SANTA CRUZ BIOTECHNOLOGY, INC.

Pax-9 siRNA (m): sc-38757

BACKGROUND

Pax genes contain paired domains with strong homology to genes in *Drosophila* which are involved in programming early development. Pax-9, a member of the paired box-containing gene family, is closely related in its paired domain to Pax-1. The Pax-9 gene encodes the highly conserved paired domain, and the gene is a member of the same subgroup as Pax-1/undulated. Pax-9 is essential for the development of a variety of organs and skeletal elements. Mutations in either the Pax-1 or the Pax-9 genes may produce an inherited skeletal disorder such as the Jarcho-Levin syndrome or other forms of spondylocostal dysplasia, conditions resembling "undulated" in the mouse. A frameshift mutation within the paired domain of Pax-9, was identified in a family segregating autosomal dominant oligodontia whose members had normal primary dentition but lacked most permanent molars. In addition to lack of permanent molars, some individuals also lacked maxillary and/or mandibular second premolars, as well as mandibular central incisors.

REFERENCES

1. 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.
2. Wallin, J., et al. 1993. A new Pax gene, Pax-9, maps to mouse chromosome 12. Mamm. Genome 4: 354-358.
3. Peters, H., et al. 1998. Pax9-deficient mice lack pharyngeal pouch derivatives and teeth and exhibit craniofacial and limb abnormalities. Genes Dev. 12: 2735-2747.
4. Stockton, D.W., et al. 2000. Mutation of Pax-9 is associated with oligodontia. Nat. Genet. 24: 18-19.
5. LeClair, E.E., et al. 1999. Expression of the paired-box genes Pax-1 and Pax-9 in limb skeleton development. Dev. Dyn. 214: 101-115.
6. Peres, R.C., et al. 2005. Association between Pax-9 promoter polymorphisms and hypodontia in humans. Arch. Oral Biol. 50: 861-871.
7. Kriangkrai, R., et al. 2006. Dual odontogenic origins develop at the early stage of rat maxillary incisor development. Anat. Embryol. 211: 101-108.
8. Devos, D., et al. 2006. New syndromic form of benign hereditary chorea is associated with a deletion of TITF-1 and Pax-9 contiguous genes. Mov. Disord. 21: 2237-2240.
9. LocusLink Report (LocusID: 167416). http://www.ncbi.nlm.nih.gov/LocusLink/

CHROMOSOMAL LOCATION

Genetic locus: Pax9 (mouse) mapping to 12 C1.

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

Pax-9 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-9 shRNA Plasmid (m): sc-38757-SH and Pax-9 shRNA (m) Lentiviral Particles: sc-38757-V as alternate gene silencing products.

For independent verification of Pax-9 (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-38757A, sc-38757B and sc-38757C.

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-9 siRNA (m) is recommended for the inhibition of Pax-9 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-9 (7C2): sc-56823 is recommended as a control antibody for monitoring of Pax-9 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-9 gene expression knockdown using RT-PCR Primer: Pax-9 (m)-PR: sc-38757-PR (20 µl, 536 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.