SANTA CRUZ BIOTECHNOLOGY, INC.

WIT-1 siRNA (h): sc-61802

BACKGROUND

Wilms' tumor is a neoplasm of the kidneys that usually occurs in children and is characterized by the presence of abortive tubules and glomeruli surrounded by a spindled cell stroma. The 11p13 Wilms' tumor locus consists of two coordinately regulated transcripts, WT1 and WIT-1, which are mutated in Wilms' tumors. Wilms' tumor upstream neighbor 1 (WIT-1) is encoded by an intronless gene upstream of the Wilms' tumor 1 (WT1) gene, which is is important for nephrogenesis and gonadal growth. The WT1 gene is bidirectionally transcribed from the same promoter region as WIT-1, which may function as an antisense regulator of WT1. WIT-1 and WT1 have the same temporal and cell-restricted expression pattern, although the expression of WIT-1 is less abundant. Methylation of the WIT-1 gene is implicated in hematologic malignancy of chemoresistant acute myeloid leukemia. Single nucleotide polymorphisms (SNPs) in the WIT-1 gene are significantly associated with focal segmental glomerulosclerosis.

REFERENCES

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2. Coppes, M.J., et al. 1993. Loss of heterozygosity mapping in Wilms' tumor indicates the involvement of three distinct regions and a limited role for nondisjunction or mitotic recombination. Genes Chromosomes Cancer 5: 326-334.
3. Gessler, M. and Bruns, G.A. 1993. Sequence of the WT1 upstream region including the WIT-1 gene. Genomics 17: 499-501.
4. Eccles, M.R., et al. 1994. Cloning of novel Wilms tumor gene (WT1) cDNAs; evidence for antisense transcription of WT1. Oncogene 9: 2059-2063.
5. Hewitt, J.A., et al. 1996. Tissue-specific regulation of the WT1 locus. Med. Pediatr. Oncol. 27: 456-461.
6. Plass, C., et al. 1999. Restriction landmark genome scanning for aberrant methylation in primary refractory and relapsed acute myeloid leukemia; involvement of the WIT-1 gene. Oncogene 18: 3159-3165.
7. Orloff, M.S., et al. 2005. Variants in the Wilms' tumor gene are associated with focal segmental glomerulosclerosis in the African American population. Physiol. Genomics 21: 212-221.
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CHROMOSOMAL LOCATION

Genetic locus: WT1-AS (human) mapping to 11p13.

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

WIT-1 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 WIT-1 shRNA Plasmid (h): sc-61802-SH and WIT-1 shRNA (h) Lentiviral Particles: sc-61802-V as alternate gene silencing products.

For independent verification of WIT-1 (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-61802A, sc-61802B and sc-61802C.

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

WIT-1 siRNA (h) is recommended for the inhibition of WIT-1 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 WIT-1 gene expression knockdown using RT-PCR Primer: WIT-1 (h)-PR: sc-61802-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.