

FXYP3 siRNA (h): sc-60665

BACKGROUND

The mammalian FXYP family maintains Na⁺ and K⁺ gradients between the intracellular and extracellular milieus of cells in processes such as renal Na⁺-reabsorption, muscle contraction and neuronal excitability. FXYPs are single-span membrane proteins that share a 35 amino acid signature domain, beginning with the sequence PFXYP and containing seven invariant and six conserved amino acids. Members of the FXYP family include FXYP1 (PLM, phospholemman), FXYP2 (the γ subunit of the Na/K-ATPase), FXYP3 (Mat8, mammary tumor protein), FXYP4 (CHIF) and FXYP5 (RIC). FXYP3, a 67 amino acid protein, may act as a chloride channel or as a chloride channel regulator. It is expressed in a subset of human breast tumors and shows partial homology to FXYP1. FXYP3 has a putative 20 amino acid leader sequence and a putative transmembrane domain (with two cysteine residues). It contains no consensus phosphorylation sites in the cytoplasmic domain.

REFERENCES

1. Morrison, B.W. and Leder, P. 1994. Neu and Ras initiate murine mammary tumors that share genetic markers generally absent in c-Myc and Int-2-initiated tumors. *Oncogene* 9: 3417-3426.
2. Morrison, B.W., et al. 1995. Mat-8, a novel phospholemman-like protein expressed in human breast tumors, induces a chloride conductance in *Xenopus* oocytes. *J. Biol. Chem.* 270: 2176-2182.
3. Sweadner, K.J. and Rael, E. 2000. The FXYP gene family of small ion transport regulators or channels: cDNA sequence, protein signature sequence, and expression. *Genomics* 68: 41-56.

CHROMOSOMAL LOCATION

Genetic locus: FXYP3 (human) mapping to 19q13.12.

PRODUCT

FXYP3 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 FXYP3 shRNA Plasmid (h): sc-60665-SH and FXYP3 shRNA (h) Lentiviral Particles: sc-60665-V as alternate gene silencing products.

For independent verification of FXYP3 (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-60665A, sc-60665B and sc-60665C.

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

FXYP3 siRNA (h) is recommended for the inhibition of FXYP3 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

FXYP3 (A-8): sc-271808 is recommended as a control antibody for monitoring of FXYP3 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 MarkerTM 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 FXYP3 gene expression knockdown using RT-PCR Primer: FXYP3 (h)-PR: sc-60665-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Liu, C.C., et al. 2016. Silencing overexpression of FXYP3 protein in breast cancer cells amplifies effects of doxorubicin and gamma-radiation on Na⁺/K⁺-ATPase and cell survival. *Breast Cancer Res. Treat.* 155: 203-213.
2. Liu, C.C., et al. 2022. Displacement of native FXYP protein from Na⁺/K⁺-ATPase with novel FXYP peptide derivatives: effects on doxorubicin cytotoxicity. *Front. Oncol.* 12: 859216.

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.