

fzr siRNA (h): sc-44349

BACKGROUND

Fizzy-related protein, known as fzr, is a conserved eukaryotic gene that has been recently identified as a 7WD domain family member and is implicated in cell cycle regulation of *Drosophila* and yeast. Retroviral overexpression of fzr in B-lymphoma cells reduces tumor formation. Fzr overexpression increases B-lymphoma cell susceptibility to natural killer cell (NK) cytotoxicity. Fzr has been implicated in a new category of genes which suppress B-cell tumorigenesis. Current research suggests a novel role for fzr in the target cell interaction with NK cells. Fzr also negatively regulates the levels of cyclins A, B and B3. Loss of fzr causes progression through an extra division cycle in the epidermis and inhibition of endoreduplication in the salivary gland, in addition to failure of cyclin removal. Conversely, premature fzr overexpression down-regulates mitotic cyclins, inhibits mitosis and transforms mitotic cycles into endoreduplication cycles.

REFERENCES

1. Sigrist, S.J., et al. 1997. *Drosophila* fizzy-related downregulates mitotic cyclins and is required for cell proliferation arrest and entry into endocycles. *Cell* 4: 671-681.
2. Inbal, N., et al. 1999. The mammalian fizzy and fizzy-related genes are regulated at the transcriptional and post-transcriptional levels. *FEBS Lett.* 3: 350-354.
3. Wang, C.X., et al. 2000. Overexpression of murine fizzy-related (fzr) increases natural killer cell-mediated cell death and suppresses tumor growth. *Blood* 1: 259-263.

CHROMOSOMAL LOCATION

Genetic locus: FZR1 (human) mapping to 19p13.3.

PRODUCT

fzr 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see fzr shRNA Plasmid (h): sc-44349-SH and fzr shRNA (h) Lentiviral Particles: sc-44349-V as alternate gene silencing products.

For independent verification of fzr (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-44349A, sc-44349B and sc-44349C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

fzr siRNA (h) is recommended for the inhibition of fzr 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 μ M in 66 μ l. 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

fzr (DCS-266): sc-56312 is recommended as a control antibody for monitoring of fzr 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 fzr gene expression knockdown using RT-PCR Primer: fzr (h)-PR: sc-44349-PR (20 μ l, 542 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Huang, K.T., et al. 2012. Estrogen and progesterone regulate p27kip1 levels via the ubiquitin-proteasome system: pathogenic and therapeutic implications for endometrial cancer. *PLoS ONE* 7: e46072.
2. Pavlides, S.C., et al. 2016. TGF- β activates APC through Cdh1 binding for Cks1 and Skp2 proteasomal destruction stabilizing p27^{kip1} for normal endometrial growth. *Cell Cycle* 15: 931-947.

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.