SANTA CRUZ BIOTECHNOLOGY, INC.

Dlx-1 (F-16): sc-81959

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Dlx genes are a highly conserved family of six different (Dlx-1–6) homeobox-containing genes that share homology with Distal-less (Dll), a gene expressed in the head and limbs of the developing fruit fly. Dlx-1 (Distal-less homeobox 1), also known as Distal-less, is a 255 amino acid protein that is essential for progenitors to differentiate into GABAergic (secreting or transmitting of γ-aminobutyric acid) neurons. Dlx proteins influence different stages of proper tissue development, including patterning of the orofacial skeleton (craniofacial ectomesenchyme) and differentiation of structures within and between teeth. Dlx-1 is expressed in spatially and temporally restricted patterns in craniofacial primordia, basal telencephalon and diencephalon, and in distal regions of extending appendages, including the limb and the genital bud. The differential expression of Dlx-1 influences patterning, morphogenesis and histogenesis in these tissues. Due to its ability to influence transcription, Dlx-1 is thought to regulate a transcriptional hierarchy that controls neuron versus oligodendroglial cell fate within a progenitor.

REFERENCES

1. Weiss, K.M., et al. 1995. Dlx and other homeobox genes in the morphological development of the dentition. Connect. Tissue Res. 32: 35-40.
2. Davideau, J.L., et al. 1999. Expression of DLX5 during human embryonic craniofacial development. Mech. Dev. 81: 183-186.
3. Depew, M.J., et al. 1999. Dlx-5 regulates regional development of the branchial arches and sensory capsules. Development 126: 3831-3846.
4. Eisenstat, D.D., et al. 1999. Dlx-1, Dlx-2, and Dlx-5 expression define distinct stages of basal forebrain differentiation. J. Comp. Neurol. 414: 217-237.
5. Bendall, A.J. and Abate-Shen, C. 2000. Roles for Msx and Dlx homeoproteins in vertebrate development. Gene 247: 17-31.
6. Merlo, G.R., et al. 2000. Multiple functions of Dlx genes. Int. J. Dev. Biol. 44: 619-626.
7. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 600029. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
8. Petryniak, M.A., et al. 2007. Dlx-1 and Dlx-2 control neuronal versus oligodendroglial cell fate acquisition in the developing forebrain. Neuron 55: 417-433.

CHROMOSOMAL LOCATION

Genetic locus: DLX1 (human) mapping to 2q31.1; Dlx1 (mouse) mapping to 2 C2.

SOURCE

Dlx-1 (F-16) is a mouse monoclonal antibody raised against recombinant Dlx-1 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Dlx-1 (F-16) is recommended for detection of Dlx-1 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)], 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 Dlx-1 siRNA (h): sc-105301, Dlx-1 siRNA (m): sc-143058, Dlx-1 shRNA Plasmid (h): sc-105301-SH, Dlx-1 shRNA Plasmid (m): sc-143058-SH, Dlx-1 shRNA (h) Lentiviral Particles: sc-105301-V and Dlx-1 shRNA (m) Lentiviral Particles: sc-143058-V.

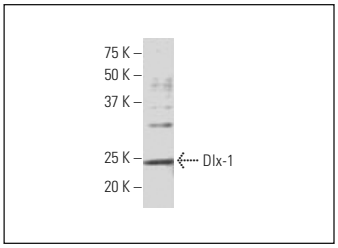
Molecular Weight of Dlx-1: 27 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409.

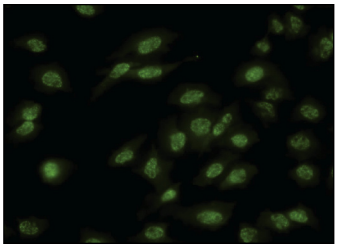
RECOMMENDED SUPPORT REAGENTS

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



Dlx-1 (F-16): sc-81959. Western blot analysis of Dlx-1 expression in IMR-32 whole cell lysate.



Dlx-1 (F-16): sc-81959. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Zhao, M., et al. 2020. The role and potential mechanism of p75NTR in mineralization via *in vivo* p75NTR knockout mice and *in vitro* ectomesenchymal stem cells. Cell Prolif. 53: e12758.

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.