

SCAP (S-20): sc-34121

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 translocated 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 is inhibited by sterol accumulation.

REFERENCES

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- 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.
- 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.
- 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.
- Espenshade, P.J., et al. 1999. Autocatalytic processing of site-1 protease removes propeptide and permits cleavage of sterol regulatory element-binding proteins. *J. Biol. Chem.* 274: 22795-22804.
- Cheng, D., et al. 1999. Secreted site-1 protease cleaves peptides corresponding to luminal loop of sterol regulatory element-binding proteins. *J. Biol. Chem.* 274: 22805-22812.

CHROMOSOMAL LOCATION

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

SOURCE

SCAP (S-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a C-terminal cytoplasmic domain 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-34121 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

SCAP (S-20) 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 (S-20) 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.

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.