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SCOP siRNA (h): sc-45859

BACKGROUND

SCOP (suprachiasmatic nucleus circadian oscillatory protein, PHLPP, PH domain and leucine rich repeat protein phosphatase, PLEKHE1) is a phosphatase that directly dephosphorylates Akt, promotes apoptosis, and suppresses tumor growth. Endogenous SCOP in human embryonic kidney cell lysates produces a major protein and minor protein. SCOP negatively regulates K-Ras signaling in membrane rafts and contributes to the regulation of the Ras-MAPK signaling pathway. Recombinant SCOP can dephosphorylate the hydrophobic motif of Akt1 (Ser 473) *in vitro*, triggering apoptosis and suppressing tumor growth. SCOP levels appear lower in certain colon cancer and glioblastoma cell lines that show elevated Akt phosphorylation. Rat tissues that express SCOP include cerebrum, cerebellum, and testis.

REFERENCES

1. Nagase, T., et al. 1998. Prediction of the coding sequences of unidentified human genes. IX. The complete sequences of 100 new cDNA clones from brain which can code for large proteins *in vitro*. *DNA Res.* 5: 31-39.
2. Shimizu, K., et al. 1999. SCOP, a novel gene product expressed in a circadian manner in rat suprachiasmatic nucleus. *FEBS Lett.* 458: 363-369.
3. Shimizu, K., et al. 2003. Suprachiasmatic nucleus circadian oscillatory protein, a novel binding partner of K-Ras in the membrane rafts, negatively regulates MAPK pathway. *J. Biol. Chem.* 278: 14920-14925.
4. Okabayashi, N., et al. 2003. Ontogeny of circadian clock gene expression in the pineal and the suprachiasmatic nucleus of chick embryo. *Brain Res.* 990: 231-234.

CHROMOSOMAL LOCATION

Genetic locus: PHLPP1 (human) mapping to 18q21.33.

PRODUCT

SCOP 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 SCOP shRNA Plasmid (h): sc-45859-SH and SCOP shRNA (h) Lentiviral Particles: sc-45859-V as alternate gene silencing products.

For independent verification of SCOP (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-45859A, sc-45859B and sc-45859C.

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

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

SCOP (H-3): sc-390129 is recommended as a control antibody for monitoring of SCOP 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 SCOP gene expression knockdown using RT-PCR Primer: SCOP (h)-PR: sc-45859-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. Tan, M., et al. 2016. Depletion of SAG/RBX2 E3 ubiquitin ligase suppresses prostate tumorigenesis via inactivation of the PI3K/Akt/mTOR axis. *Mol. Cancer* 15: 81.

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.