SANTA CRUZ BIOTECHNOLOGY, INC.

Pax-6 (h): 293 Lysate: sc-113085

BACKGROUND

Pax genes contain paired domains with strong homology to genes in *Drosophila*, which are involved in programming early development. Lesions in the PAX6 gene account for most cases of aniridia, a congenital malformation of the eye, chiefly characterized by iris hypoplasia, which can cause blindness. PAX6 is involved in other anterior segment malformations besides aniridia, such as Peters anomaly, a major error in the embryonic development of the eye with corneal clouding and variable iridolenticulocorneal adhesions. The PAX6 gene encodes a transcriptional regulator that recognizes target genes through its paired-type DNA-binding domain. The paired domain is composed of two distinct DNA-binding subdomains, the amino-terminal subdomain and the carboxy-terminal subdomain, which bind respective consensus DNA sequences. The human PAX6 gene produces two alternatively spliced isoforms that have the distinct structure of the paired domain.

REFERENCES

1. Hanson, I.M., et al. 1993. Pax-6 mutations in aniridia. Hum. Mol. Genet. 2: 915-920.
2. Hanson, I.M., et al. 1994. Mutations at the Pax-6 locus are found in heterogeneous anterior segment malformations including Peters anomaly. Nat. Genet. 6: 168-173.
3. Azuma, N., et al. 1999. Missense mutation in the alternative splice region of the Pax-6 gene in eye anomalies. Am. J. Hum. Genet. 65: 656-663.
4. Fic, W., et al. 2007. Eye development under the control of SRp55/B52-mediated alternative splicing of eyeless. PLoS ONE 2: e253.
5. Yan, Q., et al. 2007. Protein phosphatase-1 modulates the function of Pax-6, a transcription factor controlling brain and eye development. J. Biol. Chem. 282: 13954-13965.
6. Baer, K., et al. 2007. Sox-2 is expressed by glial and progenitor cells and Pax-6 is expressed by neuroblasts in the human subventricular zone. Exp. Neurol. 204: 828-831.
7. Xu, H., et al. 2007. Characteristics of progenitor cells derived from adult ciliary body in mouse, rat, and human eyes. Invest. Ophthalmol. Vis. Sci. 48: 1674-1682.
8. Pinto, G.R., et al. 2007. Mutation analysis of gene Pax-6 in human gliomas. Genet. Mol. Res. 6: 1019-1025.
9. Khan, A.O., et al. 2008. Pax-6 analysis of two unrelated families from the Arabian Peninsula with classic hereditary aniridia. Ophthalmic Genet. 29: 145-148.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: PAX6 (human) mapping to 11p13.

PRODUCT

Pax-6 (h): 293 Lysate represents a lysate of human Pax-6 transfected 293 cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

Pax-6 (h): 293 Lysate is suitable as a Western Blotting positive control for human reactive Pax-6 antibodies. Recommended use: 10-20 µl per lane.

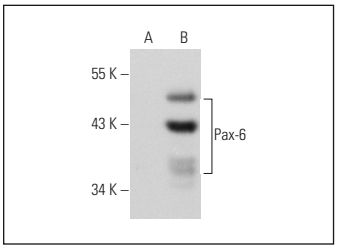
Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-tranfected 293 cells.

Pax-6 (PAX6): sc-81649 is recommended as a positive control antibody for Western Blot analysis of enhanced human Pax-6 expression in Pax-6 transfected 293 cells (starting dilution 1:100, dilution range 1:100-1:1,000).

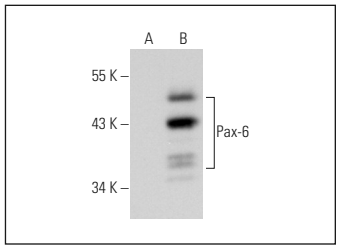
RECOMMENDED SUPPORT REAGENTS

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.

DATA



Pax-6 (PAX6): sc-81649. Western blot analysis of Pax-6 expression in non-transfected: sc-110760 (**A**) and human Pax-6 transfected: sc-113085 (**B**) 293 whole cell lysates.



Pax-6 (AD2.38): sc-32766. Western blot analysis of Pax-6 expression in non-transfected: sc-110760 (**A**) and human Pax-6 transfected: sc-113085 (**B**) 293 whole cell lysates.

RESEARCH USE

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