SANTA CRUZ BIOTECHNOLOGY, INC.

FXYD6 siRNA (h): sc-62360

BACKGROUND

The mammalian FXYD 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. FXYDs are single-span membrane proteins that share a 35 amino acid signature domain, beginning with the sequence PFXYD and containing 7 invariant and 6 conserved amino acids. Members of the FXYD family include FXYD1 (PLM, phospholemman), FXYD2 (the γ subunit of the Na^+/K^+-ATPase), FXYD3 (Mat8, mammary tumor protein), FXYD4 (CHIF) and FXYD5 (RIC). FXYD6 is expressed in various epithelial cells bordering the endolymph space and in the auditory neurons. FXYD6 co-localizes with Na^+/K^+-ATPase in the stria vascularis and can be co-immunoprecipitated with Na^+/K^+-ATPase. After expression, FXYD6 associates with Na^+/K^+-ATPase α1-β1 and α1-β2 isozymes, which are preferentially expressed in different regions of the inner ear and also with gastric and non-gastric H^+/K^+-ATPase.

REFERENCES

1. Mahmmoud, Y.A., et al. 2000. Identification of a phospholemman-like protein from shark rectal glands. Evidence for indirect regulation of Na,K-ATPase by protein kinase c via a novel member of the FXYDY family. J. Biol. Chem. 275: 35969-35977.
2. Olstad, O.K., et al. 2003. Molecular heterogeneity in human osteosarcoma demonstrated by enriched mRNAs isolated by directional tag PCR subtraction cloning. Anticancer Res. 23: 2201-2216.
3. Kadowaki, K., et al. 2004. Phosphohippolin expression in the rat central nervous system. Brain Res. Mol. Brain Res. 125: 105-112.
4. Mulligan, M.K., et al. 2006. Toward understanding the genetics of alcohol drinking through transcriptome meta-analysis. Proc. Natl. Acad. Sci. USA 103: 6368-6373.
5. Liu, S.L., et al. 2006. The effect of statin on the aortic gene expression profiling. Int. J. Cardiol. 114: 71-77.
6. Delprat, B., et al. 2007. Dynamic expression of FXYD6 in the inner ear suggests a role of the protein in endolymph homeostasis and neuronal activity. Dev. Dyn. 236: 2534-2540.

CHROMOSOMAL LOCATION

Genetic locus: FXYD6 (human) mapping to 11q23.3.

PRODUCT

FXYD6 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 FXYD6 shRNA Plasmid (h): sc-62360-SH and FXYD6 shRNA (h) Lentiviral Particles: sc-62360-V as alternate gene silencing products.

For independent verification of FXYD6 (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-62360A, sc-62360B and sc-62360C.

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

FXYD6 siRNA (h) is recommended for the inhibition of FXYD6 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

FXYD6 (E-11): sc-398465 is recommended as a control antibody for monitoring of FXYD6 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 FXYD6 gene expression knockdown using RT-PCR Primer: FXYD6 (h)-PR: sc-62360-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.