SANTA CRUZ BIOTECHNOLOGY, INC.

Pax-3 siRNA (m): sc-38748

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 days embryos, expression of Pax-3 is also seen in neural crest cells of the developing spinal ganglia, in the craniofacial mesectoderm and in limb mesenchyme. Mutations in the MITF and Pax-3 genes, encoding transcriptions factors, are responsible for Waardenburg syndrome II (WSII) and WSI/WSIII, respectively.

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. Tassabehji, M., et al. 1992. Waardenburg's syndrome patients have mutations in the human homologue of the Pax-3 paired box gene. Nature 355: 635-636.
3. Hoth, C.F., et al. 1993. Mutations in the paired domain of the human Pax-3 gene cause Klein-Waardenburg syndrome (WSIII) as well as Waardenburg syndrome type I (WSI). Am. J. Hum. Genet. 52: 455-462.
4. 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.
5. Tsukamoto, K., et al. 1994. Isolation of two isoforms of the Pax-3 gene transcripts and their tissue-specific alternative expression in human adult tissues. Hum. Genet. 93: 270-274.
6. Watanabe, A., et al. 1998. Epistatic relationship between Waardenburg syndrome genes MITF and Pax-3. Nat. Genet. 18: 283-286.
7. Wachtel, M., et al. 2004. Gene expression signatures identify rhabdomyosarcoma subtypes and detect a novel t(2;2)(q35;p23) translocation fusing Pax-3 to NCoA-1. Cancer Res. 64: 5539-5545.
8. SWISS-PROT/TrEMBL (P23760). World Wide Web URL: http://www.expasy.ch/sprot/sprot-top.html

CHROMOSOMAL LOCATION

Genetic locus: Pax3 (mouse) mapping to 1 C4.

PRODUCT

Pax-3 siRNA (m) 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 Pax-3 shRNA Plasmid (m): sc-38748-SH and Pax-3 shRNA (m) Lentiviral Particles: sc-38748-V as alternate gene silencing products.

For independent verification of Pax-3 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-38748A, sc-38748B and sc-38748C.

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-3 siRNA (m) is recommended for the inhibition of Pax-3 expression in mouse 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-3 (F-2): sc-376204 is recommended as a control antibody for monitoring of Pax-3 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Pax-3 gene expression knockdown using RT-PCR Primer: Pax-3 (m)-PR: sc-38748-PR (20 µl, 573 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Hirai, H., et al. 2010. MyoD regulates apoptosis of myoblasts through microRNA-mediated down-regulation of Pax-3. J. Cell Biol. 191: 347-365.

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.