SANTA CRUZ BIOTECHNOLOGY, INC.

FVT1 siRNA (h): sc-75069

BACKGROUND

FVT1 (follicular variant translocation protein 1), also known as KDSR (3-ketodihydrosphingosine reductase) or DHSR, is a 332 amino acid multi-pass membrane protein that localizes to the endoplasmic reticulum (ER) and belongs to the short-chain dehydrogenases/reductases (SDR) family. Widely expressed with highest expression in placenta, kidney, lung, small intestine and stomach, FVT1 catalyzes the NADP-dependent reduction of 3-ketodihydrosphingosine (KDS) to dihydrosphingosine (DHS), a key reaction in sphingolipid metabolism. In humans, defects in the gene encoding FVT1 are associated with follicular lymphoma (also known as type II chronic lymphatic leukemia), a common, slow-growing cancer arising from B-cells. Mutations in the gene encoding the corresponding bovine ortholog are associated with spinal muscular atrophy, a general term for a number of disorders characterized by a loss of motor neurons in the brainstem and spinal cord.

REFERENCES

1. Rimokh, R., et al. 1993. FVT1, a novel human transcription unit affected by variant translocation t(2;18)(p11;q21) of follicular lymphoma. Blood 81: 136-142.
2. Nacheva, E., et al. 1994. B-cell non-Hodgkin's lymphoma cell line (Karpas 1106) with complex translocation involving 18q21.3 but lacking Bcl2 rearrangement and expression. Blood 84: 3422-3428.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 136440. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Wang, J., et al. 2003. Uterine tumor resembling ovarian sex cord tumor: report of a case with t(X;6)(p22.3;q23.1) and t(4;18)(q21.1;q21.3). Diagn. Mol. Pathol. 12: 174-180.
5. Kihara, A. and Igarashi, Y. 2004. FVT1 is a mammalian 3-ketodihydrosphingosine reductase with an active site that faces the cytosolic side of the endoplasmic reticulum membrane. J. Biol. Chem. 279: 49243-49250.
6. Krebs, S., et al. 2007. A missense mutation in the 3-ketodihydrosphingosine reductase FVT1 as candidate causal mutation for bovine spinal muscular atrophy. Proc. Natl. Acad. Sci. USA 104: 6746-6751.

CHROMOSOMAL LOCATION

Genetic locus: KDSR (human) mapping to 18q21.33.

PRODUCT

FVT1 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 FVT1 shRNA Plasmid (h): sc-75069-SH and FVT1 shRNA (h) Lentiviral Particles: sc-75069-V as alternate gene silencing products.

For independent verification of FVT1 (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-75069A, sc-75069B and sc-75069C.

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

FVT1 siRNA (h) is recommended for the inhibition of FVT1 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.

GENE EXPRESSION MONITORING

FVT1 (SS-7): sc-100589 is recommended as a control antibody for monitoring of FVT1 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor FVT1 gene expression knockdown using RT-PCR Primer: FVT1 (h)-PR: sc-75069-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.