

Lunatic Fringe (TT-07): sc-100756

BACKGROUND

Three mammalian fringe family members, namely Manic Fringe, Radical Fringe and Lunatic Fringe, have been identified as proteins related to *Drosophila* Fringe, a protein involved in development. Fringe proteins act upstream of the Notch signaling pathway and are involved in boundary determination during segmentation. Each mammalian fringe displays different patterns of expression, though all are expressed in the mouse embryo as well as in many adult tissues. Lunatic Fringe, also known as LFNG or SCDO3, is a 379 amino acid single-pass type II membrane protein that localizes to the membrane of the Golgi apparatus. Functioning as a glycosyltransferase, Lunatic Fringe acts as a critical mediator of somite patterning and segmentation and plays a fundamental role in initiating the elongation of O-linked fucose residues that are attached to Notch molecules. Defects in the gene encoding Lunatic Fringe are the cause of autosomal recessive spondylocostal dysostosis 3 (SCDO3), a disorder that arises during embryonic development and is characterized by rib anomalies and multiple vertebrate segmentation. Three isoforms of Lunatic Fringe are expressed due to alternative splicing events.

REFERENCES

1. Johnston, S.H., et al. 1997. A family of mammalian fringe genes implicated in boundary determination and the Notch pathway. *Development* 124: 2245-2254.
2. May, W.A., et al. 1997. EWS/FLI1-induced Manic Fringe renders NIH 3T3 cells tumorigenic. *Nat. Genet.* 17: 495-497.
3. Laufer, E., et al. 1997. Expression of Radical Fringe in limb-bud ectoderm regulates apical ectodermal ridge formation. *Nature* 386: 366-373.
4. Thelu, J., et al. 1998. Differential expression pattern of the three fringe genes is associated with epidermal differentiation. *J. Invest. Dermatol.* 111: 903-906.
5. Evrard, Y.A., et al. 1998. Lunatic Fringe is an essential mediator of somite segmentation and patterning. *Nature* 394: 377-381.
6. McGrew, M.J., et al. 1998. The Lunatic Fringe gene is a target of the molecular clock linked to somite segmentation in avian embryos. *Curr. Biol.* 8: 979-982.

CHROMOSOMAL LOCATION

Genetic locus: LFNG (human) mapping to 7p22.3; Lfng (mouse) mapping to 5 G2.

SOURCE

Lunatic Fringe (TT-07) is a mouse monoclonal antibody raised against recombinant Lunatic Fringe 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.

RESEARCH USE

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

APPLICATIONS

Lunatic Fringe (TT-07) is recommended for detection of Lunatic Fringe of mouse, rat and human origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:5000), immunoprecipitation [1-2 µl per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution to be determined by researcher, dilution range 1:100-1:5000).

Suitable for use as control antibody for Lunatic Fringe siRNA (h): sc-39490, Lunatic Fringe siRNA (m): sc-39491, Lunatic Fringe shRNA Plasmid (h): sc-39490-SH, Lunatic Fringe shRNA Plasmid (m): sc-39491-SH, Lunatic Fringe shRNA (h) Lentiviral Particles: sc-39490-V and Lunatic Fringe shRNA (m) Lentiviral Particles: sc-39491-V.

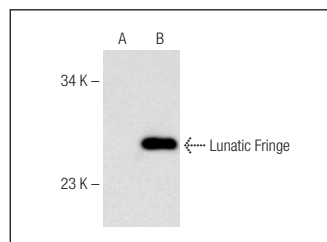
Molecular Weight of Lunatic Fringe: 42 kDa.

Positive Controls: PC-12 cell lysate: sc-2250 or Lunatic Fringe (h): 293T Lysate: sc-113463.

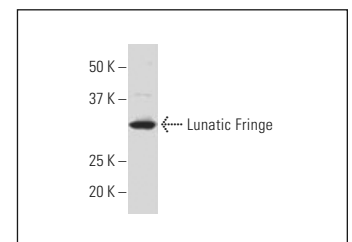
RECOMMENDED SUPPORT REAGENTS

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).

DATA



Lunatic Fringe (TT-07): sc-100756. Western blot analysis of Lunatic Fringe expression in non-transfected: sc-117752 (A) and human Lunatic Fringe transfected: sc-113463 (B) 293T whole cell lysates.



Lunatic Fringe (TT-07): sc-100756. Western blot analysis of Lunatic Fringe expression in PC-12 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Ren, K., et al. 2014. KCTD10 is involved in the cardiovascular system and Notch signaling during early embryonic development. *PLoS ONE* 9: e112275.

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 for detailed protocols and support products.