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SANTA CRUZ BIOTECHNOLOGY, INC.

Pax-7 siRNA (h2): sc-43997

BACKGROUND

Pax genes contain paired domains that share strong homology to genes in *Drosophila* which are involved in programming early development. The product of the Pax-3 gene is a DNA-binding protein expressed during early neurogenesis. Pax-3 is a protein containing both a paired domain and a paired-type homeodomain. During early neurogenesis, Pax-3 expression is limited to mitotic cells in the ventricular zone of the developing spinal cord and to distinct regions in the hindbrain, midbrain and diencephalon. In 10-12 day embryos, expression of Pax-3 is also seen in neural crest cells of the developing spinal ganglia, the craniofacial mesectoderm and in limb mesenchyme. Mutations in the MITF and Pax-3 genes, encoding transcriptions factors, are responsible for Waardenburg syndrome II (WS2) and WS1/WS3, respectively. Pax-7 is a gene specifically expressed in cultured satellite cell-derived myoblasts. *In situ* hybridization revealed that Pax-7 is also expressed in satellite cells residing in adult muscle. The gene which encodes Pax-7 maps to human chromosome 1p36.13.

REFERENCES

1. Goulding, M.D., et al. 1991. Pax-3, a novel murine DNA binding protein expressed during early neurogenesis. EMBO J. 10: 1135-1147.
2. Stapleton, P., et al. 1993. Chromosomal localization of seven PAX genes and cloning of a novel family member, PAX-9. Nat. Genet. 3: 292-298.
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4. Seale, P., et al. 2000. Pax7 is required for the specification of myogenic satellite cells. Cell 102: 777-786.
5. Schoppmeier, M., et al. 2005. Expression of Pax group III genes suggests a single-segmental periodicity for opisthosomal segment patterning in the spider *Cupiennius salei*. Evol. Dev. 7:160-169.
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7. de Jong, D.M., et al. 2006. Components of both major axial patterning systems of the Bilateria are differentially expressed along the primary axis of a "radiate" animal, the anthozoan cnidarian *Acropora millepora*. Dev. Biol. 298: 632-643.

CHROMOSOMAL LOCATION

Genetic locus: PAX7 (human) mapping to 1p36.13.

PRODUCT

Pax-7 siRNA (h2) is a target-specific 19-25 nt siRNA 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 Pax-7 shRNA Plasmid (h2): sc-43997-SH and Pax-7 shRNA (h2) Lentiviral Particles: sc-43997-V as alternate gene silencing 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 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

Pax-7 siRNA (h2) is recommended for the inhibition of Pax-7 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.

GENE EXPRESSION MONITORING

Pax-7 (PAX7): sc-81648 is recommended as a control antibody for monitoring of 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-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-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-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor gene expression knockdown using RT-PCR Primer: Pax-7 (h2)-PR: sc-43997-PR (20 µl, 512 bp). 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.

PROTOCOLS

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