SANTA CRUZ BIOTECHNOLOGY, INC.

Delta-3 (M-160): sc-67269

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The LIN-12/Notch family of transmembrane receptors is believed to play a central role in development by regulating cell fate decisions. Notch can be activated by several ligands including Jagged1, Jagged2 and the Delta family of proteins. Delta-3, also known as DLL3 (*Drosophila* Delta homolog 3) or SCDO1, is a single-pass type I membrane protein that can bind to and activate Notch receptors. Required to divert neurons along their specified differentiation pathways, Delta-3 can inhibit primary neurogenesis and assist in forming somite boundaries during paraxial mesoderm segmentation. Delta-3 contains six EGF-like domains, one transmembrane domain and one DSL domain which is required for proper binding to the Notch receptor. Ubiquination by Skeletrophin (also known as MIB2, mindbomb homolog 2) leads to endocytosis and subsequent degradation of Delta-3. Defects in the gene encoding Delta-3 are the cause of autosomal recessive spondylocostal dysostosis type 1 (SCDO1), a condition characterized by rib fusions and multiple hemivertebrae.

REFERENCES

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2. Turnpenny, P.D., et al. 2003. Novel mutations in DLL3, a somitogenesis gene encoding a ligand for the Notch signalling pathway, cause a consistent pattern of abnormal vertebral segmentation in spondylocostal dysostosis. J. Med. Genet. 40: 333-339.
3. Maisenbacher, M.K., et al. 2005. Molecular analysis of congenital scoliosis: a candidate gene approach. Hum. Genet. 116: 416-419.
4. Ladi, E., et al. 2005. The divergent DSL ligand Dll3 does not activate Notch signaling but cell autonomously attenuates signaling induced by other DSL ligands. J. Cell Biol. 170: 983-992.
5. Chen, J., et al. 2006. Expression of Notch signaling pathway genes in mouse embryos lacking β4-galactosyltransferase-1. Gene Expr. Patterns 6: 376-382.
6. Giampietro, P.F., et al. 2006. DLL3 as a candidate gene for vertebral malformations. Am. J. Med. Genet. A 140A: 2447-2453.
7. Geffers, I., et al. 2007. Divergent functions and distinct localization of the Notch ligands DLL1 and DLL3 *in vivo*. J. Cell Biol. 178: 465-476.
8. Hartman, B.H., et al. 2007. DLL3 is expressed in developing hair cells in the mammalian cochlea. Dev. Dyn. 236: 2875-2883.
9. Loomes, K.M., et al. 2007. DLL3 and Notch1 genetic interactions model axial segmental and craniofacial malformations of human birth defects. Dev. Dyn. 236: 2943-2951.

CHROMOSOMAL LOCATION

Genetic locus: DLL3 (human) mapping to 19q13.2; Dll3 (mouse) mapping to 7 A3.

RESEARCH USE

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

SOURCE

Delta-3 (M-160) is a rabbit polyclonal antibody raised against amino acids 121-280 mapping within an extracellular domain of Delta-3 of mouse origin.

PRODUCT

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

APPLICATIONS

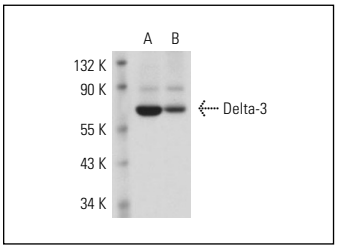
Delta-3 (M-160) is recommended for detection of Delta-3 of mouse, rat and, to a lesser extent, human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 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 Delta-3 siRNA (h): sc-62206, Delta-3 siRNA (m): sc-62207, Delta-3 shRNA Plasmid (h): sc-62206-SH, Delta-3 shRNA Plasmid (m): sc-62207-SH, Delta-3 shRNA (h) Lentiviral Particles: sc-62206-V and Delta-3 shRNA (m) Lentiviral Particles: sc-62207-V.

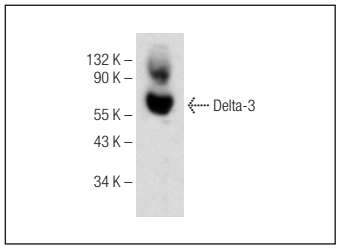
Molecular Weight of Delta-3: 65 kDa.

Positive Controls: mouse brain extract: sc-2253 or mouse embryo extract: sc-364239.

DATA



Delta-3 (M-160): sc-67269. Western blot analysis of Delta-3 expression in mouse embryo (**A**) and mouse brain (**B**) tissue extracts.



Delta-3 (M-160): sc-67269. Western blot analysis of Delta-3 expression in MIA PaCa-2 whole cell lysate.

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.