SANTA CRUZ BIOTECHNOLOGY, INC.

WNK1 siRNA (h2): sc-96133

BACKGROUND

WNK1 (WNK lysine deficient protein kinase 1), also known as KDP (kinase deficient protein), PSK, erythrocyte 65 kDa protein (p65), HSN2, HSAN2 or PRKWNK1, is a 2,382 amino acid cytoplasmic protein that participates in cell signaling, proliferation and survival, and regulates electrolyte homeostasis. WNK1 belongs to the Ser/Thr protein kinase family of the protein kinase superfamily, and contains one protein kinase domain. Existing as five alternatively spliced isoforms, WNK1 is widely expressed but is found at highest levels in skeletal muscke, heart, testis and kidney. The gene that encodes WNK1 maps to human chromosome 12p13.33, and when defective, is the cause of an an autosomal dominant disease known as pseudohypoaldosteronism type II (PHAII), as well as a hereditary sensory and autonomic neuropathy designated hereditary sensory and autonomic neuropathy type 2A (HSAN2A).

REFERENCES

1. Hart, G.W., et al. 1989. Nucleoplasmic and cytoplasmic glycoproteins. Ciba Found. Symp. 145: 102-112.
2. Moore, T.M., et al. 2000. PSK, a novel STE20-like kinase derived from prostatic carcinoma that activates the c-Jun N-terminal kinase mitogen-activated protein kinase pathway and regulates actin cytoskeletal organization. J. Biol. Chem. 275: 4311-4322.
3. Veríssimo, F. and Jordan, P. 2001. WNK kinases, a novel protein kinase subfamily in multi-cellular organisms. Oncogene 20: 5562-5569.
4. Wilson, F.H., et al. 2001. Human hypertension caused by mutations in WNK kinases. Science 293: 1107-1112.
5. Delaloy, C., et al. 2003. Multiple promoters in the WNK1 gene: one controls expression of a kidney-specific kinase-defective isoform. Mol. Cell. Biol. 23: 9208-9221.
6. Lenertz, L.Y., et al. 2005. Properties of WNK1 and implications for other family members. J. Biol. Chem. 280: 26653-26658.
7. Roddier, K., et al. 2005. Two mutations in the HSN2 gene explain the high prevalence of HSAN2 in French Canadians. Neurology 64: 1762-1767.

CHROMOSOMAL LOCATION

Genetic locus: WNK1 (human) mapping to 12p13.33.

PRODUCT

WNK1 siRNA (h2) 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 WNK1 shRNA Plasmid (h2): sc-96133-SH and WNK1 shRNA (h2) Lentiviral Particles: sc-96133-V as alternate gene silencing products.

For independent verification of WNK1 (h2) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-96133A, sc-96133B and sc-96133C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

WNK1 siRNA (h2) is recommended for the inhibition of WNK1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor WNK1 gene expression knockdown using RT-PCR Primer: WNK1 (h2)-PR: sc-96133-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Liu, Y., et al. 2015. WNK1 activates large-conductance Ca^{2+}-activated K^{+} channels through modulation of ERK1/2 signaling. J. Am. Soc. Nephrol. 26: 844-854.

PROTOCOLS

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