SANTA CRUZ BIOTECHNOLOGY, INC.

PPEF-2 siRNA (h): sc-39154

BACKGROUND

PPEF-2 (protein phosphatase, EF-hand calcium binding domain 2) belongs to the serine/threonine protein phosphatase/EF-hand motif family and influences normal function of the visual system. PPEF family members appear to play specific roles in multiple types of sensory neurons and may act as markers for sensory neuron differentiation. A 3.7-kb PPEF-2 mRNA is detectable in rat retina. PPEF-2 expression appears to be exclusive to the inner segments of the photoreceptor cells of the retina and in the pineal gland. PPEF-2 contains a protein phosphatase catalytic domain, and at least two EF-hand calcium-binding motifs in its C terminus. PPEF-2 shares high sequence similarity with the *Drosophila* retinal degeneration C (rdgC) gene.

REFERENCES

1. Montini, E., et al. 1997. A novel human serine-threonine phosphatase related to the *Drosophila* retinal degeneration C (rdgC) gene is selectively expressed in sensory neurons of neural crest origin. Hum. Mol. Genet. 6: 1137-1145.
2. Sherman, P.M., et al. 1997. Identification and characterization of a conserved family of protein serine/threonine phosphatases homologous to *Drosophila* retinal degeneration C. Proc. Natl. Acad. Sci. USA 94: 11639-11644.
3. van de Vosse, E., et al. 1997. Exclusion of PPEF as the gene causing X-linked juvenile retinoschisis. Hum. Genet. 101: 235-237.
4. Kutuzov, M.A., et al. 1998. Expression and characterization of PP7, a novel plant protein Ser/Thr phosphatase distantly related to RdgC/PPEF and PP5. FEBS Lett. 440: 147-152.
5. Andreeva, A.V., et al. 1999. RdgC/PP5-related phosphatases: novel components in signal transduction. Cell. Signal. 11: 555-562.
6. Ramulu, P., et al. 2001. Normal light response, photoreceptor integrity, and rhodopsin dephosphorylation in mice lacking both protein phosphatases with EF hands (PPEF-1 and PPEF-2). Mol. Cell. Biol. 21: 8605-8614.
7. Kutuzov, M.A., et al. 2002. Protein Ser/Thr phosphatases PPEF interact with calmodulin. Biochem. Biophys. Res. Commun. 293: 1047-1052.

CHROMOSOMAL LOCATION

Genetic locus: PPEF2 (human) mapping to 4q21.1.

PRODUCT

PPEF-2 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 PPEF-2 shRNA Plasmid (h): sc-39154-SH and PPEF-2 shRNA (h) Lentiviral Particles: sc-39154-V as alternate gene silencing products.

For independent verification of PPEF-2 (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-39154A, sc-39154B and sc-39154C.

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

PPEF-2 siRNA (h) is recommended for the inhibition of PPEF-2 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

PPEF-2 (41): sc-293044 is recommended as a control antibody for monitoring of PPEF-2 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 PPEF-2 gene expression knockdown using RT-PCR Primer: PPEF-2 (h)-PR: sc-39154-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.