SANTA CRUZ BIOTECHNOLOGY, INC.

VAX2 (VAX2A8F12): sc-81422

BACKGROUND

VAX2 (Ventral anterior homeobox 2) is a 290 amino acid homeobox protein that is expressed in the ventral portion of the early developing retina. Localized to the nucleus, VAX2 plays a crucial role in development of the eye, particularly in the specification of the ventral optic vesicle and in establishment of a correct dorsoventral pattern. VAX2 acts as a transcription factor with VAX1 to cooperatively regulate retinal differentiation, neuroepithelial cell proliferation and axial polarization in the retina. Together, VAX1 and VAX2 repress transcription of Pax-6, a strong inducer of retinal development. Once Pax-6 is repressed, retinal differentiation slows, thus allowing for proper development of the optic nerve. VAX2 contains one homeobox DNA-bindng domain and belongs to the EMX homeobox family of proteins.

REFERENCES

1. Barbieri, A.M., et al. 1999. A homeobox gene, vax2, controls the patterning of the eye dorsoventral axis. Proc. Natl. Acad. Sci. USA 96: 10729-10734.
2. Mui, S.H., et al. 2002. The homeodomain protein VAX2 patterns the dorsoventral and nasotemporal axes of the eye. Development 129: 797-804.
3. Barbieri, A.M., et al. 2002. VAX2 inactivation in mouse determines alteration of the eye dorsal-ventral axis, misrouting of the optic fibres and eye coloboma. Development 129: 805-813.
4. Alfano, G., et al. 2005. Natural antisense transcripts associated with genes involved in eye development. Hum. Mol. Genet. 14: 913-923.
5. Mui, S.H., et al. 2005. VAX genes ventralize the embryonic eye. Genes Dev. 19: 1249-1259.
6. Kim, J.W. and Lemke, G. 2006. Hedgehog-regulated localization of VAX2 controls eye development. Genes Dev. 20: 2833-2847.

CHROMOSOMAL LOCATION

Genetic locus: VAX2 (human) mapping to 2p13.3; Vax2 (mouse) mapping to 6 C3.

SOURCE

VAX2 (VAX2A8F12) is a mouse monoclonal antibody raised against a recombinant protein corresponding to a region near the C-terminus of VAX2 of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 1.0% stabilizer protein.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

RESEARCH USE

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

APPLICATIONS

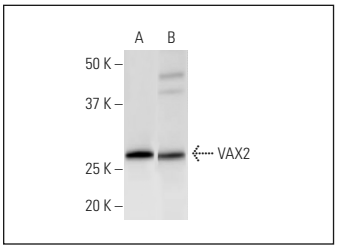
VAX2 (VAX2A8F12) is recommended for detection of VAX2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for VAX2 siRNA (h): sc-76891, VAX2 siRNA (m): sc-76892, VAX2 shRNA Plasmid (h): sc-76891-SH, VAX2 shRNA Plasmid (m): sc-76892-SH, VAX2 shRNA (h) Lentiviral Particles: sc-76891-V and VAX2 shRNA (m) Lentiviral Particles: sc-76892-V.

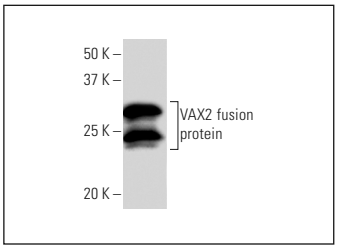
Molecular Weight of VAX2: 31 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or NIH/3T3 whole cell lysate: sc-2210.

DATA



VAX2 (VAX2A8F12): sc-81422. Western Blot analysis of VAX2 expression in HeLa (**A**) and NIH/3T3 (**B**) whole cell lysates.



VAX2 (VAX2A8F12): sc-81422. Western Blot analysis of human recombinant VAX2 fusion protein.

SELECT PRODUCT CITATIONS

1. Viringipurampeer, I.A., et al. 2012. Pax2 regulates a fadd-dependent molecular switch that drives tissue fusion during eye development. Hum. Mol. Genet. 21: 2357-2369.

PROTOCOLS

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