SANTA CRUZ BIOTECHNOLOGY, INC.

Radical Fringe siRNA (m): sc-39495

BACKGROUND

Three mammalian fringe family members, Manic, Radical 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. Radical Fringe, also known as β-1,3-N-acetylglucosaminyltransferase Radical Fringe, is a 331 amino acid single-pass type II membrane protein that localizes to the membrane of the Golgi apparatus. Playing a key role in the development of the limb bud, Radical Fringe transfers a β-D-GlcNAc residue from UDP-D-GlcNAc to the fucose residue of a fucosylated protein acceptor. Lunatic Fringe is required for normal somite segmentation and patterning and is thought to be a target of the molecular clock. Manic Fringe, also involved in somatic development, has been shown to render mouse NIH/3T3 cells tumorigenic in SCID mice.

REFERENCES

1. May, W.A., et al. 1997. EWS/FLI1-induced Manic Fringe renders NIH/3T3 cells tumorigenic. Nat. Genet. 17: 495-497.
2. Laufer, E., et al. 1997. Expression of Radical fringe in limb-bud ectoderm regulates apical ectodermal ridge formation. Nature 386: 366-373.
3. Johnston, S.H., et al. 1997. A family of mammalian Fringe genes implicated in boundary determination and the Notch pathway. Development 124: 2245-2254.
4. May, W.A., et al. 1997. EWS/FLI1-induced manic fringe renders NIH/3T3 cells tumorigenic. Nat. Genet. 17: 495-497.
5. Cohen, B., et al. 1997. Fringe boundaries coincide with Notch-dependent patterning centres in mammals and alter Notch-dependent development in *Drosophila*. Nat. Genet. 16: 283-288.
6. Thelu, J., et al. 1998. Differential expression pattern of the three fringe genes is associated with epidermal differentiation. J. Invest. Dermatol. 111: 903-906.
7. Evrard, Y.A., et al. 1998. Lunatic Fringe is an essential mediator of somite segmentation and patterning. Nature 394: 377-381.
8. 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: Rfng (mouse) mapping to 11 E2.

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.

PRODUCT

Radical Fringe siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Radical Fringe shRNA Plasmid (m): sc-39495-SH and Radical Fringe shRNA (m) Lentiviral Particles: sc-39495-V as alternate gene silencing products.

For independent verification of Radical Fringe (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-39495A, sc-39495B and sc-39495C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Radical Fringe siRNA (m) is recommended for the inhibition of Radical Fringe expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Radical Fringe gene expression knockdown using RT-PCR Primer: Radical Fringe (m)-PR: sc-39495-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.