SANTA CRUZ BIOTECHNOLOGY, INC.

SREBP-1 (A-4): sc-365513

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.

CHROMOSOMAL LOCATION

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

SOURCE

SREBP-1 (A-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1119-1147 at the C-terminus of SREBP-1 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.

SREBP-1 (A-4) is available conjugated to agarose (sc-365513 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-365513 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365513 PE), fluorescein (sc-365513 FITC), Alexa Fluor® 488 (sc-365513 AF488), Alexa Fluor® 546 (sc-365513 AF546), Alexa Fluor® 594 (sc-365513 AF594) or Alexa Fluor® 647 (sc-365513 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365513 AF680) or Alexa Fluor® 790 (sc-365513 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-365513 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

SREBP-1 (A-4) is recommended for detection of SREBP-1 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).

SREBP-1 (A-4) is also recommended for detection of SREBP-1 in additional species, including canine, bovine and porcine.

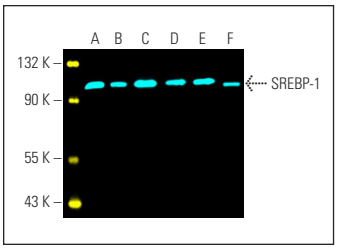
Suitable for use as control antibody for SREBP-1 siRNA (h): sc-36557, SREBP-1 siRNA (m): sc-36558, SREBP-1 siRNA (r): sc-156126, SREBP-1 shRNA Plasmid (h): sc-36557-SH, SREBP-1 shRNA Plasmid (m): sc-36558-SH, SREBP-1 shRNA Plasmid (r): sc-156126-SH, SREBP-1 shRNA (h) Lentiviral Particles: sc-36557-V,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

Molecular Weight of mature SREBP-1: 68 kDa.

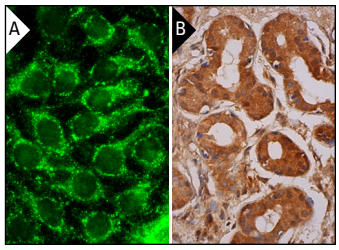
Molecular Weight of SREBP-1 precursor: 125 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, NIH/3T3 whole cell lysate: sc-2210 or A549 cell lysate: sc-2413.

DATA



SREBP-1 (A-4) Alexa Fluor® 647: sc-365513 AF647. Direct fluorescent western blot analysis of SREBP-1 expression in Hep G2 (**A**), A549 (**B**), NIH/3T3 (**C**), SK-BR-3 (**D**) and MCF7 (**E**) whole cell lysates and human adrenal gland tissue extract (**F**). Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker MW Tag-Alexa Fluor® 488: sc-516790.



SREBP-1 (A-4): sc-365513. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human salivary gland tissue showing cytoplasmic and nuclear staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Bose, S.K., et al. 2014. Forkhead box transcription factor regulation and lipid accumulation by hepatitis C virus. J. Virol. 88: 4195-4203.
2. Yu, Y., et al. 2020. Vaccarin promotes proliferation of and milk synthesis in bovine mammary epithelial cells through the Prl receptor-PI3K signaling pathway. Eur. J. Pharmacol. 880: 173190.
3. Alza, N.P., et al. 2021. Neutral lipids as early biomarkers of cellular fate: the case of α-synuclein overexpression. Cell Death Dis. 12: 52.

STORAGE

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