

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



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-cells, the membrane-bound precursor is cleaved to generate a soluble NH₂-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 IgG₁ 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).

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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.

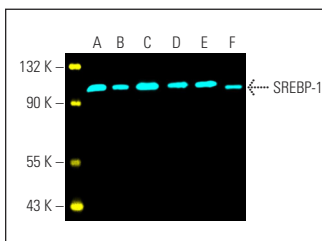
Suitable for use as control antibody for SREBP-1 siRNA (h): sc-36557, SREBP-1 siRNA (m): sc-36558, SREBP-1 siRNA (r): sc-156126, SREBP-1 shRNA Plasmid (h): sc-36557-SH, SREBP-1 shRNA Plasmid (m): sc-36558-SH, SREBP-1 shRNA Plasmid (r): sc-156126-SH, SREBP-1 shRNA (h) Lentiviral Particles: sc-36557-V,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

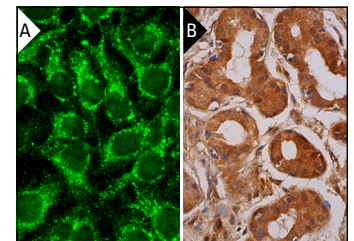
Molecular Weight of SREBP-1 precursor: 125 kDa.

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.