SANTA CRUZ BIOTECHNOLOGY, INC.

SCAP (K-19): sc-9674

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The transcription factors SREBPs (sterol regulatory element binding proteins) span the ER membrane, and in response to sterol depletion, the N-terminal domain of SREBPs are proteolytically activated, released from the membrane and then translocate to the nucleus where they induce the expression of genes regulating cholesterol metabolism. This proteolytic activation requires the sequential cleavage of SREBPs at Site-1, within the lumen of the ER, followed by cleavage at Site-2, within the first transmembrane domain. The cleavage at Site-1 separates the N-terminal and C-terminal domains of the protein and it requires the serine protease, S1P (Site-1 protease). Site-2 is subsequently processed by a putative zinc metalloprotease S2P, which releases the activated N-terminal domain for nuclear translocation. This proteolytic pathway is tightly regulated by sterol levels and is under the control of SCAP (SREBP cleavage-activating protein). SCAP, a sterol sensor, is latently bound to the C-terminal regulatory domains of the SREBPs, and it regulates cleavage of SREBPs at Site-1. Sterol levels influence the activity of SCAP, as SCAP is activated only in sterol-depleted cells, and it is inhibited by sterol accumulation.

REFERENCES

1. Hua, X., et al. 1996. Regulated cleavage of sterol regulatory element binding proteins requires sequences on both sides of the endoplasmic reticulum membrane. J. Biol. Chem. 271: 10379-10384.
2. Rawson, R.B., et al. 1997. Complementation cloning of S2P, a gene encoding a putative metalloprotease required for intramembrane cleavage of SREBPs. Mol. Cell 1: 47-57.
3. Sakai, J., et al. 1998. Molecular identification of the sterol-regulated luminal protease that cleaves SREBPs and controls lipid composition of animal cells. Mol. Cell 2: 505-514.
4. Sakai, J., et al. 1998. Cleavage of sterol regulatory element-binding proteins (SREBPs) at Site-1 requires interaction with SREBP cleavage-activating protein. Evidence from *in vivo* competition studies. J. Biol. Chem. 273: 5785-5793.
5. Brown, M.S., et al. 1999. A proteolytic pathway that controls the cholesterol content of membranes, cells, and blood. Proc. Natl. Acad. Sci. USA 96: 11041-11048.
6. Nohturfft, A., et al. 1999. Sterols regulate cycling of SREBP cleavage-activating protein (SCAP) between endoplasmic reticulum and Golgi. Proc. Natl. Acad. Sci. USA 96: 11235-11240.

CHROMOSOMAL LOCATION

Genetic locus: SCAP (human) mapping to 3p21.31; Scap (mouse) mapping to 9 F2.

SOURCE

SCAP (K-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of SCAP of human origin.

STORAGE

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

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-9674 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

SCAP (K-19) is recommended for detection of SCAP of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

SCAP (K-19) is also recommended for detection of SCAP in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for SCAP siRNA (h): sc-36462, SCAP siRNA (m): sc-36463, SCAP shRNA Plasmid (h): sc-36462-SH, SCAP shRNA Plasmid (m): sc-36463-SH, SCAP shRNA (h) Lentiviral Particles: sc-36462-V and SCAP shRNA (m) Lentiviral Particles: sc-36463-V.

Molecular Weight of SCAP: 150 kDa.

Positive Controls: C4 whole cell lysate: sc-364186.

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) 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.

SELECT PRODUCT CITATIONS

1. Heemers, H., et al. 2001. Androgens stimulate lipogenic gene expression in prostate cancer cells by activation of the sterol regulatory element-binding protein cleavage activating protein/sterol regulatory element-binding protein pathway. Mol. Endocrinol. 15: 1817-1828.
2. Scott, L., et al. 2002. Selective upregulation of dopamine D1 receptors in dendritic spines by NMDA receptor activation. Proc. Natl. Acad. Sci. USA 99: 1661-1664.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.