SANTA CRUZ BIOTECHNOLOGY, INC.

Squalene epoxidase (H-6): sc-271651

BACKGROUND

Several proteins mediate the biosynthesis of cholesterol. The first specific step in the cholesterol biosynthetic pathway is the conversion of trans-farnesyl-diphosphate to Squalene, which is catalyzed by the endoplasmic reticulum membrane-associated enzyme Squalene synthetase, also designated Squalene synthase and farnesyl-diphosphate farnesyltransferase. Squalene synthetase is located at a branch point in the mevalonate pathway and is also involved in isoprenoid biosynthesis. Squalene epoxidase, also designated Squalene monooxygenase, is a multi-pass microsomal membrane-associated enzyme that catalyzes the first oxygenation step in sterol biosynthesis and most likely functions as one of the rate-limiting enzymes in this pathway. Squalene epoxidase may form a complex with Squalene synthetase.

CHROMOSOMAL LOCATION

Genetic locus: SQLE (human) mapping to 8q24.13.

SOURCE

Squalene epoxidase (H-6) is a mouse monoclonal antibody raised against amino acids 275-574 mapping at the C-terminus of Squalene epoxidase of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Squalene epoxidase (H-6) is available conjugated to agarose (sc-271651 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271651 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271651 PE), fluorescein (sc-271651 FITC), Alexa Fluor® 488 (sc-271651 AF488), Alexa Fluor® 546 (sc-271651 AF546), Alexa Fluor® 594 (sc-271651 AF594) or Alexa Fluor® 647 (sc-271651 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271651 AF680) or Alexa Fluor® 790 (sc-271651 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Squalene epoxidase (H-6) is recommended for detection of Squalene epoxidase of 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), 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 Squalene epoxidase siRNA (h): sc-61608, Squalene epoxidase shRNA Plasmid (h): sc-61608-SH and Squalene epoxidase shRNA (h) Lentiviral Particles: sc-61608-V.

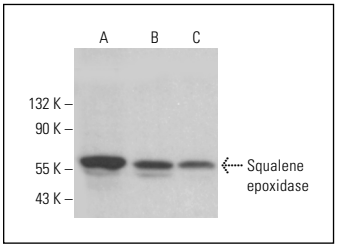
Molecular Weight of Squalene epoxidase: 55 kDa.

Positive Controls: Caco-2 cell lysate: sc-2262, Hep G2 cell lysate: sc-2227 or U-87 MG cell lysate: sc-2411.

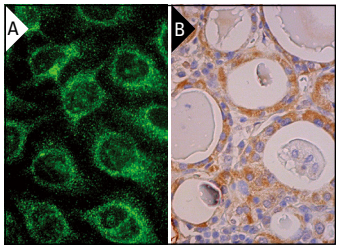
STORAGE

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

DATA



Squalene epoxidase (H-6): sc-271651. Western blot analysis of Squalene epoxidase expression in Caco-2 (**A**), Hep G2 (**B**) and U-87 MG (**C**) whole cell lysates.



Squalene epoxidase (H-6): sc-271651. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Koizumi, Y., et al. 2019. Genome-scale CRISPR/Cas9 screening revealed Squalene epoxidase as susceptibility factor for cytotoxicity of malformin A1. Chembiochem 20: 1563-1568.
2. Pan, Q., et al. 2021. The ZMYND8-regulated mevalonate pathway endows YAP-high intestinal cancer with metabolic vulnerability. Mol. Cell 81: 2736-2751.e8.
3. Zhang, E.B., et al. 2021. Antifungal agent Terbinafine restrains tumor growth in preclinical models of hepatocellular carcinoma via AMPK-mTOR axis. Oncogene 40: 5302-5313.
4. Zong, Q., et al. 2022. Sodium butyrate alleviates deoxynivalenol-induced hepatic cholesterol metabolic dysfunction via RORγ-mediated histone acetylation modification in weaning piglets. J. Anim. Sci. Biotechnol. 13: 133.
5. Martella, N., et al. 2023. Lavender essential oil modulates hepatic cholesterol metabolism in HepG2 cells. Curr. Issues Mol. Biol. 45: 364-378.
6. Roberts, M.A., et al. 2023. Parallel CRISPR-Cas9 screens identify mechanisms of PLIN2 and lipid droplet regulation. Dev. Cell 58: 1782-1800.e10.
7. Xian, M., et al. 2024. Leukocyte immunoglobulin-like receptor B1 (LILRB1) protects human multiple myeloma cells from ferroptosis by maintaining cholesterol homeostasis. Nat. Commun. 15: 5767.
8. Zhang, J., et al. 2024. Influenza A virus infection activates STAT3 to enhance SREBP2 expression, cholesterol biosynthesis, and virus replication. iScience 27: 110424.
9. Yan, H., et al. 2025. Disturbing cholesterol/sphingolipid metabolism by squalene epoxidase arises crizotinib hepatotoxicity. Adv. Sci. 12: e2414923.

RESEARCH USE

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