SANTA CRUZ BIOTECHNOLOGY, INC.

Pax-9 (M-18): sc-7746

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. The gene which encodes Pax-9 maps to human chromosome 14q13.3.

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. 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.
5. Stockton, D.W., et al. 2000. Mutation of PAX9 is associated with oligodontia. Nat. Genet. 24: 18-19.
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 (human) mapping to 14q13.3; Pax9 (mouse) mapping to 12 C1.

SOURCE

Pax-9 (M-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Pax-9 of mouse origin.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-7746 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-7746 X, 200 µg/0.1 ml.

APPLICATIONS

Pax-9 (M-18) is recommended for detection of Pax-9 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Pax-9 (M-18) is also recommended for detection of Pax-9 in additional species, including canine, bovine, porcine and avian.

Suitable for use as control antibody for Pax-9 siRNA (h): sc-38756, Pax-9 siRNA (m): sc-38757, Pax-9 shRNA Plasmid (h): sc-38756-SH, Pax-9 shRNA Plasmid (m): sc-38757-SH, Pax-9 shRNA (h) Lentiviral Particles: sc-38756-V and Pax-9 shRNA (m) Lentiviral Particles: sc-38757-V.

Pax-9 (M-18) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of Pax-9: 35 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Tan, K., et al. 2003. Human PLU-1 Has transcriptional repression properties and interacts with the developmental transcription factors BF-1 and PAX9. J. Biol. Chem. 278: 20507.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

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