

Pax-2/5/8 siRNA (h): sc-43996

BACKGROUND

Pax genes contain paired domains with strong homology to genes in *Drosophila* which are involved in programming early development. The Pax-2 gene, which maps to human chromosome 10q24.31, is expressed in primitive cells of the kidney, ureter, eye, ear, and central nervous system. Mutations in the Pax-2 gene can be responsible for renal hypoplasia. The human Pax-5 gene, which maps to human chromosome 9p13.2, encodes a B cell lineage specific protein called B cell specific activator protein (BSAP), which is expressed in pro-B, pre-B and mature B lymphocytes. BSAP regulates B cell development and influences the balance between immunoglobulin secretion and B cell proliferation. The Pax-8 gene, which maps to human chromosome 2q13, is expressed in the developing and adult thyroid, the developing secretory system and at lower levels, in the adult kidney. Patients who have autosomal dominant mutations of the Pax-8 gene develop thyroid dysgenesis.

REFERENCES

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2. Hanson, I.M., et al. 1993. Pax-6 mutations in aniridia. *Hum. Mol. Genet.* 2: 915-920.
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4. Narahara, K., et al. 1997. Localization of a 10q breakpoint within the Pax-2 gene in a patient with a *de novo* t(10;13) translocation and optic nerve coloboma-renal disease. *J. Med. Genet.* 34: 213-216.
5. Tellier, A.L., et al. 2000. Expression of the Pax-2 gene in human embryos and exclusion in the CHARGE syndrome. *Am. J. Med. Genet.* 93: 85-88.
7. Tamimi, Y., et al. 2006. Paired box genes, Pax-2 and Pax-8, are not frequently mutated in Wilms tumor. *Mutat. Res.* 601: 46-50.
8. Villanueva, S., et al. 2006. bFGF induces an earlier expression of nephrogenic proteins after ischemic acute renal failure. *Am. J. Physiol. Regul. Integr. Comp. Physiol.* 291: R1677-R1687.
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PRODUCT

Pax-2/5/8 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 Pax-2/5/8 shRNA Plasmid (h): sc-43996-SH and Pax-2/5/8 shRNA (h) Lentiviral Particles: sc-43996-V as alternate gene silencing products.

For independent verification of Pax-2/5/8 (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-43996A, sc-43996B and sc-43996C.

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

Pax-2/5/8 siRNA (h) is recommended for the inhibition of Pax-2/5/8 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.

GENE EXPRESSION MONITORING

Pax-5 (A-11): sc-13146 is recommended as a control antibody for monitoring of Pax-2/5/8 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-IgG λ BP-HRP: sc-516132 or m-IgG λ BP-HRP (Cruz Marker): sc-516132-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-IgG λ BP-FITC: sc-516185 or m-IgG λ BP-PE: sc-516186 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

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.