SANTA CRUZ BIOTECHNOLOGY, INC.

FAT1 siRNA (m): sc-145079

BACKGROUND

The FAT proteins are members of the Cadherin superfamily homologous to the *Drosophila* Fat protein that functions as a positive regulator of planar cell polarity in the *Drosophila* wing. FAT1 is an unusual cadherin that controls cell growth and planar polarity while acting as a tumor suppressor. FAT1 is a proximal element of a signaling pathway that determines both cellular polarity in the plane of the monolayer and directed actin-dependent cell motility. FAT1 is localized at the leading edge of lamellipodia, filopodia, and microspike tips where it directly interacts with Ena/VASP proteins to regulate the Actin polymerization complex. When targeted to mitochondrial outer leaflets, the cytoplasmic domain of FAT1 recruits components of the Actin polymerization machinery sufficient to induce ectopic Actin polymerization. FAT1 expression in vascular smooth muscle cells (VSMCs) increases significantly after arterial injury or growth factor stimulation, implicating FAT1 in the control of VSMC functions central to vascular remodeling by facilitating migration and limiting proliferation. FAT1 is also involved in psychic disorders, and its Action may be of patho-physiological importance.

REFERENCES

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2. Hsu, C.C., et al. 2005. One-week versus two-week H2-receptor antagonist in combination with amoxicillin and tinidazole for eradication of *Helicobacter pylori* infection. Hepatogastroenterology 52: 1617-1621.
3. Rock, R., et al. 2005. Expression of mouse dchs1, fjx1, an cell polarity pathway identified in *Drosophila*. Dev. Dyn. 234: 747-755.
4. Tanoue, T., et al. 2005. New insights into FAT cadherins. J. Cell Sci. 118: 2347-2353.
5. Berg, F., et al. 2006. Refined localization of the FAT1 quantitative trait locus on pig chromosome 4 by marker-assisted backcrossing. BMC Genet. 7: 17.
6. Hou, R., et al. 2006. The FAT1 cadherin integrates vascular smooth muscle cell growth and migration signals. J. Cell Biol. 173: 417-429.
7. Katoh, Y. and Katoh, M. 2006. Comparative integromics on FAT1, FAT2, FAT3 and FAT4. Int. J. Mol. Med. 18: 523-528.
8. Kwaepila, N., et al. 2006. Immunohistological localisation of human FAT1 (hFAT) protein in 326 breast cancers. Does this adhesion molecule have a role in pathogenesis? Pathology 38: 125-131.

CHROMOSOMAL LOCATION

Genetic locus: Fat1 (mouse) mapping to 8 B1.1.

PRODUCT

FAT1 siRNA (m) is a target-specific 19-25 nt siRNA 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 FAT1 shRNA Plasmid (m): sc-145079-SH and FAT1 shRNA (m) Lentiviral Particles: sc-145079-V as alternate gene silencing products.

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

FAT1 siRNA (m) is recommended for the inhibition of FAT1 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 FAT1 gene expression knockdown using RT-PCR Primer: FAT1 (m)-PR: sc-145079-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.