SANTA CRUZ BIOTECHNOLOGY, INC.

OSC (D-6): sc-514507

BACKGROUND

OSC, also known as LSS (lanosterol synthase), is a 732 amino acid protein that contains four PFTB repeats and belongs to the terpene cyclase family. Functioning in the pathway of terpene metabolism, OSC catalyzes the first step in the biosynthesis of cholesterol, vitamin D and steroid hormones, namely the conversion of (S)-2,3 oxidosqualene to lanosterol. Lanosterol is a tetracyclic triterpenoid that is required for the synthesis of all steroids. Due to its role in lanosterol production, OSC is crucial for proper cholesterol formation and overall steroid function. Human OSC shares 83% homology with its rat counterpart, suggesting a conserved role between species. Multiple isoforms of OSC exist as a result of alternative splicing events.

CHROMOSOMAL LOCATION

Genetic locus: LSS (human) mapping to 21q22.3; Lss (mouse) mapping to 10 C1.

SOURCE

OSC (D-6) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of OSC 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.

OSC (D-6) is available conjugated to agarose (sc-514507 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-514507 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514507 PE), fluorescein (sc-514507 FITC), Alexa Fluor® 488 (sc-514507 AF488), Alexa Fluor® 546 (sc-514507 AF546), Alexa Fluor® 594 (sc-514507 AF594) or Alexa Fluor® 647 (sc-514507 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514507 AF680) or Alexa Fluor® 790 (sc-514507 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

OSC (D-6) is recommended for detection of OSC of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for OSC siRNA (h): sc-91491, OSC siRNA (m): sc-151329, OSC shRNA Plasmid (h): sc-91491-SH, OSC shRNA Plasmid (m): sc-151329-SH, OSC shRNA (h) Lentiviral Particles: sc-91491-V and OSC shRNA (m) Lentiviral Particles: sc-151329-V.

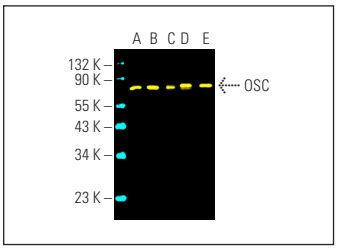
Molecular Weight of OSC: 83 kDa.

Positive Controls: JAR cell lysate: sc-2276, HeLa whole cell lysate: sc-2200 or SH-SY5Y cell lysate: sc-3812.

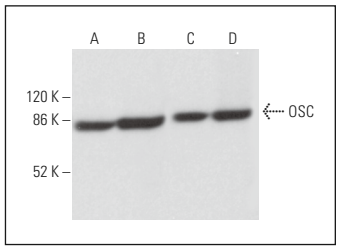
RECOMMENDED SUPPORT REAGENTS

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.

DATA



OSC (D-6) Alexa Fluor® 488: sc-514507 AF488. Direct fluorescent western blot analysis of OSC expression in HeLa (**A**), JAR (**B**), SH-SY5Y (**C**), Caco-2 (**D**) and A-10 (**E**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker™ MW Tag-Alexa Fluor® 647: sc-516791.



OSC (D-6): sc-514507. Western blot analysis of OSC expression in MCF7 (**A**), Caco-2 (**B**), C3H/10T1/2 (**C**) and A-10 (**D**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Romano, M.T., et al. 2018. Bi-allelic mutations in LSS, encoding lanosterol synthase, cause autosomal-recessive hypotrichosis simplex. Am. J. Hum. Genet. 103: 777-785.
2. Criscuolo, D., et al. 2020. Cholesterol homeostasis modulates platinum sensitivity in human ovarian cancer. Cells 9: 828.
3. Li, Z., et al. 2023. The interaction between polyphyllin I and SQLE protein induces hepatotoxicity through SREBP-2/HMGCR/SQLE/LSS pathway. J. Pharm. Anal. 13: 39-54.
4. Yeo, X.H., et al. 2023. The effect of inhibition of receptor tyrosine kinase AXL on DNA damage response in ovarian cancer. Commun. Biol. 6: 660.
5. Sun, X., et al. 2023. Lanosterol synthase loss of function decreases the malignant phenotypes of HepG2 cells by deactivating the Src/MAPK signaling pathway. Oncol. Lett. 26: 295.
6. Lu, F., et al. 2024. Dysregulation of brain cholesterol biosynthetic pathway following hypoxia ischemia in neonatal mice. Dev. Neurosci. 20: 1-17.

RESEARCH USE

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