SANTA CRUZ BIOTECHNOLOGY, INC.

S2P (1A3): sc-293341

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 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.

CHROMOSOMAL LOCATION

Genetic locus: MBTPS2 (human) mapping to Xp22.12; Mbtps2 (mouse) mapping to X F4.

SOURCE

S2P (1A3) is a mouse monoclonal antibody raised against amino acids 312-418 of S2P of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

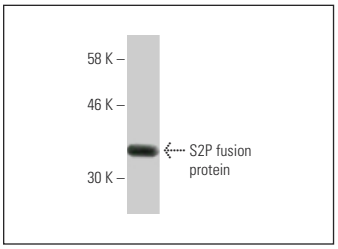
S2P (1A3) is recommended for detection of S2P of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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).

Suitable for use as control antibody for S2P siRNA (h): sc-41652, S2P siRNA (m): sc-153193, S2P shRNA Plasmid (h): sc-41652-SH, S2P shRNA Plasmid (m): sc-153193-SH, S2P shRNA (h) Lentiviral Particles: sc-41652-V and S2P shRNA (m) Lentiviral Particles: sc-153193-V.

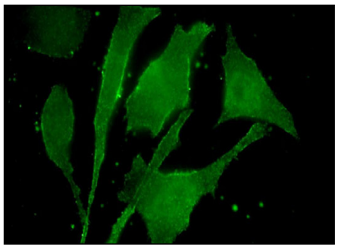
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



S2P (1A3): sc-293341. Western blot analysis of human recombinant S2P fusion protein.



S2P (1A3): sc-293341. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and membrane localization.

SELECT PRODUCT CITATIONS

1. McCurdy, E.P., et al. 2019. Promotion of axon growth by the secreted end of a transcription factor. Cell Rep. 29: 363-377.e5.
2. Andrades, E., et al. 2023. Loss of dyskerin facilitates the acquisition of metastatic traits by altering the mevalonate pathway. Life Sci. Alliance 6: e202201692.

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.

PROTOCOLS

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