

# SCOP (K-20): sc-46451

## 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 a 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.
5. Jackson, A.C., et al. 2004. Mechanism of spontaneous firing in dorsomedial suprachiasmatic nucleus neurons. J. Neurosci. 24: 7985-7998.
7. Antle, M.C., et al. 2005. Signaling within the master clock of the brain: localized activation of mitogen-activated protein kinase by gastrin-releasing peptide. J. Neurosci. 25: 2447-2454.

## CHROMOSOMAL LOCATION

Genetic locus: PHLPP (human) mapping to 18q21.33; Phlpp (mouse) mapping to 1 E2.1.

## SOURCE

SCOP (K-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of SCOP of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-46451 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

SCOP (K-20) is recommended for detection of SCOP of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

SCOP (K-20) is also recommended for detection of SCOP in additional species, including canine, bovine, porcine and avian.

Suitable for use as control antibody for SCOP siRNA (h): sc-45859, SCOP siRNA (m): sc-45860, SCOP shRNA Plasmid (h): sc-45859-SH, SCOP shRNA Plasmid (m): sc-45860-SH, SCOP shRNA (h) Lentiviral Particles: sc-45859-V and SCOP shRNA (m) Lentiviral Particles: sc-45860-V.

Molecular Weight of SCOP long β isoform: 190 kDa.

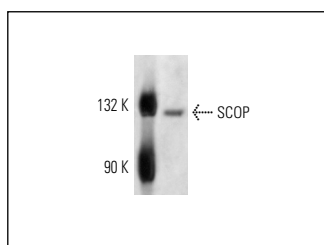
Molecular Weight of SCOP short α isoform: 140 kDa.

Positive Controls: Y79 nuclear extract: sc-2126.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



SCOP (K-20): sc-46451. Western blot analysis of SCOP expression in Y79 nuclear extract.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

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Try **SCOP (H-3): sc-390129**, our highly recommended monoclonal alternative to SCOP (K-20).