SANTA CRUZ BIOTECHNOLOGY, INC.

FAT3 siRNA (h): sc-96621

BACKGROUND

The cadherins represent a family of Ca^{2+}-dependent adhesion molecules that function to mediate cell to cell binding that is critical for the maintenance of structure and morphogenesis. Cadherins each contain a large extracellular domain at the N-terminus, which is characterized by a series of five homologous repeats, the most distal of which is thought to be responsible for binding specificity. The relatively short C-terminal intracellular domain interacts with a variety of cytoplasmic proteins, including β-catenin, to regulate cadherin function. The cadherin superfamily includes cadherins, protocadherins, desmogleins and desmocollins. FAT3 (FAT tumor suppressor homolog 3, also known as CDHF15 or CDHR10, is a 4,589 amino acid single-pass type I membrane protein expressed in ES cells, primitive neuroectoderm, fetal brain, infant brain, adult neural tissues and prostate. Containing 33 cadherin domains, four EGF-like domains and one laminin G-like domain, FAT3 may participate in the interactions between neurites derived from specific subsets of neurons during development.

REFERENCES

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2. Dunne, J., et al. 1995. Molecular cloning and tissue expression of FAT, the human homologue of the *Drosophila* fat gene that is located on chromosome 4q34-q35 and encodes a putative adhesion molecule. Genomics 30: 207-223.
3. Wu, Q., et al. 1999. A striking organization of a large family of human neural cadherin-like cell adhesion genes. Cell 97: 779-790.
4. Suzuki, S.T. 2000. Recent progress in protocadherin research. Exp. Cell Res. 261: 13-18.
5. Hill, E., et al. 2001. Cadherin superfamily proteins in *Caenorhabditis elegans* and *Drosophila melanogaster*. J. Mol. Biol. 305: 1011-1024.
6. Mitsui, K., et al. 2002. Mammalian fat3: a large protein that contains multiple cadherin and EGF-like motifs. Biochem. Biophys. Res. Commun. 290: 1260-1266.
7. Noonan, J.P., et al. 2004. Gene conversion and the evolution of protocadherin gene cluster diversity. Genome Res. 14: 354-366.

CHROMOSOMAL LOCATION

Genetic locus: FAT3 (human) mapping to 11q14.3.

PRODUCT

FAT3 siRNA (h) 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 FAT3 shRNA Plasmid (h): sc-96621-SH and FAT3 shRNA (h) Lentiviral Particles: sc-96621-V as alternate gene silencing products.

For independent verification of FAT3 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-96621A, sc-96621B and sc-96621C.

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

FAT3 siRNA (h) is recommended for the inhibition of FAT3 expression in human 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 FAT3 gene expression knockdown using RT-PCR Primer: FAT3 (h)-PR: sc-96621-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.