SANTA CRUZ BIOTECHNOLOGY, INC.

S2P (N-20): sc-10863

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 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 protease 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.

CHROMOSOMAL LOCATION

Genetic locus: MBTPS2 (human) mapping to Xp22.12.

SOURCE

S2P (N-20) is an affinity purified goat polyclonal antibody raised against an epitope mapping near the N-terminus of S2P 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-10863 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.

RESEARCH USE

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

APPLICATIONS

S2P (N-20) is recommended for detection of S2P of 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

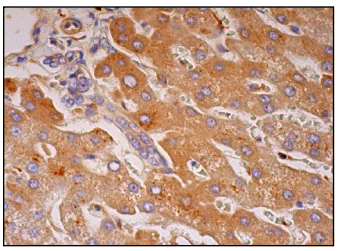
S2P (N-20) is also recommended for detection of S2P in additional species, including equine, canine and bovine.

Suitable for use as control antibody for S2P siRNA (h): sc-41652, S2P shRNA Plasmid (h): sc-41652-SH and S2P shRNA (h) Lentiviral Particles: sc-41652-V.

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. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



S2P (N-20): sc-10863. Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic staining of hepatocytes and bile duct cells.

SELECT PRODUCT CITATIONS

1. Gurcel, L., et al. 2005. Caspase-1 activation of lipid metabolic pathways in response to bacterial pore-forming toxins promotes cell survival. Cell 126: 1135-1145.