



# Lunatic Fringe (A-19): sc-8239

## 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 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

- May, W.A., et al. 1997. EWS/Fli-1-induced Manic Fringe renders NIH/3T3 cells tumorigenic. *Nat. Genet.* 17: 495-497.
- Laufer, E., et al. 1997. Expression of Radical Fringe in limb-bud ectoderm regulates apical ectodermal ridge formation. *Nature* 386: 366-373. Published erratum in: *Nature* 388: 400.
- Johnston, S.H., et al. 1997. A family of mammalian fringe genes implicated in boundary determination and the Notch pathway. *Development* 124: 2245-2254.
- Thelu, J., et al. 1998. Differential expression pattern of the three fringe genes is associated with epidermal differentiation. *J. Invest. Dermatol.* 111: 903-906.
- Evrard, Y.A., et al. 1998. Lunatic Fringe is an essential mediator of somite segmentation and patterning. *Nature* 394: 377-381.
- 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.
- Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 602576. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Sparrow, D.B., et al. 2006. Mutation of the Lunatic Fringe gene in humans causes spondylocostal dysostosis with a severe vertebral phenotype. *Am. J. Hum. Genet.* 78: 28-37.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.

## CHROMOSOMAL LOCATION

Genetic locus: Lfng (mouse) mapping to 5 G2.

## SOURCE

Lunatic Fringe (A-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Lunatic Fringe 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.

Blocking peptide available for competition studies, sc-8239 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Lunatic Fringe (A-19) is recommended for detection of Lunatic Fringe of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 Lunatic Fringe siRNA (m): sc-39491, Lunatic Fringe shRNA Plasmid (m): sc-39491-SH 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.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## SELECT PRODUCT CITATIONS

- Ong, C.T., et al. 2008. Notch and Presenilin regulate cellular expansion and cytokine secretion but cannot instruct Th1/Th2 fate acquisition. *PLoS ONE* 3: e2823.

## RESEARCH USE

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