SANTA CRUZ BIOTECHNOLOGY, INC.

Six3 (G-7): sc-398796

BACKGROUND

The Six proteins (sine oculis) are a family of homeodomain transcription factors that share a conserved DNA binding domain. Six3 is required for the specification and proliferation of the eye field in vertebrates and may be involved in some developmental disorders of the brain. Expression of Six3 is detected in human embryos as early as five to seven weeks of gestation, and is maintained in the eye throughout the entire period of fetal development. At 20 weeks of gestation, expression of Six3 in the human retina has been observed in ganglion cells and in cells of the inner nuclear layer. Six3 maps to human chromosome 2p21, between genetic markers D2S119 and D2S288. The map position of human Six3 overlaps the positions of two dominant disorders (holoprosencephaly type 2 and Malattia leventinese) with ocular phenotypes that have been assigned to this chromosomal region.

REFERENCES

1. Granadino, B., et al. 1999. Genomic cloning, structure, expression pattern and chromosomal location of the human Six3 gene. Genomics 55: 100-105.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 603714. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Del Bene, F., et al. 2004. Direct interaction of geminin and Six3 in eye development. Nature 427: 745-749.
4. Hisaoka, M., et al. 2004. Coex-pression of Nor1 and Six3 proteins in extraskeletal myxoid chondrosarcomas without detectable NR4A3 fusion genes. Cancer Genet. Cytogenet. 152: 101-107.
5. Aijaz, S., et al. 2005. Expression analysis of Six3 and Six6 in human tissues reveals differences in expression and a novel correlation between the expression of Six3 and the genes encoding isocitrate dehyhrogenase and cadherin 18. Genomics 86: 86-99.
6. Conte, I., et al. 2005. Comparative analysis of Six3 and Six6 distribution in the developing and adult mouse brain. Dev. Dyn. 234: 718-725.
7. Gestri, G., et al. 2005. Six3 functions in anterior neural plate specification by promoting cell proliferation and inhibiting Bmp4 expression. Development 132: 2401-2413.
8. Lengler, J., et al. 2005. Agonistic and antagonistic action of AP2, Msx2, Pax6, Prox1 and Six3 in the regulation of Sox2 expression. Ophthalmic Res. 37: 301-309.

CHROMOSOMAL LOCATION

Genetic locus: SIX3 (human) mapping to 2p21; Six3 (mouse) mapping to 17 E4.

SOURCE

Six3 (G-7) is a mouse monoclonal antibody raised against amino acids 269-327 mapping near the C-terminus of Six3 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-398796 X, 200 µg/0.1 ml.

APPLICATIONS

Six3 (G-7) is recommended for detection of Six3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

Suitable for use as control antibody for Six3 siRNA (h): sc-38788, Six3 siRNA (m): sc-38789, Six3 shRNA Plasmid (h): sc-38788-SH, Six3 shRNA Plasmid (m): sc-38789-SH, Six3 shRNA (h) Lentiviral Particles: sc-38788-V and Six3 shRNA (m) Lentiviral Particles: sc-38789-V.

Six3 (G-7) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

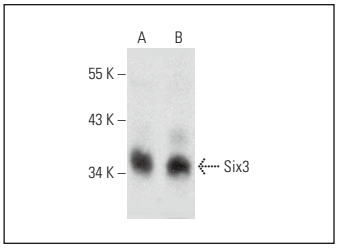
Molecular Weight of Six3: 37 kDa.

Positive Controls: Y79 cell lysate: sc-2240 or RPE-J cell lysate: sc-24771.

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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Six3 (G-7): sc-398796. Western blot analysis of Six3 expression in Y79 (**A**) and RPE-J (**B**) whole cell lysates.

STORAGE

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

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.