M. 2001. Expression of the kallikrein gene family in normal and Alzheimer's disease brain. *Neuroreport* 12: 2747-2751.

CHROMOSOMAL LOCATION

Genetic locus: KLK2 (human) mapping to 19q13.33.

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.

PRODUCT

KLK2 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 KLK2 shRNA Plasmid (h): sc-41531-SH and KLK2 shRNA (h) Lentiviral Particles: sc-41531-V as alternate gene silencing products.

For independent verification of KLK2 (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-41531A, sc-41531B and sc-41531C.

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

KLK2 siRNA (h) is recommended for the inhibition of KLK2 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 KLK2 gene expression knockdown using RT-PCR Primer: KLK2 (h)-PR: sc-41531-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.