

# SREBP-1 (E-4): sc-17755

## 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<sub>2</sub>-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 (E-4) is a mouse monoclonal antibody raised against amino acids 41-200 of SREBP-1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> 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-17755 X, 200 µg/0.1 ml.

SREBP-1 (E-4) is available conjugated to agarose (sc-17755 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-17755 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-17755 PE), fluorescein (sc-17755 FITC), Alexa Fluor<sup>®</sup> 488 (sc-17755 AF488), Alexa Fluor<sup>®</sup> 546 (sc-17755 AF546), Alexa Fluor<sup>®</sup> 594 (sc-17755 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-17755 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-17755 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-17755 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## 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 (E-4) is recommended for detection of SREBP-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:500), 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 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.

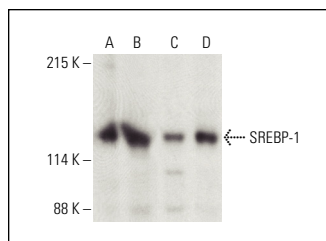
SREBP-1 (E-4) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of SREBP-1 precursor: 125 kDa.

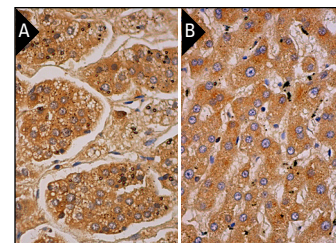
Molecular Weight of mature SREBP-1: 68 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, A549 cell lysate: sc-2413 or Jurkat whole cell lysate: sc-2204.

## DATA



SREBP-1 (E-4): sc-17755. Western blot analysis of SREBP-1 expression in A549 (A), Jurkat (B) and Hep G2 (C) whole cell lysates and HeLa nuclear extract (D). Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



SREBP-1 (E-4): sc-17755. Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing cytoplasmic staining of glandular cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic staining of hepatocytes (B).

## SELECT PRODUCT CITATIONS

1. Sundqvist, A., et al. 2003. Transcription-dependent degradation controls the stability of the SREBP family of transcription factors. *Proc. Natl. Acad. Sci. USA* 100: 13833-13838.
2. Roh, E., et al. 2020. Ginsenoside Mc1 improves liver steatosis and Insulin resistance by attenuating ER stress. *J. Ethnopharmacol.* 259: 112927.
3. Rebollo-Hernanz, M., et al. 2022. Selected soybean varieties regulate hepatic LDL-cholesterol homeostasis depending on their glycinin:β-conglycinin ratio. *Antioxidants* 12: 20.

## RESEARCH USE

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