SANTA CRUZ BIOTECHNOLOGY, INC.

FATE1 siRNA (h): sc-90989

BACKGROUND

FATE1 (fetal and adult testis expressed 1), also known as FATE, CT43 (cancer/testis antigen 43) or BJ-HCC-2, is a cancer/testis antigen found in testis and tumor tissues (specifically hepatocarcinoma cells). Its expression is regulated by SF-1 (steroidogenic factor 1) and WT1 (Wilms' tumor protein), two proteins involved in tumorigenesis, suggesting a role for FATE1 in tumor development. FATE1 is exclusively expressed in testis of the 6-11 week old fetus (around the period of gonadal sex differentiation). At 7 weeks, FATE1 is coexpressed with SRY and may play a role in early testicular differentiation. In adults, although predominantly expressed in testis, FATE1 can also be found in heart, kidney, brain, lung and adrenal gland. Mutations in the gene encoding FATE1 may be contributing factors in male infertility.

REFERENCES

1. Olesen, C., et al. 2001. Human FATE is a novel X-linked gene expressed in fetal and adult testis. Mol. Cell. Endocrinol. 184: 25-32.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 300450. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Olesen, C., et al. 2003. Mutational analysis of the human FATE gene in 144 infertile men. Hum. Genet. 113: 195-201.
4. Dong, X.Y., et al. 2003. Identification of two novel CT antigens and their capacity to elicit antibody response in hepatocellular carcinoma patients. Br. J. Cancer 89: 291-297.
5. Yang, X.A., et al. 2004. Purification and refolding of a novel cancer/testis antigen BJ-HCC-2 expressed in the inclusion bodies of *Escherichia coli*. Protein Expr. Purif. 33: 332-338.
6. Yang, X.A., et al. 2005. Immunohistochemical analysis of the expression of FATE/BJ-HCC-2 antigen in normal and malignant tissues. Lab. Invest. 85: 205-213.
7. Doghman, M., et al. 2007. Increased steroidogenic factor-1 dosage triggers adrenocortical cell proliferation and cancer. Mol. Endocrinol. 21: 2968-2987.

CHROMOSOMAL LOCATION

Genetic locus: FATE1 (human) mapping to Xq28.

PRODUCT

FATE1 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 FATE1 shRNA Plasmid (h): sc-90989-SH and FATE1 shRNA (h) Lentiviral Particles: sc-90989-V as alternate gene silencing products.

For independent verification of FATE1 (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-90989A, sc-90989B and sc-90989C.

RESEARCH USE

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

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

FATE1 siRNA (h) is recommended for the inhibition of FATE1 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

FATE1 (B5-9): sc-101220 is recommended as a control antibody for monitoring of FATE1 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 FATE1 gene expression knockdown using RT-PCR Primer: FATE1 (h)-PR: sc-90989-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.