SANTA CRUZ BIOTECHNOLOGY, INC.

SREBP-1 (2A4): sc-13551

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The low density lipoprotein (LDL) receptor mediates the endocytic uptake of cholesterol-carrying lipoproteins, thereby controlling cholesterol levels in cells and plasma. Transcription of the LDL receptor gene is controlled by a ten base pair sequence in the 5' flanking region, designated sterol regulatory element 1 (SRE-1). When cellular sterol stores are depleted, the element is activated, the gene is transcribed and the cellular uptake of LDL increases. A set of SRE-binding proteins (SREBPs) have been identified, including two basic helix-loop-helix leucine zipper (bHLH-zip) transcription factors, designated SREBP-1 and SREBP-2. SREBP-1 (also designated ADD1, for adipocyte determination and differentiation factor) is synthesized as a precursor that is attached to the nuclear envelope and endoplasmic reticulum. In sterol-depleted cells, the membrane-bound precursor is cleaved to generate a soluble NH_2-terminal fragment that translocates to the nucleus to activate transcription. Sterols inhibit the cleavage of SREBP-1.

REFERENCES

1. Brown, M.S., et al. 1986. A receptor-mediated pathway for cholesterol homeostasis. Science 232: 34-47.
2. Smith, J.R., et al. 1990. Identification of nucleotides responsible for enhancer activity of sterol regulatory element in low density lipoprotein receptor gene. J. Biol. Chem. 265: 2306-2310.
3. Goldstein, J.L., et al. 1990. Regulation of the mevalonate pathway. Nature 343: 425-430.

CHROMOSOMAL LOCATION

Genetic locus: SREBF1 (human) mapping to 17p11.2; Srebf1 (mouse) mapping to 11 B2.

SOURCE

SREBP-1 (2A4) is a mouse monoclonal antibody raised against amino acids 301-407 of SREBP-1a of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-13551 X, 200 µg/0.1 ml.

SREBP-1 (2A4) is available conjugated to agarose (sc-13551 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to either Alexa Fluor® 546 (sc-13551 AF546) or Alexa Fluor® 594 (sc-13551 AF594), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-13551 AF680) or Alexa Fluor® 790 (sc-13551 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

SREBP-1 (2A4) is recommended for detection of SREBP-1 of mouse, rat, human and hamster 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for SREBP-1 siRNA (h): sc-36557, SREBP-1 siRNA (m): sc-36558, SREBP-1 siRNA (r): sc-156126,SREBP-1 shRNA Plasmid (h): sc-36557-SH, SREBP-1 shRNA Plasmid (m): sc-36558-SH, SREBP-1 shRNA Plasmid (r): sc-156126-SH, SREBP-1 shRNA (h) Lentiviral Particles: sc-36557-V, SREBP-1 shRNA (m) Lentiviral Particles: sc-36558-V and SREBP-1 shRNA (r) Lentiviral Particles: sc-156126-V.

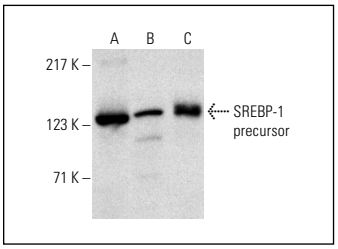
SREBP-1 (2A4) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of SREBP-1 precursor: 125 kDa.

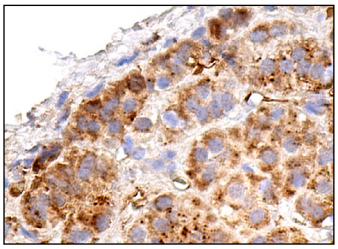
Molecular Weight of mature SREBP-1: 68 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, NIH/3T3 nuclear extract: sc-2138 or KNRK nuclear extract: sc-2141.

DATA



SREBP-1 (2A4): sc-13551. Western blot analysis of SREBP-1 precursor expression in HeLa (**A**), NIH/3T3 (**B**) and KNRK (**C**) nuclear extracts.



SREBP-1 (2A4): sc-13551. Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Toth, J.I., et al. 2004. Selective coactivator interactions in gene activation by SREBP-1a and -1c. Mol. Cell. Biol. 24: 8288-8300.
2. Han, J., et al. 2015. The CREB coactivator CRTC2 controls hepatic lipid metabolism by regulating SREBP1. Nature 524: 243-246.
3. Morioka, S., et al. 2016. TAK1 regulates hepatic lipid homeostasis through SREBP. Oncogene 35: 3829-3838.
4. Bertolio, R., et al. 2019. Sterol regulatory element binding protein 1 couples mechanical cues and lipid metabolism. Nat. Commun. 10: 1326.
5. Weber, R.A., et al. 2020. Maintaining iron homeostasis is the key role of lysosomal acidity for cell proliferation. Mol. Cell 77: 645.e7-655.e7.

RESEARCH USE

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