

WTX siRNA (h): sc-91345

BACKGROUND

WTX (Wilms tumor on the X), also known as OSCS, AMER1 or FAM123B, is a 1,135 amino acid protein that shuttles between the nucleus and cytoplasm and is a member of the FAM123 family. WTX is expressed in fetal and adult kidney, brain and spleen, and exists as two alternatively spliced isoforms. WTX is responsible for enhanced transcription activation by WT1 (Wilms tumor 1) and promotes β -catenin ubiquitination and degradation. Involved in kidney development, point mutations in the gene encoding WTX are the cause of Wilms tumor (WT), an embryonal malignancy of the kidney that affects approximately 1 in 10,000 infants and young children. WTX is implicated in Wnt signaling and defects in the WTX gene leads to abnormalities in Wnt signaling, and in turn causes X-linked sclerosing bone dysplasia and osteopathia striata congenita with cranial sclerosis, which are characterized by increased bone density and craniofacial malformations in females and lethality in males.

REFERENCES

1. Lee, S.B. and Haber, D.A. 2001. Wilms tumor and the WT1 gene. *Exp. Cell Res.* 264: 74-99.
2. Dome, J.S. and Coppes, M.J. 2002. Recent advances in Wilms tumor genetics. *Curr. Opin. Pediatr.* 14: 5-11.
3. Rivera, M.N., et al. 2007. An X chromosome gene, WTX, is commonly inactivated in Wilms tumor. *Science* 315: 642-645.
4. Major, M.B., et al. 2007. Wilms tumor suppressor WTX negatively regulates WNT/ β -catenin signaling. *Science* 316: 1043-1046.
5. Ruteshouser, E.C., et al. 2008. Wilms tumor genetics: mutations in WT1, WTX, and CTNNB1 account for only about one-third of tumors. *Genes Chromosomes Cancer* 47: 461-470.
6. Yoo, N.J., et al. 2009. Mutational analysis of WTX gene in Wnt/ β -catenin pathway in gastric, colorectal, and hepatocellular carcinomas. *Dig. Dis. Sci.* 54: 1011-1014.

CHROMOSOMAL LOCATION

Genetic locus: AMER1 (human) mapping to Xq11.2.

PRODUCT

WTX 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 WTX shRNA Plasmid (h): sc-91345-SH and WTX shRNA (h) Lentiviral Particles: sc-91345-V as alternate gene silencing products.

For independent verification of WTX (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-91345A, sc-91345B and sc-91345C.

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 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

WTX siRNA (h) is recommended for the inhibition of WTX 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 WTX gene expression knockdown using RT-PCR Primer: WTX (h)-PR: sc-91345-PR (20 μ l). 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.